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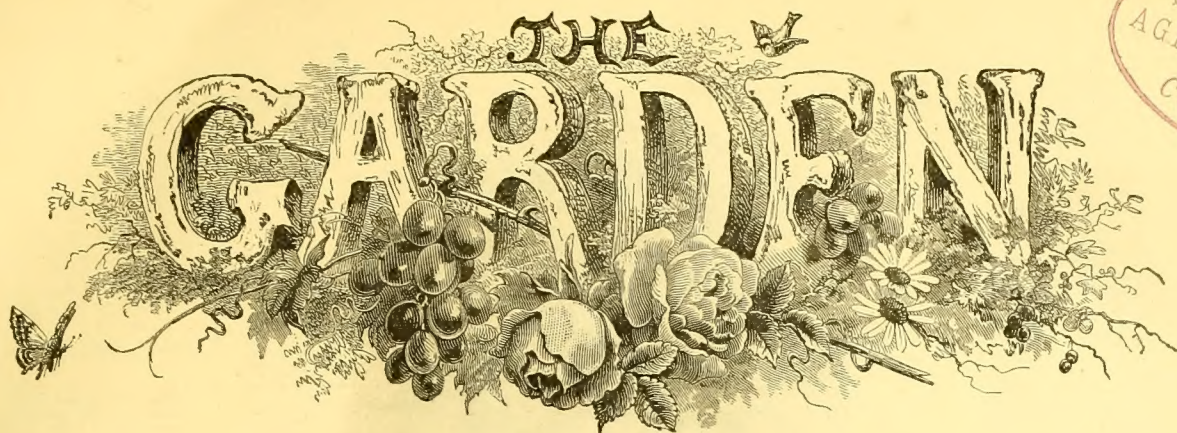






*Wm. L. Rivers*





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AN

ILLUSTRATED WEEKLY JOURNAL

OF

HORTICULTURE IN ALL ITS BRANCHES.

FOUNDED BY

*W. Robinson, F.L.S., Author of "Alpine Flowers," etc.*

"You see, sweet maid, we marry  
A gentle scion to the wildest stock  
And make conceive a bark of baser kind  
By bud of nobler race: This is an art  
Which does mend nature change it rather.  
The art itself is nature."—*Shakespeare.*

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VOL. XX.—CHRISTMAS, 1881.

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LONDON:

OFFICE: 37, SOUTHAMPTON STREET, COVENT GARDEN, W.C.





TO THE MEMORY  
OF  
JAMES CRAIG NIVEN,

LATE CURATOR OF THE HULL BOTANIC GARDENS,

THIS, THE TWENTIETH VOLUME OF "THE GARDEN"

IS DEDICATED.

W. R., December 31, 1881.

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## JAMES CRAIG NIVEN.

MR. J. C. NIVEN was born in 1823, of Scotch parents, in Dublin. His father, Ninian Niven, held for many years the position of curator of the Royal Dublin Society's Botanic Garden at Glasnevin. Mr. J. C. Niven was educated in Dublin, with a view to entering the medical profession, disliking which, he commenced his career in his father's profession at the Royal Botanic Gardens, Belfast, in 1843, where he passed through the initiatory stages of his training, and, after two years' residence, he went to the Duke of Buccleuch's establishment at Dalkeith Palace, where, under Mr. McIntosh (then one of the leading horticulturists of the day), he found active employment, and acquired a position, not only in the horticultural branches immediately connected with the ordinary routine of gardening, but was also actively employed in the preparation of the plans for "The Book of the Garden," a standard work, which still holds a prominent position amongst horticultural literature.

In the early part of 1847 he obtained an appointment in the Royal Gardens, Kew, where, although he had held the position of foreman in one of the departments at Dalkeith, he entered simply as one of the ordinary staff, his object—a most exemplary one—being to take advantage of the widely-extended field for information which an establishment such as that at the Royal Gardens offered, even at a sacrifice of position, both in a social and pecuniary point of view. However, within the short space of twelve months a vacancy occurred in one of the most important botanical departments of that establishment, and, though then under twenty years of age, and the youngest in the Gardens, he received the appointment, after passing through a tolerably stiff examination, and for the five following years held under his control a gradually-increasing botanical department, until, in 1852, a special position as assistant curator of the Royal Gardens was assigned him; a change, however, in government, and a consequent reduction in the expenditure in connection with the garden caused the new appointment to be abolished for the time being.

At the close of the year of 1852 an application was made to Sir William Hooker, then director of the Royal Gardens, by Mr. Spence, the entomologist, for a curator for the Botanic Gardens at Hull. The meeting of the British Association was to take place in that town during the autumn of the following year and the committee of the gardens were most anxious to do the best they could to resuscitate an institution that had almost become extinct—so far, at least, as any pretension to science was concerned. Mr. Niven in the previous year had been one of the three candidates selected for examination, out of about eighty applicants, for the curatorship of the Cambridge Botanic Garden, and was declared entitled to the appointment by the examiner, having obtained the largest number of marks, but he was thought too young by the authorities; the appointment at Hull, however, was at once offered, indeed, urged upon him by Sir William Hooker, and he entered upon his duties in January, 1853. In accepting this appointment Mr. Niven undertook a task of no ordinary character, as the gardens were in a wretched state of neglect, devoid of all the elements of popularity, and in a state of all but financial collapse. Owing, however, to the industry and energy he brought to bear on his work, Mr. Niven had succeeded within twelve months in re-modelling the garden, and giving it much of a scientific character. In addition to the immediate work connected with the garden, Mr. Niven took an active part on the Committee in connection with the arrangements for the reception of the Association. After the first two or three years, during which time the curator had to contend with a deep-rooted spirit of exclusiveness on the part of the committee of management, a thorough reorganisation of the Institution took place, resulting in a steady increase of its popularity, and in the subscription list being nearly trebled. The collection of plants also rapidly increased, till, in 1866, the catalogue of hardy, herbaceous, and alpine plants then in cultivation numbered upwards of 6000 species, and took rank as one of the most extensive in the country, a fact of which the town, as well as Mr. Niven, might well feel proud.

In the year 1853 the Botanical Lectureship in connection with the Hull School of Medicine became vacant, and Mr. Niven was at once appointed to this responsible position, and for fifteen years he delivered each summer his course of fifty lectures to the medical students, with such benefit to the students as many of them, now in practice in the town and country, will, no doubt, look back upon with feelings of pleasure. The Medical School having (for reasons we need not mention) ceased to exist, the Chemists' Association secured his services as their botanic lecturer, which position he held for above seven years. In addition to this he also delivered a winter course of lectures at the Philosophical Society's class rooms under the auspices of the Art and Science Department. It is stated that during Mr. Niven's residence in Hull he delivered nearly fifty courses of botanical lectures.

In literary matters his pen was not idle, being a frequent and large contributor to *THE GARDEN* and some other horticultural papers. He also edited the last edition of "Maund's Botanic Garden," in six volumes, and, in addition to this, he contributed largely on hardy plants to various works in course of publication, and wrote a little pamphlet on window gardening for the society in Hull.

The old gardens at last began to show signs of inactivity for want of pure air. The gradual loss of rare plants, and the slow, but certain destruction of the already dilapidated buildings called for some sure, but speedy remedy, and, through the instrumentality of Mr. Niven and a few of the proprietors, it was decided to close the garden and purchase a site for a new one. Mr. Niven at once undertook to furnish the necessary plans for the same, and, these accepted, the work was pushed on rapidly under his constant and watchful superintendence. At the closing of the old garden in September, 1877, a hope was expressed by the management that the new one would be ready for the opening ceremony about May, 1879. This



hope, keenly entertained by Mr. Niven, was destined not to take place. A vexatious litigation commenced respecting the sale of the old garden, and the directors threw the affair into Chancery, which ultimately extended over a period of three years, so that it was found impossible to have the new gardens ready until July 19, 1880, when they were opened to the public, between 20,000 and 30,000 persons visiting them on the opening day. In August of the same year the directors decided to give a grand fête in honour of the cutting of the first sod for the Hull and Barnsley Railway. Arrangements had been partly made with the town authorities to throw open the gardens to the public on this occasion, but, from a mercenary spirit shown by the town, the arrangements fell through, and the directors, acting in a most liberal spirit, in spite of the town opposition, gave the fête in its entirety, with loss to themselves. On this day Mr. Niven was far from well, suffering from an attack of nephritis, for which he consulted his old friend and colleague, Dr. W. H. Browne. He was advised absolute rest; this he declined to take. Ever thinking of the welfare of others, he refused to take care of himself and take that rest which Nature required. The original disease improved towards the end of the season, but much graver symptoms with lung complication began to make serious inroads on a previously healthy constitution. Even then his friends did not expect any serious mischief, and his own refrain, "Oh! I shall soon be all right," told how little the sad end was expected. Nearly a year ago his medical attendants advised change of air, and he, with a dear friend of his, started for Dublin. The change of scene and new treatment appeared at first to be beneficial, and, from the flattering reports that arrived, it was hoped that his life might be prolonged; but evidently he, with his usual foresight, felt this was not to be. On his return to England he was evidently changed for the worse; the end was slowly, but surely drawing near, and on Sunday morning, Oct. 16, 1881, he quietly passed away. His genial, pleasant face will long be remembered and missed in Hull, where his scientific acquirements had been much appreciated, and indeed of much use to the town.

B.





# THE GARDEN.

VOL. XX.



## FLORAL DECORATIONS.

A few remarks on the late exhibition of floral decorations in the gardens of the Royal Botanic Society, and some advice offered by the judges, may be useful and encouraging to exhibitors. In the objects and arrangements lately shown there were found a few general defects, but chiefly a want of simplicity of effect and unity of design. Too many flowers of too many kinds were crowded together; it was more than once the remark of the judges: "If such and such

flowers had been omitted this would have deserved a prize."

In arrangements for dinner tables, or any decoration to be seen at night, it should be borne in mind that flowers of warm colours should be used, warm colours being any kind of red or pink, orange, yellow, and any white that is tinged with red or yellow, to the exclusion of the cold colours, blue, purple, lilac, and cold whites; these make no effect at night; also that the yellower shades of green show brightest under artificial light.

A perfect dinner-table decoration may be made with one kind of flower only with appropriate foliage, or with two or three kinds of flowers of harmonious colouring.

It may be accepted, as a rule, that the greater the number of varieties and colours of flowers used, the greater the difficulty of making a satisfactory arrangement.

It is recommended that not more than three principal objects should be upon a large dining-table; this would apply to a table not larger than would seat eighteen or twenty persons. The only other flowers would be in specimen glasses, and these should agree in colour with the chief decoration.

It is a common fault that dinner-table flowers are made to stand too high; there should be nothing so high that persons on either side of the table may not see each other clear above the flowers; therefore it is recommended that low bowl-shaped vases be used rather than trumpet-shaped. It would be different, and higher decorations would be advised, in the case of a state banquet or dinner of ceremony, where the great length of tables would demand larger features, and where the guests would be probably unknown to each other.

The small bouquets in specimen glasses ought to show well all round; they should not be over large, and may be of the most delicate flowers, as they are close to the eye. Above all, the glasses should not be tall or of such a shape as to be easily upset; 3 in. to 3½ in. is recommended as a good height.

Flowers in baskets offer opportunities of doing pretty things, but also temptations to go wrong in the way of tying cut flowers to handles, sometimes in a thick bedding of Moss. We advise that the handle should at most have a flowering spray wound lightly round or passed over, its cut end being in water with the other flowers.

In the late exhibition the decorations for side-boards were generally unsatisfactory, and no prize could be awarded. Some were even strangely grotesque, and, with an ingenuity of contrivance worthy of better work, showed a total absence of beauty or sense of decorative propriety.

In the case of a buffet for the display of ornamental gold and silver plate there is nothing better than a pair of well matched fine foliage plants or Ferns in gold or silver vases.

Hand bouquets were well represented, though the effect of some was rather spoilt by a stiff white paper frill. It should be remembered that the paper frill represents delicate lace, and the flat stiff kind should be avoided. Some of the bouquets were finished in excellent taste with a soft falling lace and well chosen satin ribbon.

The defects of overcrowding and of using too many kinds of plants were again conspicuous in the arrangement of plants in standing baskets.

We earnestly advise intending exhibitors to study this important principle of obtaining a distinct effect by simple means, assuring them that having once taken hold of the idea, they will find their work easier and simpler, and the result infinitely more beautiful and truly decorative.

**Bouquet Grasses.**—I have found the undermentioned sorts very useful for bouquet making late in summer, and in a dried state during autumn and winter. If sown say in February and pricked out, in very small bunches, into shallow boxes or a frame in very gentle warmth, and after gradually hardening off, planted out in good

free soil in May, they will develop their individual characteristics sooner than by sowing them where they are intended to stand. The inflorescence should be gathered, if for drying, a short time before the seed begins to form. If bleaching is desired, this can be easily performed by suspending the bunches in a close-fitting chest, and applying burning sulphur for a short time. The sorts to which I allude are *Aira pulchella*, *Anthoxanthum argenteum album*, *Briza maxima* (*gracilis*), *Bromus brizaeformis*, *Pennisetum longistylum*, *Stipa pennata*, and *S. elegantissima*.—SYLVESTRIS.

**Flowers on Housetops.**—Mrs. Soper, in her recently published account of the home life of the Japanese, says that the houses in the country are straw-thatched, and frequently have a novel arrangement for a flower garden on their summits. A trough is placed along the roof filled with soil, and planted with various flower seeds. The plentiful rains and genial suns of Japan cause these unique flower beds to bloom brilliantly in due season, and the effect of a whole village thus decorated is quite picturesque.

## GARDEN THOUGHTS.

THE longing which was evoked by Mr. Baker's 8000 Rose trees just breaking into their first vernal growth to see the Rose in her beauty was speedily gratified. The morning after I left Exeter, I saw box upon box of the lovely Niphotos which had been brought to Covent Garden by Mr. Philip Ladd, and later in the day a far more beautiful exposition of Rose trees in their integrity at one of the spring exhibitions of the Royal Horticultural Society, in the gardens at Kensington. I admired the magnificent *façades*, the porticoes, the portals, the vestibules of the royal building. I passed through those stately corridors, so profusely yet so exquisitely decorated, so costly and yet so chaste, so scrupulously clean, so bright and cheerful, that the most depressed spirit rises at the sight, and the startled foreigner, like Tennyson's lark, can scarce get out his notes for joy as he gazes on those triumphant achievements of Art, in which architecture, and painting, and sculpture seem to contend, like the three goddesses of old, for the meed of beauty. Nevertheless, it struck me as I entered the conservatory in which the show was held that there was a good deal to be said for Nature, and I had not been long among her productions before—biased no doubt by my country education, and blended it may be by the brilliant beauty of my favourite, the Rose—I came to the conclusion that on the whole I even preferred her to Art—I mean Nature in combination with those attentions and assistances which she herself suggests—*quas Natura sui sponte suggerit*, as we used to say in our Oxford logic, to the gardener, and of which Shake-



speare said, referring to horticulture, "the Art is Nature."

I have never seen so good a collection of standard Rose trees in pots as those which were shown on this occasion, April 26, by Messrs. Veitch, of Chelsea. The flowers were large, full, symmetrical, and bright in colour; the foliage was glossy and abundant. The trees were tastefully grouped, having a background of Japanese Maples and a foreground of charming Clematis, and the varieties were distinct and excellent, of equal merit throughout, one, perhaps, attracting special attention, a glorious bloom of the Tea-scented Rose, Jean Ducher, displaying its manifold tints intermixed in lovely confusion—a white saucer (I confidently submit this beautiful metaphor to the admirations of our æsthetic gushers) in which Strawberry, Lemon, and Pine-apple ices had been vigorously stirred with a spoon.

Grand specimens came, as a matter of course, from the old nurseries of Messrs. Paul & Son, but I was chiefly interested, as the readers of THE GARDEN will be, in the specimens of those newer varieties of which we amateurs mostly have only heard or read. The happy family to which I, Reynolds Hole, H.P., have the honour to belong, which has been formed at Cheshunt by our respected proprietor and showman, Mr. George Paul, and in which you may see the "Marquis of Salisbury" in close communication with Mr. "John Bright," and several members of our royal race on the most neighbourly terms with the "Sultan of Zanzibar" and (and I would take this opportunity of assuring the public that the performances of "Climbing Bessie Johnson" and "Climbing Mdlle. Eugénie Verdier," assisted by "Climbing Edouard Morren," are always of the most graceful and decorous character), this heterogeneous, but harmonious, group has received another brilliant addition in the "Duke of Teck," brilliant in colour, vivid crimson, large and well formed. "Probably the finest Rose we have yet raised," says the raiser; but the new baby is always the favourite.

Every year brings in some good new Roses indigenous as well as imported. Of recent introductions from our home nurseries I would recommend to my brother amateurs Harrison Weir, May Quennel, Charles Darwin, and Duchess of Bedford; and of foreigners, Catherine Soupert, Comtesse de Mortemart, Ferdinand Chaffolte, Gloire de Bourg-la-Reine, and Madame Julie Dymorier. The mention of Bourg-la-Reine reminds me of an international incident. An English rosarian, thinking that he should "astonish the Browns," and transcend his neighbours by procuring his Rose trees direct from France, having heard, but not accurately remembering, the address of Mons. Jules Margottin, and seeing in the catalogues a Rose named Belle de Bourg-la-Reine, directed his letter accordingly, and the jolly old Rose master was delighted one morning to find himself designated, in spite of his years and obesity, as Mons. Jules Margottin, Belle de Bourg-la-Reine, Paris.

Leaving these fair ladies and distinguished gentlemen recently admitted into the household of H.M. the Queen of Flowers, and retracing my steps through those halls of dazzling light which surround the gardens of the Royal Horticultural Society, I returned home. And who comes home so happily as he or she who loves a garden? Although the goings out of the gardener, when he has earned his holiday, are made bright and joyful by provisions of the new beauty, and anticipations of the genial welcome which

he is sure to find, yet does absence make the heart grow fonder of the beloved darlings he has left, and soon, like some fond mother separated from her children, he begins to vex himself with terrible misgivings as to the conduct and capacity of the under nurse. He has dreadful dreams. If his journey is in the winter, he has a vision of John, the foreman, skating with his sweetheart on the lake by moonlight, and the thermometer in the stove down to 30°, and all the inmates look like the sensitive plant just pressed by some large hot hand. If he is away in the summer, then is he dismally depressed by fears that his choice fruit is appropriated by the wasp, and his specimen plants by the mealy bug. Wherefore he rejoices like the mother aforesaid to find himself once more at the door of his nursery. And lo, the baby can walk, that is to say, the cutting is established on its own roots; Master 'Gustus' rash has disappeared under the cooling influence of magnesia, that is, a little mildew in the Rose house has succumbed to sulphur; and Miss Gwendoline, promoted from a short frock to a gown, has passed from childhood to girlhood, that is, some pretty, but straggling plant has been repotted, and tied, and trained—made admirable in both cases "for dinner table decoration."

'Mid pleasures and palaces though we may roam; abroad, beneath the stately Palm, where the Magnolia grows into a great timber tree, and a nightingale sings from out the glowing Camellias, and the fire-flies gleam in the Orange grove; or at home, through some of our famous nurseries (I was in one of them not many days ago, at Knaphill, covering more than 200 acres, where you may drive through long avenues of glorious Rhododendrons, here born and bred, white, pink, crimson, purple, multicoloured, or may stroll through large squares of lovely Azaleas, surrounded by their high evergreen walls, wherein Belgium and England—Louis Van Houtte and Anthony Waterer—contend for the mastery, or peep through vistas of the roseate Kalmia, or rest under those noble and rare trees which alone would repay a pilgrimage); or whether we have been conducted through miles of glass, where almost every plant, from a Cattlea to a Cucumber, has a tenement of its own, and the conservatory is big enough for a town hall, and the Mushroom house is like the crypt of a cathedral; aye, though we may have wandered (as I did wander in the month of April) amid "Belvoir's lordly terraces," and there seen the most beautiful spring garden which is to be found in this land of gardens, we come always home with happy memories, and not seldom with generous gifts, to love something which we have not seen elsewhere more tenderly than ever, and, profiting from our observations abroad, to make our dear little garden dearer still with new design and decoration.

In my next paper I propose to suggest a few specialities which ought, as I think, to have a place in every garden. S. R. H.

**English Names at Kew.** We are pleased to see that in many cases and among the newer labels the English name gets precedence at Kew Gardens. This is as it should be. We observe, however, some American trees have only the Latin name, while by reference to American authorities it would be found that they too have English names. In fact, as regards hardy trees and shrubs, any intelligent superintendent would have little difficulty in finding English names for everything. In such a garden as Kew this subject deserves the greatest attention, and we are glad to notice it well carried out in many cases, though in others

some of the commonest trees of our gardens and woods have only a long technical name.

## THE FLOWER GARDEN.

### NEW CLEMATISES.

FOR the purpose of planting out it may be a matter of taste or of surrounding circumstances whether the plants should be neatly trained or left to grow as they please. When they are planted against walls it is best to train the twisted Vines neatly and regularly to the wall, and then allow the loose flowering growths to hang naturally without allowing them to become too much entangled together. The Clematis is also well adapted for pot culture, and when well grown is a first-rate exhibition plant. For a number of years well grown specimens have been exhibited at the London and Manchester shows, but perhaps the grandest display ever seen anywhere was at the Regent's Park Botanic Gardens, on the 25th of May this year. The large bank of well-trained specimens arranged there by Messrs. Jackman, of Woking, was a sight never to be forgotten. Mr. Noble, of Bagshot, also exhibited a very meritorious group of smaller specimens, and Messrs. Smith, of Worcester, likewise showed a group of well-grown Clematises. Not only were the plants large and well furnished with blooms, but the size of the latter was also very remarkable. I measured one of the variety called Mrs. Moore in Messrs. Jackman's collection and found it to be 10½ in. across. Many blooms on other varieties were 8 in. across. In the different collections there was also a considerable number of noteworthy new varieties, and it is worthy of remark that those selected for first-class certificates were the kinds that come nearest to the recognised standard of the florists, viz., broad massive petals of great substance and rounded at the points. Narrow-pointed petals, whether in a Phlox, Cineraria, or Clematis, may be "artistic," but they are not appreciated by the public in cultivated flowers.

Mr. Noble exhibited the greatest number of distinct and good new varieties. The best of them were the following: William Ewart Gladstone, a sort with flowers nearly 9 in. across, of a bright lavender blue, petals broad and well formed; Lady Constance Kennedy, paper-white flowers of large size, and semi-double; George Eliot, violet-blue and good in shape; Pirate King, purplish blue, petals of good substance and well shaped; May Queen, pale purplish rose, flowers of good shape and freely produced; Aurora Leigh, white tinged with pink, and having broad well shaped petals; and Margaret Dunbar, blue, with a purplish tinge, a lovely combination. Others of Mr. Noble's flowers were Circe and Undine, double blue; Imogene, fine white; Countess Gleichen, bluish; Lord Gifford, pale-reddish purple; Mrs. Cholmondeley, large blue-purple.

The best of Messrs. Jackman's varieties, all of which were trained into large specimens, abundantly furnished with flowers, were lanuginosa candida, white, with a faint tinge of pink; Mrs. Kennet, blue, with a purple shade, flowers large; Mrs. Hope, violet-purple, and good in shape; Henry, white, flushed with pink; Princess of Wales, flowers large with broad petals, of a purplish lilac colour; and Madame Van Houtte, creamy white, with a pink flush.

In Messrs. Smith's collection the following were well worthy attention, viz., Gloire de St. Julien white with a pale purple tinge, flowers 9 in. across; Victoria, deep reddish-purple; Lord Neville, blue-purple, with large broad petals of good substance; Fairy Queen, white, centre of petals stained with red; Purpurea elegans, a very good variety, with flowers of a deep purplish tint; Marie Lefebvre, deep bluish petals, well shaped.

In the above list will be found all, or nearly all, the best varieties in cultivation. They are all of C. patens or C. lanuginosa type, and produce their flowers from the old wood early in the season, to be succeeded later on by varieties of the Jack-



manni type, which produce their flowers on the young growths of the same year.

J. DOUGLAS.

### CARNATIONS AND PICOTEEES.

If you grow Carnations for purposes of exhibition they will require special and careful treatment. The best time to get plants is in September or October. Let them be wintered in 3-in. pots singly in a cold frame plunged into Cocoa-nut fibre, giving as much air as possible. In April or May shift them into 7-in. pots and treat them carefully, as described in a recent number of THE GARDEN, until the flower-buds show, then the special treatment will begin. Carnations and Picotees are generally exhibited on cards, in stands of twelve or twenty-four blooms, dissimilar. Each stand measures 15½ in. by 12 in., and accommodates twelve blooms, and is fitted with little tubes for water, into which the stems are put. The blooms should be as nearly as possible the same size, but if there is any difference the largest should be at the back of the stand. They are also exhibited in pots, but this being a very cumbersome mode at present it is confined to one or two large growers. Only let your exhibition plants make two or three stems; cut off the others as soon as they attempt to rise. As soon as the buds appear pinch off all but the top or most promising one, only allowing from one to four blooms on each plant. Do not grow too few flowers on a plant if it is a free-blooming sort. If strong plants are forced into making one solitary flower, that one will be too coarse for anything. Disbud according to the constitution of the plant. You can tell with a little practice what buds to leave and what buds to pinch off on each individual plant. If the bud is full and obtuse at the top, presenting altogether an appearance of healthy obesity, the flower will probably be good, so leave that bud. If, on the other hand, a bud be long and pointed, it does not promise well for the ensuing bloom, which will probably be of poor substance, so that bud may be pinched off. As soon as the bud begins to swell watch carefully for any signs of splitting of the pod, in which case the sepals must be carefully divided at the segments, as before mentioned in THE GARDEN. Also carefully tie round the bud with a little band of bast about half way down the calyx, and finally slip over the whole a cardboard "collar" (such as are made for this purpose expressly by Mr. G. Meek, Crane Court, Fleet Street, E.C.). These collars are kept up to the bloom by a Carnation pin, which is slipped over the stem round the head, and stuck into the supporting stick. As soon as the petals have reached their largest size, the day before the exhibition, having carefully reversed the points of the calyx on the card, take hold of the six largest petals (which are the outer or guard petals), and, carefully pulling them out to their fullest extent with a pair of ivory dressing tweezers, arrange them in as perfect a circle as you can on the card, which will form a sort of background to the flower. The next six in size are then disposed over the first set, so as to form another and smaller layer, imbricated with or covering the joints of the first, and so on, tier after tier, rising one above the other, each smaller than the preceding one, till you come to the centre of the flower, which should not be crowded or confused, but just fill up the centre of the bloom, nicely finishing off the hemisphere. If the centre is too crowded, a few of the petals may be pulled out, being very careful not to damage the pistil or horns rising in the centre, which should fall gracefully down along both sides of the flower. Imperfect petals, which are called strap or finger petals, may be drawn out, but any other perfect petals substituted for them, or in any way added to the flower, would instantly and infallibly disqualify it in exhibition. The flower, when dressed, should be as nearly as possible a perfect circle of smooth-edged, imbricated petals. The flowers will be dressed again on the morning of the exhibition, and gently touched up at the exhibition itself, where they should be taken in

cases made to contain the stands, and transport them already mounted for show. During the time the plants are coming into bloom they must be carefully shaded from sun, and if they are going on too slowly to fall in with the date of the exhibition, they must be watered with some gentle stimulant frequently. Be careful to guard against vermin of all kinds. The inverted flower-pots on which the stages are stood should stand in saucers of water, or surrounded with and standing in lime. Devote the exhibition plants solely to exhibition; you may allow three or four shoots to spring from the base of the exhibition plant for layering if the variety is a strong-growing one. I prefer to grow one plant of a pair in one pot for layering and saving seed, and the other in another pot for exhibition. According to Mr. Dodwell, who is well known to the readers of THE GARDEN as a dresser of this, his special plant, the instruments required for dressing blooms, which are to be obtained from Mr. B. Simonite, Rough Bank, Sheffield, are as follows: (1) A pair of steel tweezers, roughed in the inner surface for reversing the points or sepals of the calyx. (2) A pair of smooth ivory tweezers for placing or dressing the petals. (3) A pair of fine-pointed scissors for removing deformed petals. (4) A camel's-hair brush for removing dust from the surface of the petals.

GIROFLE.

### DAFFODILS.

MR. BURBIDGE now says distinctly (p. 633) that there is but one form of the wild Daffodil, viz., that more or less, but always, bicolor, and that the "self yellow" form is a nonentity altogether; and this although I have stated that, to others besides myself, it has been shown that there are two forms. The proof must now be waited for until next spring, and no doubt your many readers will help to the solution of this interesting question by looking through the wild Daffodils as they bloom in the meadows where they abound; and if any will communicate the result of their investigations to me I shall feel obliged, and we shall thus arrive at the facts.

I had no wish or intention to misrepresent what Mr. Burbidge wrote, my object merely being, as in my first communication, to emphasise the word "bicolor," and in this I was not far wrong, because I hold there are two wild varieties. At any rate Mr. Burbidge's plate iii. is coloured wrong, as it clearly represents the wild form of Daffodil with both tube and perianth of the same colour, except the inside cresting of the tube, and as he does not say one word about the colour in his description of the plate, nobody would suppose for one moment that he held them, as he holds now, that the wild form is bicolor only. I also fail to see the use of Mr. Barr's sending information in 1874 as to the connecting links between the wild form and the cultivated bicolor if the typical flower was already bicolor. But if the wild form of Daffodil is thus only bicolor, what are the links which connect it with the self yellow series, which culminate in Emperor and the Tenby Daffodil? The difference is very marked, but only in colour. They evidently come from the wild Pseudo-Narcissus; and if Mr. Barr or any one else can give us the stages of this development, they will be very valuable. If Mr. Burbidge's plate had shown the wild Daffodil bicolor instead of self-coloured, I should have raised this point instead of the other, as I believe it is answered by the simple fact, which I think is already proved, that there is also a wild variety, self coloured, from which the deeper self yellow varieties are descended. The discussion has been an interesting one, and I hope it will be continued next spring, when we can all refer to the living Daffodils for the true facts.

Brockhurst, Didsbury. WM. BROCKBANK.

**Lilium pulchellum.**—Two forms of this pretty Lily, which at one time used to be somewhat needlessly confused with *L. tenuifolium*, are now before us, one a much darker red orange than the other. This plant is rather easily grown, and being early and distinct will, we hope, take

a prominent place in our gardens. The New Plant Company grow it well, and send us these specimens.

### CAMPANULAS.

THE summer Campanulas are now in their glory, and very beautiful they are. As we have a good many varieties, some of them rare, a few notes may perhaps interest your readers.

*Campanula barbata* is not in our florists' catalogues, so I suppose is not common. Our plants came from Switzerland. It is a most beautiful Campanula, and ought to be widely cultivated. It has a rosette of long lanceolate leaves, from which rise numerous flower-stalks about 1 ft. high, each bearing about 1 doz. pale blue bell flowers, resembling our English *C. rotundifolia*. The stalks, however, are much more sturdy, and the plant has altogether a much more symmetrical appearance, the flowers being regularly disposed and stiffly carried. It seems likely to continue a long time in bloom. *C. alpina*.—This quaint little plant, which came into flower some three months ago, has continued to bloom ever since; it is but 4 in. or 5 in. high, and is now covered with seed capsules resembling those of the *Auricula*. It has 24 such seed capsules already, some nearly ripe, and there are two fresh blue flowers open to-day. *C. pusilla*, also from Switzerland, is a larger plant every way than *C. pumila*, which it resembles. Its blue bells are as large as *C. rotundifolia*, but the flower-stalks are much shorter, the tallest being but 6 in. high. The bell flowers therefore look very large for so small a plant. This is a very lovely Campanula. *C. pusilla alba* has much smaller flowers, of the palest blue, almost white, and is exceedingly floriferous. The stalks are but 3 in. high, so that a mass of it is like a white cushion. *C. turbinata* is dwarfier still, with deep purple bells, carried erectly, and quite 2 in. across. There is a pale blue form, very nearly white, called *C. turbinata alba*. I see very little difference between *C. turbinata* and *C. Raineri*. They flower together, and I believe are the same plant. *C. carpatica* is very similar, but much smaller in its flowers. On the rockery it completely covers the stones and forms a mass of colour. Of *C. persicifolia alba* there are many varieties, and the most beautiful I have seen was sent me from Cambridge by the late Wm. Hull, the artist, who said it abounded in the gardens there. It has a slightly blue tinge of colour in its white, but the flowers are of exquisite shape and more beautiful altogether than the more common form. The Cambridge Campanula deserves a distinctive name. The double varieties, white and blue, of this Campanula are very beautiful, and there is a third form, *C. coronata alba*, which is also very pretty and quaint. At this season of the year, when white flowers are scarce, one cannot have too much of *C. persicifolia alba* in the borders, and we cultivate it largely in consequence. *C. macrantha* is a giant, but still it is welcome in the trimmest borders because of its orderly habits. It grows with us 7 ft. high, and its general form and handsome leafage are ornamental. Its flowers are of the deepest purple, stiffly carried, so that it forms a grand object when a good mass of it is in bloom. *C. grandis* is to be avoided except in the wild garden, for it cannot be kept in bounds, and although handsome both in its purple and white varieties and useful for cutting, it spoils any herbaceous border. Its great use is to fill up odd corners where it can spread as it likes. The same remarks apply also to our native Campanula, *C. Rapuncululus*, and *C. glomerata*; both are beautiful and well worth growing if a proper corner can be found for them, but they are unsuited to the flower beds or borders. Lastly, *C. pulla*, with its deep purple bells, of lovely form, carried on slender stalks is amongst our loveliest.

Didsbury.

BROCKHURST.

**Spiraea trifoliata.**—In "Notes from Dublin," by "F. W. B.," enquiry is made about this plant. It is a North American species, but, like



the *Spirea (Itoia) japonica*, it is not a *Spirea* at all, but a *Collina*, a plant belonging to an allied genus. It is a very desirable plant, and one not at all common. There are two varieties of the type, and a variety major. If "F. W. B." will send me a bit of it I will tell him which of the two he possesses. The yellow "distinct and rare plant" is *Plagius grandiflorus*, a cousin of the Pansy, striking and attractive for its singularity, but more singular than beautiful. I have grown the plant for years, but have lost it. It is one of those plants that seem hanging in the balance between being a perennial and annual. — T. WILLIAMS, *Bath*.

**The St. Bernard's Lily** (*Anthericum Liliifolium*). This, though not quite so handsome a plant as the St. Bruno's Lily, is worth a place, its long and graceful spikes of white flowers coming in well in a border, and succeeding the larger and fewer-flowered *A. Liliastrium*.

**Flame Nasturtium among Bamboos.** — Mr. Woodall tells us of a successful plantation he has made of *Tropaeolum speciosum* in a group of Bamboos. It requires little effort to imagine how graceful the combination will prove, as the brilliant shoots wander among the hardy Bamboo shoots. When gardeners make pictures for which they possess materials, the art will earn full recognition from the educated public.

**The Dropwort** (*Spirea Filipendula*). One of the prettiest plants in our mixed borders at present is this beautiful *Spirea*, which is well worth growing for its leaves alone, as they form tufts equal to those of many Ferns, and when the plants are covered with blossoms they are very effective; they are readily increased by division, and grow well in any ordinary garden soil. — J. G. L.

**Single Pyrethrums.** — I quite agree with your editorial remark that the single varieties of *Pyrethrum roseum* are far to be preferred to the double. A desideratum, however, for which I have long been searching is a pure white single variety. It is true that the Ox-eye Daisy and the large-flowered Paris Daisy are not bad substitutes, but we miss the flat disk and the double row of outer rays of *Pyrethrum roseum*. — C. W. DOD, *Edge Hall*.

**Hybrid Columbines.** — I send you a few blooms of Columbines, hybrids between *A. chrysanth* and a small double blue. I think they are interesting, and an advance on *Aquilegia chrysanth* hybrida. How the pink came in I cannot imagine, as the plant of *A. chrysanth* (female) was in a house protected from bees, and the hybridisation was carefully carried out. I think some pink pollen must have been on the bloom gathered for the purpose of hybridising. — A. RAWSON. [We have seen quite enough of hybrid Columbines, and would if we could send the hybridisers with a sack each to a separate mountain range to collect seed of the beautiful species for our gardens. It would be worth while to import seed yearly from the native localities of the flower.]

**The Edelweiss in Flower.** — I observed a letter from a correspondent of THE GARDEN a week or two ago informing you that on two plants of the Edelweiss he had eight flowers. I am not aware that it is in any way unusual, but I have now eight flowers on one plant of Edelweiss. It has survived two winters in the open air here — on the site of one of the stations (the third) on the old Roman wall — on an exposed rockery quite 300 ft. above the sea level. After the melting of last year's snow, there was no trace of the Edelweiss, and I thought I had seen the last of it. However, as spring advanced the plant appeared, and is now in vigorous health. I raised it from seed obtained from Mr. Thompson, of Ipswich. — JOHN P. MURPHY, *Bowdell, Newcastle-on-Tyne*.

**Single Dahlias v. Pyrethrums.** — "Peregrine" says the latter are going to be the rivals of the former. Well, I do not think so; they do not run in the same race to begin with, blooming at widely different times or seasons. There is room enough for both in our gardens, and, of course,

tastes vary almost as widely as our plants. Pyrethrums, especially some of the single ones, are also very beautiful, but they are hardly to be pitted against single Dahlias, nor to be compared with them for rich, dazzling, decorative effects. The single Dahlia, with its semi-free style of growth, continuous flowering, and marvellous profusion of blooms of almost endless variety of colour and size, and considerable variation of form, is one of the most attractive, and will probably become the most popular of all our summer garden plants. Forcutting in long branchlets of leaves and flowers there are few plants more useful for large vases, &c., in rooms and corridors, whilst its staying powers are so great that it may remain in any position till you weary of it, by merely attending to the replenishing with water of the vases, baskets, &c., in which it is placed. — D. T. F.

**Honesty in the Wild Garden.** — One of the most effective hardy plants for the wild garden is the old Honesty. It is capable of being used with good effect in the wild garden, or in the half-dressed portions of pleasure grounds. Its robust character, floriferous habit, and the ease with which it may be established even in positions generally unfavourable to flowering plants, commend it to the notice of those who have a large extent of pleasure grounds to embellish, and who would wish to see them bright and cheerful during the early months of the year. The Honesty is such an old-fashioned plant that few growers think it worthy of any great cultural care, and the condition in which one generally sees it in gardens fails to convey any adequate idea of its beauty and decorative value. As commonly used, dotted here and there in the form of isolated specimens in the open border, its true worth is not perceptible. When, however, massed and in close association with other forms of vegetation it is capable of producing brilliant effects. One of the prettiest floral pictures that I have witnessed this season was produced by large groups of the Honesty, so planted that the flower beds rose boldly from amongst vegetation of minor growth, whilst a background of sombre-hued evergreens served to show up the rich mass of colour to the best advantage. There are many such positions in gardens where a similar use might be made of this plant. In order to establish it in the wild garden all that is necessary is to prepare the soil for its reception in the usual manner, dibble in the plants as soon as they have come to the rough leaf, and keep them free during the summer from rank weeds, or from being too much encroached upon by other plants. The Honesty makes a thick fleshy root, going down at once deeply into the soil; it therefore thrives in many places where few plants would give good results. A little care, however, in its earlier stages of growth is amply repaid by increased luxuriance and finer heads of bloom. Planted in masses in the fringe of woods, margins of shrubberies, and such like places, the Honesty produces an effect scarcely equalled by any spring-blooming plant. As before stated, its proper place appears to be in close association with taller-growing subjects, and its true worth is only perceived when a number of healthy vigorous specimens are grouped together. — J. C.

**English Names — a Suggestion.** — What a numerous and interesting collection of plants was that (p. 643) observed on a brief June evening at Mr. Parker's Nursery, Tooting! and all luckily having more or less well-known English names! Who that has thought over the matter but must have felt for the young man of ordinary intelligence, commencing his gardening career, trying to spell out and then to remember what has been appropriately termed (p. 642) as those long-drawn-out, "jaw-breaking" names, and what Goldsmith, the poet, would have likely called "words of learned, lengthy, and thundering sound!" I know botanical and private collections where only the long botanical names are given, both in England and Ireland, and would suggest that the English name alone or at least both should be on every

label — not, however, in my own interest. — W. J. M., *Clonmel*.

**A Garden of One Orchid.** — Fifty well grown plants of *Odontoglossum vexillarium*, embracing several different forms, now make a charming show in Mr. Peacock's garden at Sudbury House.

## THE ROSE GARDEN.

### ROSE ELECTIONS.

SOME of the horticultural journals occupy themselves much about what they call Rose elections, in which everybody puts down what he considers to be the best Rose from all points of view. They simply lead to the enumeration, in most cases, of a few Roses that we already admire — such as *La France* and *Maréchal Niel*. In other words, much trouble is taken to let us know what we knew already. We trust these lists or selections will have little influence in limiting our appreciation of the Rose — a beautiful plant in every shape and variety, and the true way to look at it is to have Roses for every taste, every position, every climate, and, if possible, every garden. What is the good of all hybridising and crossing, and years of care, if it only lets us know a set of half-a-dozen or a dozen varieties, which everybody has and knows already? The Rose is of infinite beauty and shape, and variety of colour, but not if we limit it to the few varieties which everybody declares to be the "very best." There are beautiful old Roses, which have charms quite as high as those which have succeeded them — at least for some of us. There are Roses still obtainable with souvenirs of 200 or 300 years ago. In Roses, as in other things, what one hardly ever sees carried out would be the right thing — that is to say, to adopt the variety to the position, instead of everybody growing *La France* and *Maréchal Niel*, and Roses equally popular, whether they did well or not in the position or climate. Some mild districts would favour a different type of Rose from what cold and dry ones would. Then there are the tastes of the owner to be consulted, who may, very properly, like to see other Roses in his garden besides what he sees everywhere else, and it might be well not to admit our visitors in considering such matters, because it would surely gratify all of us more to see Roses we were not accustomed to than everywhere the same elected of universal suffrage. Fortune's Yellow is not supposed to be a first-rate Rose, at least we do not suppose it would come into the very select election returns of these writers; but it is a lovely Rose withal, and one of the most pleasant surprises we have had for some time was from a large plant of it wreathing one of the pillars in the kitchen garden at Blenheim, sending down a shower of buds and flowers. So, again, there are many Roses of twenty or thirty years ago which in the chase after novelties have dropped into the background, and which in many cases have the highest merit and beauty; in fact, it would be interesting to make a Rose garden without the chosen, and probably a fairer Rose garden could be made of it than of all the full-blown accepted of the people. Then we have the different families of Roses, which some may prefer to study, and a very good thing it would be if each lover of Roses would extend his favours to one particular Rose family or group, and study and grow them to a larger extent than others. How of the lovely wild Roses that never enter into these selections at all, and of the single Roses, which have all been thrown away in the race after double ones? The day will soon come when people will appreciate a fine hybrid single Rose, just as they have



lately learned to appreciate the single Dahlias, which are many of them really handsomer than the double ones, but, according to the now forgotten rules of the florist, were a year or two ago the only ones ever seen. V.

### SHOW ROSES.

I AM pleased to see this Rose question discussed. I am quite on your side, and against the dear Canon; his is too much of the "florist's" view. If you are going on with the amicable fight he seems to put a stick in your hand to beat him with in his illustration about horses. Anyone will allow that a thoroughbred racehorse is the best horse that can be bred, only he is not beautiful, or only beautiful from a trainer's point of view. No artist would paint him if he could help it; he would rather paint a cart-horse or a rough moor pony. The thoroughbred is a regular "florist's flower," and, like a florist's Auricula or Dahlia, beautiful only if agreeing to certain rules laid down, but not beautiful for beauty's sake. I allow that the Rose question is complicated by the fact that a florist's Rose is a beautiful thing; so is a florist's Carnation; but it seems to me that we should look for beauty in the whole plant, not in single flowers only. I have a climbing Rose that for pure beauty, as I understand it, could hardly be beaten. The flowers are a fairly good size, and not too full, the palest blush, deepening to a delicate mushroom pink, and thornless, smooth, red stems—an old arbour Rose; I do not know its name. It has a way of shooting its long red rods up through trees and bushes, and throwing out great swinging arches of lovely flowers, and even when the petals come shattering down, and make pink pools on the path below, there is still a sense of picturesque propriety; whereas the fallen petals of standard Roses look littery and untidy, and one is glad to have them swept away. Even as cut flowers I could arrange a bowl of these or of Moss Roses, or even of Sweet Brier, that would show as much real beauty as an arrangement of prize Roses. That reminds me that I never knew the true beauty of Carnations till I saw them as they are commonly grown in Italy—as window plants left to tumble down over the front of a marble balcony, showing their true habit and graceful growth. Our poor things, tied up to sticks, have not a chance of showing what they might do, and yet, as we grow them in beds, they must be tied up. I am for making a bit of steep rock wall on purpose for Carnations, and I expect they would be longer lived.

Munstead.

G. JEKYLL.

### ROSES FOR EXHIBITION.

THE late bright weather has opened the flowers almost too rapidly. So much has this been the case, that of some Roses we have hardly been able to say, They are here, before they are gone. There have been, there are, many fine flowers, but, on the whole, the form and substance have not equalled those of last year, and then they were hardly up to the average. A great many blooms have also been undersized. The size of the ragged regiment has also produced a feeling akin to dismay. Can it be possible that the frost, not content with killing so many Rose plants outright and crippling more, has also stung the buds through so cruelly as to mar the symmetry and spoil the form of many of the coming flowers in embryo. It really seems like it. The faults in our strata are as nothing to the faults among our Roses. Not a few parts of petals seem undeveloped or wanting. These are quite distinct from those consumed by creeping maggots or wriggling caterpillars. They have

come so out of bud, and the fault in many of the flowers cannot be laid to the charge of that most virulent and cunning of all the Rosarian's enemies, "the worm in the bud." Exhibitors from this and other causes have had a most anxious time of it. Winds are no doubt good and beneficent, sanitary and saving in their general effects and results; but on the eve of a show they are simply maddening. A breeze of an hour's duration arising suddenly in the night while we sleep dashes to the ground the hopes of a year's labour and anxious toil. And the winds will often blow just on the eve or day of the greatest event of the year. And the sun was never so fierce and full of scorching glare as just on those few days when shade was needed to intense and fix the colour of our Roses. Protecting caps are all very well, but Roses that have been long capped are apt to prove frail and capricious afterwards, and to fall to pieces, even at critical times, should a rift in the tent expose them for a few minutes to the mid-day sun's broad glare. So that, on the whole, perhaps, the less capping of the flowers the better. The Black Roses, however, must have shade, or burn. There is no alternative. They absorb so much heat that they become red—no, black hot, and simply undergo slow combustion and complete destruction. More singular still, some of the more delicate light Roses will not bear the sun. Possibly all show Roses would be benefited in bright weather if shaded for a few hours on either side of noon, and yet it is somewhat singular that those furnished with appliances for this purpose by no means take all the first honours. Nevertheless, we never see such Roses as when Nature shades the flowers with a screen of clouds for a few days preceding a show.

Having secured the best flowers, the difficulties of Rose showing and conveyancing may be said only to have begun. Those who know little and care less about Rose showing are mostly loud in their condemnation of the stiffness and ugliness of the boxes in which the flowers are arranged. If these can be improved without distracting the eye or disturbing the judgment of the jurors, well and good. But those who make such complaints only show how little they really love or care for Roses. The real rosarian sees nothing but the flowers; all the accessories are trifles light as air to him. And though anything approaching to slovenliness or carelessness is to be condemned in regard to either boxes, cushioning, &c., yet it is nevertheless true that not a few of the most dilapidated, weather-beaten stands, very imperfectly mossed, &c., take the first prizes. Depend upon it the jurors will find the best flowers, be they where or how they may, and will give them their deserts. Those who can see at a glance the perfect points of Roses see nothing else. The Roses by their overmastering beauty absorb their senses, steal their sight, enchain, enrapture, confirm their judgment.

What form, substance, colour, size, sweetness, contrast may be seen in a perfect stand of Roses, and what an amount of thought, work, energy, perseverance, love, genius it represents. Thus a Rose show embodies—incarnises, as it were—many of the noblest physical qualities, mental powers, and moral characteristics of the exhibitors. It is not simply a concentration of sweetness, a display of beauty, but also to a great extent a measure and a test of men. The qualities that win success at Rose shows are exactly those that command it in any ordinary and every extraordinary sphere of life. Give exhibitors of Roses something like a fair start, that is, an equality of conditions and of material, and it will be found that he who puts the most thought, the best work,

and the strongest love into his flowers, will win all the chief prizes. It may be going too far to say, as is often said, that the best men will win, but assuredly the best Roses will, and he who grows these will probably also be the better man.

One of the greatest difficulties in Rose showing is to muster sufficient perfect flowers at a given time. Something may be done by semi-forcing and retarding to increase the number of our marshalled hosts on a given day. But Roses are bad keepers; hardly are some of them cut till they open their eyes as if to see what was the matter, and an open eye or one about to open is fatal. But the chief difficulty is with their colour; that, though so deep and dense, is fugitive to a fault as soon as the Rose is cut. It is possible to keep their eyes closed, their form perfect, their substance intact; but hardly have the Rose stems touched the water than the colour of the Rose begins to dissolve or to be dissipated into the air. Now a Rose that has lost its colour has also lost its character. It is as true of a Rose as of a horse—that a good flower cannot be of a bad colour; and jurors reckon all colours bad that are not true to character. They may be extremely beautiful, but then they are not themselves, and therefore are nigh to rejection. Roses, like virtues, should be above suspicion, and need no explanation. When the latter is needed the stand may be said to be already doomed, just as a man who is always explaining his words or actions has a blot or a blemish somewhere in his character. Each bloom should not only be strong enough to stand alone, but be able to lend support to its immediate neighbours, and to strengthen every bloom in the stand. It is difficult to explain in detail how this is done, but each exhibitor has to solve the difficult problem for himself in his own way. And the ways of arranging Roses so as to win honours seem almost innumerable; cutting, carrying, and setting up demand and receive the utmost attention. Rosarians never excite our sympathy and admiration so thoroughly as when finally disposing of their forces at the last moment before the final tug of war and test of merit in the presence of the jurors. Every power and faculty is in lively exercise to place each Rose to the most advantage. My own impression is that these last touches are often overdone. The violent exertion and incessant changes indulged in by some of the largest exhibitors can hardly be favourable to the exercise of a sound judgment and cultured or correct taste; neither is a sort of St. Vitis Dance, from place to place, or box to box, the most favourable exercise to preserve the freshness or sustain the stability of the Roses. The practice of making so many changes at the last minute also frequently leads to the accidental transference of names even by those that know Roses best.

Wise jurors can generally tell whether or not such changes are accidental or designed. Where it is obvious that a mistake has occurred, I have always advocated its correction, but, of course, a fraudulent application of a name merits disqualification. But most of such mistakes would be avoided were the Roses arranged carefully at first, and few or no changes made afterwards.

The lids should be kept on the boxes till the last minute, then a last look taken, and generally that look will confirm your hopes of victory, or tell you you are beaten. Thus fore-armed, you will be able to bear victory more modestly and defeat with more equanimity than if you had neither the knowledge nor the fairness to judge your own and others' Roses righteously. Either way, having done our best, let us rejoice in the beauty and perfection of the Roses, have a word of hearty praise for



the victors, and one of kindly sympathy for the vanquished, and thus, whether we win or lose, Rose showing will bring us pleasure and profit.

D. T. FISH.

**A Floriferous Marechal Niel.**—In an unheated span-roofed house, 28 ft. long by 14 ft. wide, we have a Marechal Niel which has been planted eight or nine years. The house was at first planted with eight or ten different varieties of Roses; but we have gradually reduced the number to the one Marechal Niel. Its roots are inside, and the following figures will show how well it has flowered. In 1879 we gathered 1500 blooms from it, in 1880, 1800, and this year we have 2600 blooms, and at the same time it promises well for next year, the growth being free and vigorous. I attribute our success to cool treatment and plenty of water when growing, with unbounded root room and careful pruning, merely cutting out where too thick. We annually, about the end of February, thin out and tie all shoots, large and small, in a regular way to the trellis; at the same time we give a top dressing of pig manure. The circumference of the stem is 8½ in., two of the leading branches 6½ in. and 6 in., other two 5½ in. and 5 in.—J. W. BAYNE, *Kingston Gardens, Derby.*

**Scarcity of Roses.**—Mr. Fish (p. 623) asks whether this is local or general. I am inclined to reply local, although, doubtless, there are many places where the severity of the past winter has left its mark on the bushes, and it will take them this year to make wood, and possibly in some cases a good late blooming season may follow where sorts that are really perpetual in something more than name are employed. I find that our beds of crimson Chinas, that were much cut by the frost, are already sending up healthy young shoots that are full of flower-buds, and that will doubtless flower well during the rest of the season. As to bloom on last year's wood, I never remember having a more abundant or finer show than we have at present. Our plants are all dwarfs, and nearly all on their own roots, a system that promises to surpass all others, and they are a complete mass of flowers and buds. We prune rather hard, cutting out all the old worn-out wood and weakly growths of last year, and shortening the shoots that are left more than one-half. We give the beds a good dressing of rotten manure in spring before growth commences or directly after pruning, just loosening the surface with a steel fork, for the richer and better the soil the better the quantity and quality of the Roses. We have some beds that were replanted two years since in newly-broken-up turf, and although they were old hard stumps rejected in forming a Rosery, yet by planting deeply they took quite a fresh lease of life, having formed roots right up the stem, and are now in robust health. I, therefore, look on the quality of the soil in which they are planted as being more important than the question of young and old plants, for with dwarfs that are constantly being refurnished from the base there is no necessity for old worn-out wood in that quarter, as there are no suckers to worry one when Roses are on their own roots.—J. GROOM, *Linton.*

**A Book About Roses.**—The *Guardian* of May 25 writes: "We gladly welcome the seventh edition of Mr. Reynolds Hole's charming 'Book about Roses' (Blackwood & Son). All good gardeners are aware that it contains the very poetry and romance of Rose-growing, and is well worth reading for the many good things and sensible remarks in it, even by those who have little personal acquaintance with the queen of flowers. There is something truly poetical in the simple enthusiasm of the opening sentence—'He who would have beautiful Roses in his garden must have beautiful Roses in his heart;' while the account of the mechanic's Rose show at Nottingham, with the winner's testimony to the secret of his own success—'I'll tell you,' he said, 'how I managed to buy

'em—by keeping away from the beerhouse,' cannot be read without deep interest by all who care for the elevation of the labouring classes. Mr. Hole announces in his preface that, 'in grateful appreciation of the sympathies' of his numerous readers, he has added the names of thirty new and beautiful Roses to his list. Possibly it might have been better if he had given some plain and intelligible rules for budding, instead of referring his readers to other writers on the art. Few readers can afford to have a library of books about Roses, and most would like to have all that is necessary to be learnt in a book of this kind. And besides, a word of caution may be useful to any who are inclined to be seduced by Mr. Hole's enthusiasm into a large order to the nursery gardener. New sorts should be attempted with much caution by those whose purses or whose space is limited. They are (this is the fruit of much experience and some disappointment) very apt to be a delusion and a snare." The kindly reviewer has not noticed that Canon Hole purposely omits verbal instructions as to budding, advising the novice to learn the art by watching the process (by far the surest and quickest education); and he does not seem aware that the thirty Roses added to the select list have been chosen from many hundreds of "new Roses," and have proved their excellence in the garden and at the show.—ONE WHO READS THE *Guardian* AND THE *Garden*.

## THE FRUIT GARDEN.

### PLANTING OUT FORCED STRAWBERRY PLANTS.

THE season for indoor Strawberries being now over, the old plants may be turned to good account by planting them out, for they will produce a much larger quantity of fruit than young plants from runners of this year's growth, however well they may be treated. Although young plants produce the finest fruits, and are therefore valuable for exhibition or other special purposes, the ordinary daily demand for dessert fruit, or for preserving, is what most people have to consider; and in order to supply fair-sized fruit in quantity, there is no plan which I have yet tried equal to planting several large beds annually of Strawberry plants that have been forced in pots, and doing away with an equal quantity of old beds. We generally fruit the plants three times, viz., one year in pots, and two years out-of-doors. Directly after the crop is gathered for the last year, the old crowns are cut off with a sharp spade, and winter Greens or Broccoli are put into the land, so that there is no loss of time. And in planting out an equally rapid rotation is followed, for we generally plant our main crops on open quarters, as they are cleared of early Potatoes or Peas. At this time of year there should not be much uncropped land in a garden; and in order to keep the plants in good health until they can be planted out they must be as regularly watered as when bearing a crop, for drought is fatal to the Strawberry in all stages of growth. Red spider follows drought, and the plants are severely checked in consequence. Where the autumn fruiting of forced Strawberries is practised, they will either have been planted out some time since, or else specially treated to induce late flowering by generous treatment, and keeping all runners picked off as they appear. The latter greatly weaken the parent plants and are seldom so good for providing healthy runners for forcing as those produced on young plantations of the previous year's planting.

If the land has been well manured for previous crops, it need not have fresh manure put into it at the time of planting, as a good dressing applied in autumn will be more beneficial, and if left on the surface will work in gradually, and help to screen the crowns from frost. In planting, we usually dig the ground, and plant as we proceed, having the rows 3 ft. apart, and the plants 2 ft. asunder in the row. The ball of roots is well moistened before planting; and, after picking out

the crows, the roots are carefully loosened round the edge of the ball, and, when planted, the soil is trodden quite firmly up to them, and they are well watered in. After that little attention is required if the weather is moist and showery beyond stirring the surface and keeping off runners; but if drought follows, they must be well watered until they get established, when they may be treated as other established beds—i.e., half-rotten manure is spread all over the surface at the commencement of winter, and is pointed in in spring just as growth commences; and when the flower-spikes appear, a good thick mulch of stable litter is placed between the rows. That keeps the roots cool and moist, and the fruit clean and dry.

After trying most of the sorts in cultivation, we still rely on Keen's Seedling, Vicomtesse Héricart de Thury, and La Grosse Sucrée for the earliest both indoors and in the open air; and for main crops, President, Sir C. Napier, James Veitch, and British Queen. By planting for the earliest crop on sheltered borders sloping to the south, and for main crops on open quarters, and for the latest on the coolest north aspect, we contrive to get a regular supply for about half the year; for although Strawberries may be produced nearly every month in the year, we cannot rely on a sufficient quantity to class them with fruits available for dessert all the year round, but by adopting the above practice, anyone who can get a supply of forced plants now may rely on a full crop twelve months hence. *Linton.* J. G.

**Open-air Grape Vines.**—So opposite are opinions as to the ripening of Grapes on open walls that one is forced to conclude that the successful ones treat their Vines well and the unsuccessful ones badly. The seasons being alike for all, I would advise any one having a neglected Vine to try at once the experiment of careful stopping and thinning of both shoots and bunches, for I know many instances where barren Vines have been converted into prolific and remunerative ones by such means alone.—J. G.

**The Red Astrachan.**—Of the 321 varieties of the Apple catalogued in the American Pomological Society's latest report, Red Astrachan is found to have the widest adaptation, being starred in no less than thirty-seven States as recommended for cultivation, and in twenty-six of these it is double starred, to show its superiority. Ranking next in order of general favour over a wide extent of country are Early Harvest and Maiden's Blush, these being voted for in thirty-five and thirty-two States respectively.

**Setting of Peaches and Pears Before Opening.**—Mr. Wysor, Virginia contributor of the *Rural New Yorker*, writes as follows in a letter to one of the editors: I have examined the flowers of Peaches, Pears, and Apples. In the case of Peaches, I have pretty well satisfied myself that fertilisation in nearly all places takes place before the flowers expand. With Pears, I found two trees in which it occurred after the flowers expanded, and one in which it did so before. I noted that the tree which was fertilised before the flowers expanded set fully twice as much fruit as the other two. The same remark applies to Apples as to Pears.

**Morello Cherries as Bushes.**—If there is any one fruit that has continued to yield good crops in the face of adverse seasons, it is the Morello Cherry; and not only as a wall tree, but as an open bush or pyramid, which is no small boon for those who have no wall space at disposal. I find this Cherry so superior when worked on the Mahaleb stock that I would strongly urge all who grow it in the form of dwarf bushes to be particular as to the stock on which their trees are worked; they may then grow abundance of Morello Cherries on trees not larger than Currant bushes; in fact, we have planted them 6 ft. apart, and by pinching the strongest shoots in summer they may be kept quite small bushes, easily netted over, in the manner in which Gooseberry bushes are netted to keep the birds from attacking the



fruit. I believe that Cherries are more impatient of the knife than any other fruit grown, but by carefully pinching all the strong shoots in summer, very little pruning will be necessary in winter beyond cutting out dead or weakly pieces, or shortening back any long shoots that are getting bare. Although the Morello is but little relished as a dessert fruit in a fresh state, there is no variety for which a greater demand exists as a culinary or preserving fruit, and as a dessert fruit when preserved in brandy it is without a rival, the thick flesh and small stone placing it far ahead of all other sorts for that purpose.—J. G.

**Popular American Pears.**—The recently published catalogue of the American Pomological Society gives a favourable report of the Bartlett (Williams) in thirty-seven States, in twenty-five of which the double stars attached to its name indicate its great superiority and value. Next in general value is the Seckel, of which a favourable report is given in thirty-five States, twenty-one of which are marked with double stars. Duchesse d'Angoulême is nearly as high, being reported from thirty-three States, from which there are twenty-three double stars. Beurré d'Anjou has nineteen double stars in thirty-three States in which it is recommended. Next after these four great leading sorts is Flemish Beauty, with 16 double stars in 31 States; Lawrence, with 14 double stars in 32; Howell, with 14 in 29; Belle Lucrative, with 11 in 28; Doyenné d'Été, 9 in 32; Winter Nelis, 8 in 28; Sheldon, 8 in 25; Giffard, 5 in 27; Boussock, 6 in 26; Clairgeau, 6 in 23; Vicar of Winkfield, 5 in 24; Beurré Bosc, 3 in 24. It is an interesting fact that fruit culture has made such general progress that these 16 varieties have already been sufficiently cultivated in from one-half to three-fourths of the States and Territories (except a few west of the Rocky Mountains), as to bear recommending in each for general cultivation, and there are a still larger number of additional sorts that are recommended in from ten to twenty States.—*Country Gentleman*.

**Syringing Vines.**—I think "Peregrine" (p. 627) is not quite correct in asserting that insects attack the undersides of the leaves only; on the contrary, the upper surface of Vine leaves is frequently found to be seriously infested by the brown scale, as well as not infrequently encrusted with accumulations of dust, which must necessarily impede their functions, and affect, in a more or less degree, their health. The real reason why gardeners syringe the undersides of the leaves only is simply because, owing to the construction of the houses in which the Grape Vine is usually grown, the upper surface cannot be reached. All gardeners know well enough that nearly all plants in a natural condition, *i.e.*, growing in the open air, and including, of course, the Grape Vine, have the upper surface of their leaves frequently wetted, while the under surface remains comparatively dry. It cannot, I believe, be disputed that there are many successful cultivators who never syringe their Vines at all; but, on the other hand, it cannot be denied that the practice of syringing, with the view of securing cleanliness, is a healthy and in most cases a necessary operation. And if Vineries were so constructed as to admit of the Vines being trained at a greater distance from the glass, with roofs constructed so as to admit of the upper surface of the leaves being reached by the syringe, the majority of cultivators would be far from being slow in availing themselves of the opportunity of well washing both sides of the leaves whenever it was considered necessary or desirable to do so.—P. GRIEVE.

**New Strawberry.**—The *Bulletin d'Arboriculture* speaks in glowing terms of a new early Strawberry, raised and grown largely by a Belgian cultivator. If what is said of this Strawberry be correct, we have a striking instance of what selection alone will do in the matter of gaining useful kinds of fruits or flowers. It appears that the grower in question, who forces annually some thousands of the variety Comte de Paris, remarked

that amongst them there were always some that came much earlier into bloom than the others, and it struck him that by taking his stock from these plants only he might eventually succeed in securing a variety that would come into flower at a very early period. The idea was carried out, the result being a sub-variety, which, whilst retaining the general good qualities of Comte de Paris, excels that variety, not only in earliness, but also, it is asserted, in flavour. It has been named Marie Henriette, and will shortly be distributed. The fact of a new and valuable variety of Strawberry being obtained by means of selection is interesting, and causes one to ask whether many of our fruits might not be improved in the same manner. If selection can influence to so great an extent the earliness of any one variety, we should be enabled by the same means to develop any one particular character or suppress an objectionable trait. It appears to be simply a question of time, patience, and perseverance.—J. CORNHILL.

## EDITOR'S TABLE.

**The Sorb-leaved Spiræa.**—From Southwood comes a graceful shrub, *Spiræa sorbifolia*, somewhat like the Lindley *Spiræa*, but distinct. Well placed, and not robbed of good soil and air by coarser shrubs, it will prove a welcome ornament to lawn plantations.

**Parry's Lily.**—This graceful and distinct Lily comes in two forms from the New Plant Company at Colchester, one kind being the dark and tubular form figured in THE GARDEN some time ago, and the other more open, lemon coloured, and spotted. The odour of this Lily is good, and its form and habit very good.

**The Bavarian Gentian** (*Gentiana bavarica*).—This lovely Gentian is grown at Mr. Whitehead's as we have not seen it grown since we saw it in the Grass by the alpine rills on its native mountains in early June years ago. At Bickley it is growing in a little bog—simply a bed of peaty level earth with means of keeping it moist. It is a plant of rare beauty of colour.

**A Decaying Barberry.**—The evergreen Japan Barberry, referred to recently, has now its foliage as finely coloured as leaves can be, deep red, yellow with broad veins of red (a beautiful harmony of colour), and soft yellow. In the centre are three racemes of dark purple berries with a fine bloom. Two weeks ago, when the shoot was placed in the jar, both leaves and fruit were quite green. We have never noticed anything so instructive or beautiful in decay.

**The Potentillas.**—These are now in great force, but though showy and vigorous enough, there is a want of quality about them—a sort of paralytic hesitation apparently—as to whether they ought to be single, semi-double, or double, which makes one a little doubtful of them. More satisfactory than any of them seems to be the double scarlet Geum. A good race of single Potentillas having the fine colour of those half monstrous or half-double kinds would be welcome.

**Pansies Everywhere.**—Even one's delusions sometimes turn out pleasantly. The idea expressed by us some time ago that the hotter weather made the Pansies and Violas prefer the cool north for their perfect summer development has led to the receipt of certain charming bunches in the best state from Sussex, Surrey, and Bedford, and now Mr. Stevens comes with 150 kinds of Violas and Pansies, conveying argument in the most pleasant manner conceivable. They were gathered in his garden at Byfleet, in Surrey.

**Cornflowers** (*Centaurea Cyanus*).—Whatever the charms of the rare or costly flowers of the season may be, the Cornflower of our fields is one of the best that comes to us, and we should like to see every gardener doing it honour, and giving it a good place. There is no more useful plant. Strong autumn-sown plants grown in the strongest soil are well worth having for the sake

of cutting alone, and a bed or several lines of them should be raised in the nursery or reserve ground each year, if not elsewhere. The delicate and varied colour is charming. The bunches of the blue variety grown for Covent Garden Market have a Gentian-like vivacity of tone, which nothing else resembles or comes near.

**The "Semperflorens" Forget-me-not.**—This is the name of what appears to be a strong and good form of the common (and the best) Forget-me-not. It comes from Mr. Betteridge, of Chipping Norton, and it is to be hoped deserves its name. What is the length of time during which the common Forget-me-not flowers say when in a rich ditch or fat river side?

**The Glacier Pink.**—A bright and lovely Pink; large, too. At Mr. Whitehead's in the warm south the stems get up bold above the foliage, and the deep rosy colour of flowers is splendid. We had mostly seen it before as compact cushions of flowers over small pointed leaves. It is even finer when the warm air makes it rise bold and singly, so to say. *Dianthus glacialis* is its botanic name.

**Primula capitata.**—This charming rich purple Primrose comes in fine condition from the gardens at Pusey, Farringdon. Its beauty and distinctness are sufficient to give it an important place in its family, but the summer flowering habit of the plant is its peculiar charm. The rich purple and mealy heads give a colour that is valuable on the rock garden at the time when it flowers. It is quite free as a rock garden plant and hardy too.

**A Fine Japanese Shrub** (*Actinidia Kolomikta*).—Here is a dreadful name for a beautiful and singular shrub, singular in its cupped cream coloured flowers and handsome foliage with red stalks. Mr. David Evans, writing from Basset Wood, Southampton, says it rambles loosely over the west end of the house, and its abundant and free-blooming shoots overhanging a gay *Convolvulus*, have a very good effect. He also sends good flowers and foliage of *Gaultheria Shallon*, which he praises for its willingness to embellish unhappy nooks and shady corners.

**The Dwarf Scarlet Larkspur.**—This comes better than usual from the gardens at Pusey, and is a welcome reminder of one of the most singular aspects of vegetation in California. It requires to be grown well and placed well, being in our climate a little fragile, and to be raised not unfrequently from seed, so as to secure strong young plants. It cannot be compared to the lovely and stately blue and purple kinds in quality, but the novelty of a good red Larkspur is so charming, that many will desire to grow *Delphinium nudicaule* well.

**The Jasmine Bignonia.**—We introduce so many novelties that people are apt to forget to give at least equal chance to some fine old favourites; moreover, they are apt to judge them unfairly. While the old ones may be starved, unpotted, or unpruned, the new-comer starts with every advantage in life. We are reminded of our old greenhouse climbers by a fine form of *Bignonia jasmimoides* from the gardens at Pusey, the whole of the limb of the flower being delicately veined and suffused with rose. Few things ever brought from hot countries to our glasshouses surpass this in foliage or flower. True, it sometimes flowers sparsely, but how to flower it freely is certainly worth the attention of everybody having a winter garden or good greenhouse.

**British Hardy Heaths.**—We have enjoyed the sight of various hardy Heaths from an early period in spring, and now, the last day of June, we have received from Mr. James Smith's nursery, Darley Dale, near Matlock, a no less valuable series in full bloom, among them being his new seedling, the dark red variety of the Scotch Heather, the white variety of the cross-leaved Heath, *E. cinerea alba major*, *E. tetralix alba*, the St. Daboc's Heath and its bicolor form.



They are as well grown, as beautiful, and show that at least in one place a charming race of native plants get fair treatment. We should advise the use of English names for these in catalogues—as “Dark Red Scotch Heath”; all the species have good English names, and it would add to the interest of amateurs to use them for the varieties. If the very long names often affixed to these are given, it should be in brackets, to prevent confusion.

**Sweet Williams.**—There are so many Sweet Williams and Pansies in this world that he who could choose between them would be a wise man. They have this great advantage, that they are all beautiful, and this we can well say of a bright series sent us by Messrs. Daniels, of Norwich. The only unpleasant souvenir of Sweet Williams we have is this: Once upon a time it was our fate to judge Sweet Williams and many other things at a Welsh show near a famous iron-making town. The entries for Sweet Williams alone amounted to nearly 250. They were all beautiful, but three prizes must be given, so we gave them. In the afternoon, when the rushing and judging was quieted down, a nice old gentleman accosted me, and asked if I were the man who judged the Sweet Williams. “Yes,” I said, “I am the man.” He took me to a stand where they were, and, pointing at the first prize-lot, remarked, “I could find a donkey in South Wales who could judge Sweet Williams better.” Alas for the pleasure and justice of flower shows!

WE regret that, owing to a great press of matter, many interesting notes are unavoidably left over till next week.

## TREES AND SHRUBS.

### ORNAMENTAL PLANTATIONS.

THE primary object in forming shrubberies would seem to be that of obtaining privacy, shelter, and intricacy in design, and that is as easily obtainable with our common native shrubs and trees as with exotic ones. But exotic plants being obtained, it became requisite to find a situation, suitable or otherwise, for them in the park or garden. What place so handy, therefore, as the possibly existing border of native shrubs? and eventually, owing to numerous new importations, the older forms were driven out to make room for those that were handsomer in leaf and bloom or habit. This has led, in the majority of old gardens, to mixed borders becoming destitute of order or system. The plants stand, as a rule, much too thickly together for their natural development, and the consequence is, that the operation of mutilating with knife and axe is of constant occurrence to prevent the whole from becoming a jungle. It would certainly be an improvement in large gardens if, instead of planting extensive shrubberies with the more valuable shrubs and trees, we used the commoner forms for the interior of the masses, or indeed made them up almost entirely of such, and used the finer and more choice plants either in conspicuous places, foregrounds, or else dispose of them in the more natural and pleasing manner of groups of various dimensions and single specimens on lawns. More richness and variety would be the result in our garden landscapes by so doing, and we should also do away almost altogether with that worse than useless cutting and pruning, which we find so constantly being recommended in works on gardening up to the present day. In smaller gardens, the finer varieties of shrubs might predominate in the necessary shrubberies, but not to the exclusion of some of the better native or commoner forms. The smaller the garden the greater the difficulty of the shrub and tree arrangements, and in villa gardens the task of making pleasing designs seems insuperable by reason of their narrowness, and dividing walls

and other fences. But if builders and others could be brought to consider the whole of the ground pertaining to a group of villas as being capable of being dealt with as a garden for the enjoyment of the villa residents on communistic principles, much would be gained in a garden point of view. The entire management would cost each tenant less money than under the present system, and each would have a large garden in which to perambulate instead of the small strips one is accustomed to see in and about London and all large towns. We seem to act on the principle of regarding each man's house as being virtually his castle, and his bit of garden as the castle quadrangle, with its walls, chevaux de frise, and moat. It is to be feared, although here and there small beginnings are being made in the indicated direction, that the idea is too Utopian for to-day, so it must be left to its merits or demerits or feasibility for another decade or two.

I have in my mind's eye a place in which may be seen—perhaps at the present time, although it is some few years since I was there—some striking examples of what one should not follow. The designing had been made by a London nurseryman. I entered at a lodge gate, not the principal entrance, I believe. The lodge had not yet been built, and was at once in what I may call “the dressed grounds.” The road was capable of accommodating at least three omnibuses abreast, and on either hand were very moderate strips of lawn, in fact, out of all proportion to the desert of gravel. On the one hand was a young plantation, of forest trees chiefly, not badly planted, but placed far too near the road; on the other side was an oval shrubbery, perhaps, one hundred and fifty paces in length, and with a shorter diameter of twenty paces. That bed of shrubs was one dead level, without any prominent plants, small trees, or indeed anything to break its monotony, and it was filled with the choicest of evergreens. Everything stood as thickly together as in the nursery quarters; the stronger growing plants had already begun to smother the weaker ones, and, owing to the extent, nothing in the middle portion could be seen at all, except here and there the rounded top of some struggling evergreen. If somebody has not come forward with some “radical coercive measure” the greater part of the valuable plants in that shrubbery may be reckoned among the things that were. Let us take another example from the same garden—a bank of bare earth, sloping steeply to the lawn at its base, the outline fearfully serpentine, and planted in the same crowded method as that just alluded to; but, owing to the rapid acclivity, the plants could not harm each other so much as in the flat bed. How the rains must have washed all the earthy, fertile particles out of that steep border of unclothed soil. In the front ranks were tiny Heaths, Vacciniums, Menziesias, Ledums, mixed up with insignificant herbaceous plants; and the nearest walk, from which the observer would usually stand to view this bank, was fully sixty paces distant. These, and all other borders full of young plants, were duly tortured with spade and fork in winter and spring, and in summer and autumn the hoe and the rake continued the cruel work. I should like to see more shrubs of a deciduous character planted, instead of so many evergreens; we seem to ignore the beauty of the former, to the exclusion of so many really decorative subjects.

I prefer the icicle and snow-beladen deciduous tree to the withered, pinched, woe-begone evergreen, with one exception—that of the Fir tribe. Why do people plant so few such things as Euonymus, Cornus, Hydrangeas (especially paniculata), Corylus, Hamamelis, Halesia,

Viburnum (some ten sorts), Weigela, Vitex Tamarisk, Lilacs (especially persica, Charles X. Duchesse de Nemours, and Maxima alba), the Spiræas, Sophoras, Salix, Rubus, Rhus, Jasminum, and the smaller growing American Oaks (such as tinctoria and coccinea)? The colours of these latter are most gorgeous in autumn, and one can cramp them and root-prune them, and by that means dwarf them to suit small quarters. Prunus pyrifolia has pleasing autumn tints. Pyrus coronaria, transparenis, spectabilis, coccinea, salicifolia, argentea, pendula, and several others should find a place in every garden, for in bloom or fruit they are equally beautiful. Then Philadelphia coronaria, c. nana, and c. grandiflorus fl.-pl. are charming sweet-scented shrubs. Plants of Hibiscus, in many sorts, in groups or single specimens in sunny spots, are always telling; so also are the Elæagnuses near water, with dark Conifers behind or beside them. The varieties of Cytisus and Cratægus are so numerous and good that no one can make mistakes in selecting them. These and many others have fallen into much apparent desuetude during the last two decades, the blooms of which are very suitable for bouquets. We have ransacked the earth for Pines and Firs, and flowers that bloomed gorgeously, sometimes for two or three months, despising the inheritance of good things which our fathers had left us. But the cure has come at last, and we may really hope—each in his own garden, in the way best adapted to the climate, soil, situation, and means at his disposal—to be able to produce a garden picture worthy of our taste and means.

Why should the owner of a garden be prohibited from having at least one-half of his shrubbery to consist of fruit trees? If the ground has been properly trenched, and otherwise well prepared, Pears, Apples, Cherries, Plums, Raspberries, Currants, and Strawberries, might be planted either in groups or singly, amongst the other trees and shrubs.

Vines and other creepers might also find a place in the shrubbery. The strong-growing sorts seem better adapted to this kind of planting than the weaker and more delicate subjects.

SYLVESTRIS.

**The Snowdrop Tree** (*Halesia tetraptera*)—I think “W. G.” over-estimates the merits of this tree. It is good enough, but not so very remarkable. In this country cultivators like to have one or two, but we do not consider it a necessity of existence. The flowers are pretty and curious, and always short lived, but not so large as the engraving might make the reader suppose; in fact, there are several deciduous trees of American origin that we consider much more ornamental and valuable, whether for foliage or for flowers. Nor does the *Halesia* prosper better in South Carolina than in other parts of this country. There are trees in my neighbourhood on Long Island that are 30 ft. high, and it bears with success the severest frosts that we know here.—C. A. D. [It will be seen that the writer of the above and Mr. G. Berry, of Longleat, are of the same opinion as regards the merit of this tree.]

**The Mock Oranges at Kew.**—The species of *Philadelphus* at Kew have lately been in flower, and there, as elsewhere, are somewhat confusing from the number of names being in excess of the number of forms. What those forms are, and how far they are really distinct, deserves to be “worked out.” They are not very happily placed at Kew in a border somewhat in the shade of trees. They deserve a good open space where their natural form and size might be fairly developed.

**Aralia Sieboldi as a Seashore Shrub.**—Mr. Woodall tells us that this fine shrub, well known to many as a good room plant, is succeeding well as a sea-shore plant at Scarborough. The fact may be useful to many of our readers,



## THE LOMBARDY POPLAR.

(POPULUS FASTIGIATA.)

THIS is believed by the best authorities to have originated in Persia; some writers state that it is truly indigenous to Italy, but the evidence, however, I think is strongest in favour of Persia, from whence most probably it was introduced into Italy, where it is now a favourite tree and extensively grown. Lord Rockford has the credit of having imported this Poplar into England, by means of cuttings brought

inferior quality; the stem, too, in matured trees is deeply fissured, which causes much waste of material when the tree is cut up into scantling. My object, however, in writing now respecting the Lombardy Poplar is more particularly to note its marked and prominent features as an ornamental tree of singular habit and appearance, and I may also add that it possesses a solitary and sensitive nature or disposition not usual amongst other trees, by showing a decided aversion to thrive well when closely surrounded

growth, however, soon ensures it head light, air, and the freedom it delights in by pushing its slender plume-like top out of harm's way, high above its compeers, or, as the poet writes, Shoots up its spire, and shakes its leaves in the sun.

The Lombardy Poplar is most pleasing and effective in the landscape when planted in judiciously arranged groups of say from two to six or eight trees; if by the side of a river or stream, they may be planted in a row with two or three Willows or other trees of a drooping habit planted near them or at either end of the row. When a group of these Poplars is placed in a field or park in the open, it will present a more ornamental appearance and be less formal looking by being distributed at various and irregular distances apart, not all in a line, as they may too frequently be seen standing throughout the country; two or three may be in a row, but the others should be disposed at different distances and angles—straying away, so to speak, from the rest. A group of Lombardies alone has a gaunt, naked, and incomplete look without the addition of a few, say about half their number of other species of trees, round-headed and drooping kinds—not lofty and tall grown sorts such as the English Elm; and hence as they have a tendency to depress and take away the towering and majestic character of such a group, these round-headed trees should be planted in an easy and natural-looking style, one or two amongst the Poplars, others some little distance away in groups of two or three placed pretty close together, and perhaps a single tree still further away will help to lessen any stiff or abrupt effect the group may present. The mistake so often made in ornamental clump and group composition is forming round, square, and oval forms. This should be avoided as much as possible in all cases where it is desired to give to the landscape a natural look. Bold clumps are no doubt very effective in park scenery; still, they can be rendered more pleasing to the eye and none the less effective by judiciously scattering a few trees a little way from them.

The trees I would suggest to accompany Lombardy Poplars in groups in parks or fields where there is plenty of room and scope for full development are Horse and Sweet Chestnut, Sycamore, Walnut, and Ash. In situations where the space is more limited, such as the squares and outskirts of towns and suburban places, trees of less spreading and umbrageous habit should be selected from the following: Birch, Hornbeam, Maple, Wild and Bird Cherry, Willow, Robinia, and Gleditschia. In still more confined places, or close to houses the following may be planted: Laburnum, Thorn, Cotoneaster (deciduous), Virgilia lutea, Mountain Ash, Pyrus Malus floribunda, and Sophora. The Lombardy Poplar is a distinct and peculiar tree, and well repays a little garnishing. It may not be inaptly compared to a fine monument or a handsome house; both may be beautiful in themselves in one point of view, but capable of vast improvement as regards appearance by tree adornment, to tone or soften down the dead stiffness that perpendicular and straight lines invariably present. Just somewhat in a similar sense the Lombardy Poplar requires broad-headed and pendent trees to contrast with its tall, elegant, and upright form. Although it is one of the most welcome trees the eye can catch sight of in passing through the country or town, planters should take care not to plant it too frequently, or do anything to bring it into too bold prominence by forming avenues of it entirely, and planting single specimens of it in open positions is equally objectionable and devoid of good taste. It is in



Poplars by mill stream near Thatcham, Berks Drawn for THE GARDEN by Alfred Parsons.

from Turin in the year 1758. The original trees raised from those cuttings are supposed to have been planted at Blenheim, in Oxfordshire. Whether any of them are now in existence or not I am unable to say; probably not, for it is by no means a long-lived tree, being liable to heart disease, from which cause it is not unfrequently blown down after being in an advanced state of decay and rottenness at the core. As a timber tree of commerce it may be said to be almost worthless; the wood is of very

by other trees in plantations, and even when planted in the open in company with its own species, no matter how closely planted together, it refuses to interlace and embrace its neighbour, but grows up thin and attenuated rather than touch its associate. When planted in a mixed group of other species of trees with wide-spreading heads, and pressed for room by their branches, it will become denuded of foliage and its side twigs die back wherever it is touched by its surrounding companions; the rapidity of its



mixed groups that the Lombardy Poplar commands the greatest amount of admiration, when situated in a flat or low-lying district, or planted on the slopes of rolling hills, its waving spiry head is seen high above its less aspiring and round-headed neighbours, breaking and lifting the landscape as it were by giving a pleasing and irregular contour to the sky line. The annexed picturesque group, so well and truly drawn to nature, is a striking instance of the capability of this Poplar to give ornamental and impressive effect to the landscape. GEORGE BERRY.

#### Longleaf.

[The following is an artist's view of the way in which the Lombardy Poplar should be dealt with: "The same principles which would guide a man in planting hardy flowers would equally apply to the planting of trees. As a rule, one would use them in groups, sometimes a clump composed entirely of one kind, and sometimes a mixed clump carefully arranged as to growth. The Lombardy Poplar would naturally make a kind of highest point in the composition to which the other lines would lead up. I do not think that it looks well isolated, nor do you get the full advantage of its distinct form when it occurs singly among other trees, but the repetition of the perpendicular line is what you want. I think, too, for an avenue, or for a line of trees by water, the Lombardy is not easily beaten. It would be very effective on high ground, but it usually gets broken by the wind in such situations; it seems also to do best in a damp soil."]

**Half-hardy Trees and Shrubs.**—Of late years Mr. J. Stevens has set apart a sheltered portion of his garden at Grasmere, Ryedale, for testing the hardiness of the many trees and shrubs which are reputedly tender, and this trial annually furnishes some highly interesting results. The two last winters, being so exceptionally severe, have wrought much havoc among the more tender sorts, but the strong growth which some kinds are producing is remarkable. The following are among the kinds we noticed a week or so ago that are recovering from injury: *Buddleia Lindleyana* and *globosa*, *Photinia serulata*, *Veronica pinguifolia*, *Ceanothus azureus* and *C. Fontainesi*, *Idesia polycarpa*, *Pterostyrax hispidum*, *Xanthoceras sorbifolia*, *Cunninghamia sinensis*, *Paulownia imperialis*, *Catalpa syriaca*, *folia* and golden-leaved variety, *Ligustrum coriaceum*, severely injured; *L. sinense*, also badly injured; *Berberis Fortunei*, *B. Hookeriana*, *Arbutus Crooni*, much cut; *Saxa-Gothaea conspicua*, an interesting Chilean Conifer, *Rhodea japonica*, and most of the hardier *Fuchsias*; all the *Hydrangeas* are completely destroyed.

**The Rose Acacia** (*Robinia hispida*).—This is one of the trees that, although comparatively common, is not seen so often as it deserves to be, for now that the masses of bright coloured thorns are over, it is one of the most conspicuous of our shrubs or small trees, and this season both this and the common False Acacia are unusually full of flowers. In its variety *macrophylla* the flowers are much larger and somewhat brighter, and it is altogether sufficiently distinct to be noticed. Yet a word in favour of the golden-leaved variety of the common Acacia, which is now remarkably effective, as while many plants which in the first flush of their foliage were very bright have now paled somewhat, this Acacia is brighter than ever. In several gardens about London the Rose Acacia is now beautifully in flower, and a fine old specimen adorns that portion of the arboretum at Kew known as the dell.

**Barberry Hedges.**—Mr. Quetton states, in the *Canadian Horticulturist*, that he has several miles of Barberry hedge, and he prefers this shrub to any other for hedges on dry ground. They do not succeed on wet or marshy places. Their well known characteristic of stooling freely soon renders the hedge thick at the bottom, so that

when planted a foot apart he has known them to become so thick in three years as to defy sheep, pigs, or geese. The well-known drawback of Osage and Honey Locust hedges is the annual care required in cutting back, and here the Barberry possesses a great advantage. Although a close hedge of Barberry, which cattle cannot see through, may prevent them from ever attempting to pass, yet greater security would be afforded by placing a single barbed wire lengthwise through the centre while they are growing, as has been recommended on former occasions. The facility with which the young seedlings are raised, and the ease in transplanting them in the hedgerow, give them additional advantages.

**White Azaleas in the Open Air.**—After the manner in which these have stood the test of the past few winters, there can be no question as to their hardiness and ability to withstand our severe and trying winters; they are now in full bloom, and may be added to the list of hardy shrubs useful either for decoration or for affording a supply of cut bloom after those under glass are over. As there are many places where old bushes in pots and tubs are found that have been used for cutting from for years, I would advise that a trial be made of them by planting them out at once; and as some of the dark coloured varieties will probably prove quite as hardy as the white, I look forward to some day seeing the Indian Azalea quite a common shrub in groups on the lawn.—J. GROOM, *Linton*.

**The Old Guelder Rose.**—You utter a word of praise anent this *Viburnum*. I think that no other *Viburnum* is at all equal to it. Here, this season, it has been and is still splendid masses of snowy white; many of the heads are fully 4 in. in diameter—snowballs, indeed—and besides it is so hardy, whereas *V. macrocephalum* is not; even in mild winters it is injured here. It has, however, one merit, and that is, it flowers much later. I saw a pretty picture a few days since: a Guelder Rose had been planted many years ago in a corner behind an Irish Yew. The latter has grown up into a stately tree nearly 20 ft. high, and about two-thirds of the way up a branch of the Guelder Rose has grown through, and now hangs in massive wreaths of snowy whiteness, showing to great advantage against the dark green background.—T. SMITH, *Newry*.

**Catalpa speciosa.**—This has been a favourite tree in the prairie towns of West Louisiana, where fine specimens of it are common; and at several places both in Western Louisiana and Eastern Texas it is naturalised in the woods at considerable distances from any existing settlements. Mr. Letterman, of Allenton, who devoted last summer to studying the forests of Arkansas and the Indian Territory, discovered some fine specimens in the town of Washington, in Southern Arkansas. In the hotel yard there, he writes me, are two trees which were brought from Nachitoches, on Red River, in 1840, and which measure 11½ ft. and 10½ ft. in circumference at 4 ft. from the ground; and two in the grounds of General Royston, which were brought from Monroe, La., in 1836-37, and which girth 10½ ft. Mr. Letterman found this tree thoroughly naturalised in the woods about Washington, and about Little Rock, on the Arkansas River.—C. S. SARGENT, in *Gardeners' Monthly*.

#### Camellia Leaves from the Shrubbery.

—With the Tulip tree blooms sent to us from the well-stored gardens at Margam, S. Wales, came some *Camellia* shoots more glossy than Laurels, and which have been a surprise to all who have seen them. In this garden they are grown out of doors, and with a freshness and vigour of foliage such as one never sees them display in houses.

#### Aralia Maximowiczii or ricinifolia.

—This most distinct and handsome shrub, described as hardy in *THE GARDEN* (p. 664), has, I am sorry to say, not proved so with me in the south of Ireland, as a healthy young plant sent me last summer by Messrs. Veitch from Coombe Wood was quite killed during last winter, con-

siderably to my surprise, as I had always before believed it to be hardy. Its leaves, when fully developed on a strong plant, are, I should say, at least double the size you name.—W. E. G.

## THE GARDEN FLORA:

### PLATE CCXCI.—ODONTOGLOSSUM CRISPUM.

THIS Orchid has now become a universal favourite, and justly so, for if we were asked to name the most useful, profitable, easily grown, and beautiful Orchid in cultivation, it would without hesitation be our choice. Nothing can well surpass the chaste beauty of the blossoms of this Orchid, not even its newer congener *O. vexillarium*, which some consider the queen of the genus. The gracefully arching spikes of bloom which remain in perfection for many weeks are in strong contrast to the somewhat flimsy flowers of *O. vexillarium*, which, moreover, is a plant more difficult to grow well, requiring more heat, not being so serviceable for floral decoration. It is one of the numerous plants about which botanists have disagreed somewhat, especially with regard to its name. About forty years ago Hartweg discovered in woods near the village of Pacho, in the province of Bogota, a species of *Odontoglossum* that the late Dr. Lindley named *O. crispum* on account of the crisped edged flowers. Subsequently John Weir, the Royal Horticultural Society's plant collector, discovered in the gloomy forests of Santa Fé de Bogota, at an elevation of 9000 ft., another species which Mr. Bateman named *Alexandrae*, in compliment to the Princess of Wales. This was in 1864; since then our knowledge of Orchids, and particularly of *Odontoglossums*, has become so much extended, owing to the large quantities of them that have been imported and the numerous varieties that have resulted therefrom, that now, we think, no one would hesitate to consider the two so-called species one and the same sort. Another name (*O. Bluntii*) has been given to one that is very similar to *O. crispum*, and which is found also in Santa Fé de Bogota. It differs, however, somewhat in the form and colour of the blossoms, but no more than other varieties of *O. crispum*. *O. Pescatorei*, discovered in the Oak forests of New Granada by Funck and Schlim in 1847, is generally considered to be distinct, notwithstanding the fact that some forms of *O. crispum* so strikingly resemble it as to be almost undistinguishable from it. The shape of the pseudo-bulb often affords so distinct a character in the numerous varieties and so called species that experts can distinguish them by that alone, even when not in flower.

The varieties of *O. crispum*, as we before observed, are now very numerous, and every large importation of plants invariably yields many forms, some inferior, others superior to the typical kind. As a natural consequence, therefore, there is a long list of named varieties all differing, more or less, from each other. The principal named sorts are *guttatum*, *giganteum*, *grandiflorum*, *roseum*, names which sufficiently indicate the character of the variety, while two others, *Trianae* and *Warneri*, are both magnificent varieties, with large finely-marked flowers. Of course it would be impossible, and not at all desirable, to name every form which deviates from the typical kind in point of colour or size, for everybody would be naming every mere variety, a practice that ought to be discouraged, as it invariably leads to confusion. Our plate represents what may be called an average fine variety; we could have chosen one with larger flowers and more profusely spotted, but as it is always desirable to figure an average











rather than exceptionally fine variety, we selected one from Mr. Cobb's selection, at Silverdale Lodge, Sydenham, where cool Orchids are grown extensively. The specimen shows well the beautifully crisped margins of the flowers, a distinctive character, though not an invariable one belonging to this species.

**Culture and Position.**—The culture of cool Orchids has been so often treated of in our columns that it is almost unnecessary to advert at length to it. Mr. Catt, the gardener at Silverdale Lodge, who is a highly successful cultivator of such plants, writes as follows regarding the *Odontoglossum* in question: "Like its congener *Pescatorei*, *O. crispum* likes the coolest treatment during the summer months; ventilators and lights are therefore thrown open day and night, and a good humid atmosphere is maintained by syringing. The plants are potted in well drained pots in lumpy peat and sphagnum, and a good supply of water is given all the year round. If allowed to get dry, this Orchid will soon show signs of injury by losing foliage and the shrivelling of the bulbs, so great care should be taken as regards this point." This is one of the few Orchids that are grown on a large scale for supplying the market with cut flowers, and in a few places round London it is grown by the thousands in long narrow houses, and even in ordinary brick pits heated by hot water, and in such places it is grown quite as easily than many other market plant.

W. GOLDRING.

#### ORCHIDS AND OTHER PLANTS IN WISCONSIN.

TIME was when the analysis of the ash of a plant was considered to indicate the mineral matter required in a soil for its perfect growth, and the constituents required in a special manure. So also it is considered desirable that a gardener should know something of the climate and soil in which a recently introduced plant naturally grows in order to determine what mode of culture would be most suitable. But neither one nor the other seem to be infallible guides. Take our common Thrift or Sea Pink, as it is usually called; on the flat sandy shores of a tidal river I find it growing in great profusion, but on an embankment adjoining, washed only by high tides, and where there is a thick sward of Grass, not a plant of Thrift is to be found. The ashes of this plant were analysed by Dr. Voelcker, and soda was the chief alkali found. If the investigation had ended here, the inference might have been that sand and soda were essential for the perfect growth of Thrift. But we know by experience that the plant when removed from the sea-shore and planted in the richer soil of a garden, and not crowded by other plants, will grow with much greater vigour, form a dense green cushion of leaves, and produce flowers double the size and of a richer colour than by the sea-side. Dr. Voelcker has also analysed the ashes of the plant grown inland, and he found it was able to substitute potash for soda. I do not remember ever finding a plant of Thrift growing naturally away from the sea-shore except on the summit of Ben Lawers, one of the highest mountains of Scotland, where it had little else than Lichens to contend with. Thrift would seem to grow on sea sand, because it is able to grow there where so few plants can, but in richer soil, where it could grow better, in the struggle for existence it is crowded out by more vigorous vegetation. The Juniper I have seen growing finely on the chalk in Surrey, a hill there being known as Juniper Hill. It grows on the mountain limestone crags of North Lancashire, and the finest plants of it I have seen were growing on the same rock on the banks of the Tees, in that rich botanical district, Middleton-in-Teesdale. It might be inferred by one acquainted with the plant in Britain only that a dry soil and lime were essential for its growth.

It occurs sometimes on dry ground in the United States, according to Asa Gray, but in the State of Wisconsin I have never met with it except in low wet ground, usually in small islands a little elevated above a shaking bog, where the American Larch or Tamarack grows, and there is no chalk or limestone in the immediate neighbourhood. Of common English weeds introduced into the United States some seem unable to endure the climate, whilst others make greater headway than in their native country. The common species of Mullein, not a common plant in England, is in Wisconsin very vigorous and abundant, taking possession of newly-made railway banks and neglected fields. The Thorn Apple (*Datura Stramonium*), known in America as Jamestown Weed, not a common weed here, is well able to take care of itself in the United States, and becomes a troublesome weed on farms on which it is allowed to get a footing. The Grass *Poa pratensis*, the celebrated Blue Grass of Kentucky, and the June Grass of the Western States, may be found in meadows here growing side by side with other Grasses, but in Wisconsin it seems to have the power of killing almost all other vegetation with which it comes in contact. It seems to do this by drying the soil during dry spells which usually occur more or less during summer; its leaves will be brown and withered, so that fire may be run over the ground, but its creeping roots live, and a bright green carpet immediately succeeds heavy rain.

Of a few plants, natives of both countries, some seem to do better in Wisconsin, others not so well as in England. The Fern, *Woodsia ilvensis*, now almost extinct in Britain, grows in great abundance near my place from the fissures of a porphyry rock, and it has there endured on two occasions, to my knowledge, a temperature of 40° below zero and 103° above it. The snows have scarcely melted away before the roadsides are gay with the light purple flowers of *Anemone Pulsatilla*, a somewhat rare plant here, while its cousin the Windflower, *A. nemorosa*, though abundant, is a poor little starveling compared with the British plant. But I commenced to write with a view to say something about the situations which some American *Cypripediums* seem to prefer. In your issue of June 4 a correspondent at Albany, N.Y., states that *Cypripedium spectabile* grows in exposed swamps. I have never so found it growing in Wisconsin. By swamps we understand there a wet bog covered with Moss, where Sundews, Pitcher plants, and *Andromedas* grow. As we pass over these swamps to hard land, we usually come first to a belt of worthless Grass called wire Grass; next follow broad-leaved Grasses, useful for hay; then between the Grass and the timber usually occurs a belt of low, broad-leaved, herbaceous plants, not usually considered worth mowing; and it is in these belts where I have usually seen this queen of *Cypripediums* grow. The soil is black vegetable matter, probably always moist. *C. pubescens* I have had in great abundance, one year counting upwards of 150 blooms from one standpoint. These were growing on level ground a few rods from a swamp, and on which the Burr Oak was growing sparingly; the soil vegetable matter, resting on boulder clay and dry enough to plough. *C. candidum*, described as "a little gem," grows in a rather open situation, also on loose rough ground. This is a rare American plant, and rare in Wisconsin, I suppose, having had a few years since to supply a gentleman who had pretty thoroughly investigated the flora of Wisconsin with plants for Kew. It grows with such plants as *Dodecatheon*, *Geranium*, &c. It flowers early, and when in flower its snow-white lip makes it very conspicuous. Being of low growth, after flowering it becomes partially shaded by taller growing plants. The soil in which it also grows is black vegetable matter.

Such notes may possibly afford hints, but it seems to me that with all our vaunted knowledge and advance we are yet but groping our way to clearer light. There are on every hand mysteries connected with plant life that are yet inexplicable,

and the safest guide to the culture of any plant is that acquired by actual trial and accumulated experience.

J. T.

## GARDEN DESIGN.

### ROCKERIES.

A CORRESPONDENT, tired of the stereotyped shrubbery, asks for some advice as regards the formation of rockeries, which we give, but without much hope that it will be serviceable; for among the many strange perversities of the human mind there is nothing more sad than the turn it takes when directed to the formation of a rockery. It is generally constructed in such a way that the plants can neither be seen upon it nor grown upon it. Perhaps the difficulty arises from the fact that so few people really notice what they see in countries where the rock crops out naturally, and where what are called alpine plants grow. A vague notion has been instilled into their minds that the right thing is to form a hybrid between a bank and wall of scoria, burnt bricks, or any rubbish which they can get hold of. When the material is better the same idea is faithfully carried out; there is no evidence that anybody remembers the fact that alpine flowers, like other flowers, grow in the Grass or in the level soil, in the great majority of cases, and that comparatively few of them care for a dusty hole between two stones in a lowland country. Frequently the rockwork is made without any space for soil, or, if there be soil below, probably there are dry interstices which prevent the roots getting to the soil; but in the Alps we find alpine flowers growing on the level ground by thousands, and on this level ground they get many months of snow and many rains in spring; but in our country, where there may be no snow, but, on the contrary, very often a drying time in winter and autumn as well as in summer, the surface exposed to all sorts of vicissitudes, people act as if the plants could live on air and dust. When the masses of artificial cement work are made which are not uncommon in country seats, the pockets, as they are called, at the sides are far too small, and as the edges project the plants are often starved. We hear, too, of certain salts or other ingredients being used in the formation of these artificial rocks, which destroy the plants. As a matter of fact, if anyone were to take a number of alpine rock plants, and plant them in a field of good free soil anywhere, they would grow infinitely better than in most of the rock gardens in the country, provided always they were kept free from being overrun by coarser plants.

The conclusion from all this is that we ought to make fewer rockeries, and make them with about one-sixth of the material that is generally used, and dispose of that material in a wholly different way. The rock or stone should crop out of banks or masses of suitable soil, more rock being supposed to be hidden. This, at all events, is the best way for the beginner, who is likely to make a mistake; this also is the true way for allowing plant beauty to be seen, inasmuch as so grown plants can be seen in little colonies or carpets of each, and their bright colours enjoyed; whereas, stuck in holes between masses of petrified rubbish or stone, the plants cannot be seen. Five or six stones of mossy or worn millstone grit, or any other suitable stone, half buried in a mound of earth, make a far better rockery to begin with than many a pretentious affair, costing much money and time in its formation. In our public gardens we do not know an example of what we should really call a really good rock garden. The plants do well in the Edinburgh Botanic Gardens, but the square kind of pocket adopted is very inartistic and need-



less. At Kew the rock garden is wretched, although not quite so bad as it used to be. In commercial gardens there is one good example in the country, and that is at Messrs. Backhouse's at York, where there is some really good work done in the formation of a rock garden, particularly the most recent part of it. Our advice to those who love plants, but are without good stone easily obtainable in their neighbourhood, and have not some idea, from their own observation, of rocks or alpine flowers in nature, would be to do very little, or nothing at all, in this way. Every plant they want of the character usually placed on these structures can be grown as well on the level ground or on a raised border where the soil is favourable—that is to say, free or sandy. An immense number of kinds can be grown on stiff soils.

In making artificial landscapes, and all that sort of work, people forget the real beauty which may be obtained on the level ground by a sufficient number of beautiful trees and other living objects. This is proved by walking into many a quiet country garden, or into some of the gardens at the colleges at Oxford. In such places the stateliness and the diversity of vegetable life, and the quiet turf between, are really all that is necessary to secure results far more satisfying than those obtained in a more pretentious and more costly system. The variety of tree and other garden life is now so rich with us that, given a little knowledge and taste, the very highest effects may be obtained with living things, and fresh turf on or around which to group them. V.

**The Terrace Wall.**—On one of the pleasant hills on the south-western side of London, fringing the Thames valley, there is a pretty garden surrounding a large cottage in the old English style, Ivy-clad and very snug and artistic. No expense has been spared on the garden, indoors or out. The ground falls gently from the front of the house to a small valley, and rises again gently to a crest of wood, the house commanding a good view of the country around. Had the lawn been allowed to fall naturally and gently away from the slight plateau on which the ground stands, the effect, to or from the building, could not have been improved. But the evil genius came on the scene in the presence of what is best called the garden architect or garden engineer, and he makes a terrace in front of our old English cottage. It was not, like many, a mass of flower beds or coloured gravel, but simply of Grass, the bad point being, however, that the hard stone wall, thoroughly well built and well designed, cut off the whole of the foreground, as seen from the house, so that those walking immediately in front of the cottage, or from the lawn, could not see into the valley. So, again, those outside the wall could not, without going back a considerable distance, see the large and pleasant windows of the main floor of the house or its doorway. This case is thoroughly typical of what we have often said about the matter, and shows well how the lawns in our gardens, which were justly considered their best parts, are spoiled by thoughtless, reckless, needless expense. The gardener in this place, an intelligent man, who had an eye for things other than his flower beds, soon discovered the effect of the wall, and one day ventured to point it out to his master, suggesting that it would be better away. "Why, good Heavens," replied the master, "I have only just paid over a thousands pounds for it.—Field.

AMONG the "aesthetic" criticism which is now being published in sheets of various kinds, we find the following on the doings of the æsthetics in "Covent Garden Market, where certain of the good, wholesome scarlet flowers of our garden beds are found converted by the gardener's art into sickly greens and bilious blues for the adornment of the

æsthetic lady's belt, or the button-hole of her male companion. The dear old Pentstemon, for instance, looks half ashamed in its new garb, with its long row of crimson bells drooping in melancholy mediæval sea-green." Certain it is that whatever the so-called "æsthetics" may be, some of those who comment upon them are the most ridiculous and ill-informed of scribes.

## THE INDOOR GARDEN.

### TROPICAL PLANT HOUSES.

FEEBLE as our attempts are in representing tropical vegetation in an artificial climate, and in the limited space of even our most capacious hothouses, they convey a better idea of what the beauty and grandeur of the plant life of the Tropics are than can be obtained from any description, be it ever so lucid, or even from the cleverest delineations of the brush or pencil.



Tropical Plants in the Palm House, Royal Gardens, Kew. Drawn from Nature, April, 1881.

Happily, there are many gardens in this country in which tropical plants are cultivated more or less largely, but nowhere beyond the Tropics can they be seen in such perfection, or in a nearer approach to their native vigour and dimensions than in our national garden at Kew, which for nearly a century has held a prominent position among European botanic gardens. It is more particularly the plant life in the Palm stove to which the present remarks are directed, and the little illustration here given represents a small portion of the central portion of that house, sketched when the singularly effective *Agave attenuata*, shown in the foreground with a tall arching flower-spike, was in perfection. The effect of this plant, with its attractive yellow feathery blossoms and noble port standing out in bold relief from the background of stately Bananas and Palms, was extremely striking, and arrested the attention of every one at the time. The aspect of the whole of the central portion of this house is one of imposing grandeur, the majority of the plants being of huge dimensions, and some not far short of the size which they

attain in their native habitats. The most prominent features are, of course, the Palms, than which there is not a finer collection in cultivation. The noblest of these are the Wine Palm (*Caryota urens*), which long ago reared its stately head of foliage to the highest part of the dome, but now apparently gradually eking out its existence, as most of this class of Palms do when they have once flowered; they produce their gigantic clusters of blossoms from the axils of the topmost leaves and then successively from those below, and so on until the lower leaves have been reached with flowers and fruits, and then the plant dies. Opposite is an immense specimen of *Seaforthia elegans*, a Palm which in its young stage is such a favourite for the adornment of hothouses of small dimensions. This Palm annually bears a huge cluster of flowers, which hang in long white thongs, which have a strange yet noble appearance. Near to this is an exceptionally fine example of *Caryota Rumphii*, one of the grandest Palms in the house, which throws its broad leaves far and wide. Another grand specimen is *Sabal umbraculifera*, which is a perennial source of interest to visitors on account of the ponderous clusters it bears of Grape-like fruits, shining with a jet black lustre from beneath the large fan-shaped leaves. Other grand Palms in the centre of the house are *Pritchardia pacifica*, several species of *Phoenix*, *Cocos*, *Latania*, *Livistona*, the stately and rare *Areca Baueri*, and others of the singularly attractive *Ceroxylon andicola* with its long white leaf stalks. Mingled with the Palms are hosts of other plants of a similar stature, notably the various kinds of *Banana* (*Musa*), among which the magnificent leaves of the Abyssinian *Musa* (*M. Ensete*) are very conspicuous.

The undergrowth of Aroids and other shade loving plants is comparatively a recent innovation on such a large scale, and a very beautiful one too. They are all planted out in free soil of good depth, and they thrive with remarkable vigour, many being finer than those in pots in the ordinary collection in No. 1 house. In these beds beneath the towering Palms there is an infinite variety of plant life all thriving with native vigour, and the whole forming a scene unsurpassable elsewhere, and not even in any one locality in the Tropics could there be seen such diversity of form, size, and colour, seeing that there are representatives from almost every region of the Tropics congregated in a space of a few hundred yards square.

The south wing of the house contains one of the grandest features of the garden, that is, the unique collection of Cycadaceous plants, chiefly from Australia, the Cape, and South America. At all seasons these are grand objects, but never so fine as at the present season when the major part of them are developing new heads of foliage. To enumerate these in detail would be beyond the scope of the present remarks, as allusion has been made to them on several occasions in THE GARDEN. No visitor to the garden interested in plants should omit seeing this grand collection, which, in itself, is quite a study. The foregoing are but a few of the types of tropical vegetation represented in this noble structure, a collection which is worthy of the nation, and redounds to the credit of those who have so assiduously laboured to render it what it now is. W. G.

**Pothos aurea.**—From your beautiful wood-cut and description I presume this choice novelty is almost or quite identical in character and habit with the silver-leaved *Pothos argyrea*. If it also grows as freely it will prove most valuable for



the clothing of rockeries, and also for furnishing baskets. The peculiar mode of growth, and even the peculiarities of stems and their rootlets, make it a most interesting plant for the latter purpose. Is the new comer a distinct species? or merely a golden sport of the older species? Either way it will be equally welcome. Considering the beauty of such plants, it is surprising how seldom one meets with the Pothos, though few plants are more easily grown or propagated, and none are more effective, as it firmly grasps and closely hugs the wall with such tenacity that one might as well try to open an oyster with the finger as to remove the Pothos after it is firmly established.—D. T. F.

**White Show Pelargoniums.**—A correspondent of THE GARDEN directs attention (p. 663) to white Pelargoniums, and justly observes they are always welcome and generally in demand. Looking through the large collection, both zonal, show, fancy, and of the regal type at the Hon. Judge Gough's the other day, indoor and out, I would be inclined to strongly commend for decorative purposes Claribel and The Bride in preference to many others. They are both pure white, nearly similar, with small blotches of rosy carmine on the two upper petals of the softest and richest shading. The trusses, especially of the latter, were numerous, comparatively large, and well thrown up above the foliage. They seem to do best in comparatively small pots, and with the coolest treatment. It is useless to expect satisfactory flowering under glass, except with shading or muffing as here.—W. J. M., *Clonmel*.

**Plant Houses.**—There is a marked difference in the description of plant houses constructed at the present day by market gardeners and nurserymen compared with those that used to be erected for a like purpose in times past. Now the woodwork is made no stronger than is just sufficient to support the weight it has to bear; the bars are placed far apart, so as to admit of very large panes of glass, often from 18 in. to 20 in. wide or more, the whole held together and strengthened by extra tie rods, placed in such a way as to stiffen and support the roof sufficiently without intercepting a single ray of light more than can be avoided. Every existing wall or building used to be built up with a lean-to house or pit, under the impression that a gain was effected by using the wall as a back to the new structure; by such an arrangement no doubt a little was saved in the first instance, but this was adversely over-balanced ever after by the one-sided and diminished light the plants received. This is now generally understood and admitted by a class of individuals whose business it is to calculate the return for every pound they spend, in confirmation of which we recently heard one of the oldest and most experienced of the London market growers, who still has a number of these old-fashioned houses so placed in use, say that if anyone would now build him a similar lot free of cost, he would not accept them. The houses at Swanley Nursery are good illustrations of these cheap erections; they stand where there is not a tree or wall of any kind to diminish the light; they are span-roofed, resting on walls some 2 ft. or 3 ft. high, with no side lights; they stand about 18 in. apart, the space between being filled up with earth rammed hard in; on the top of it is placed a thick layer of chalk or other hard material, the whole asphalted over and sloping slightly to the middle of the space; they thus do double duty, as paths to get between the houses for repairs and painting, to push on or remove whatever shading is required in summer, and act as gutters to receive the roof water, for which purpose they have a slight descent from each end to the centre, where the water is received into a very large brick and cement tank sunk beneath the floor, and intersecting the houses. It is a simple and efficient arrangement that we have not before seen adopted, but which does away with the annoyance and cost of leaking spouts or gutters, and is a decided gain where numbers of houses of this kind are erected.—P. J.

## NOTES AND READINGS.

The fancy prices charged by some members of the trade for seeds and roots, and the great difference in the prices of different firms and their way of dealing with customers, are things that puzzle gardeners and their employers not a little every now and then. There are seedsmen who cannot sell certain flower seeds except in the form of 2s. 6d. and 5s. packets, and there are others who can do the same at 3d. There are those whose pinches of seed of the same kind differ to the extent of 100 per cent. in the quantity given, the price, strain, and quality being the same—or in other words the article is that much dearer or cheaper as the case may be. I saw two lots of a certain popular herbaceous plant the other day from different nurseries, and in one lot the roots were four times as big as those in the other and dearer lot, which were, it was said, sold at the lowest figure. Tuberoses are sold in one shop at from 5s. to 7s. per dozen, and in another at 25s. per hundred. Lily roots of the same kind and quality are sold by some firms at prices ranging from £3 to £5 apiece, and are offered by others for about as many shillings "in the legitimate course of business." I am assured this is correct. One does not object to paying a fair price for a good article, but such disparity in prices makes buyers fear that the dealers are either imposing upon themselves or their customers. The prices of fine Grass seeds, too, differ in an equally wonderful manner, but it is only fair to state in their case that the dearest seeds are, as a rule, the best, and that in this particular style of goods the quality differs more than the price. I have had some opportunities of seeing the samples of different firms tried in both small and large compass, and the difference in quality would hardly be believed.

The effect upon crops of digging and pulverisation is a subject, that has now and then received some attention from cultivators who are not, however, all quite agreed as to their necessity under all circumstances. There is a pretty unanimous opinion in favour of digging and stirring previous to sowing seed crops, but such pre-liminary operations do not appear to be urgent in the case of crops that are transplanted. It was stated once, in THE GARDEN or elsewhere, that at Chatsworth and some other places crops like Cauliflower and Broccoli, &c., were planted in hard, undug ground by iron crowbars, and crops equal in every other respect to those treated in the usual and approved manner were the result. The manure, instead of being dug into the soil, was spread on the soil as a mulching, as the French treat their Asparagus.

It is of course manifest that if one crop can be planted on ground vacated by another without digging, a great saving of labour must be the result, as one good digging or trenching will serve for two crops, but both digging and manuring periodically will be necessary all the same.

The practice of frequent digging and forking is founded, no doubt, upon the notion, not altogether correct, that soil not so worked gets as hard below as it does on the surface. In ordinary good elastic soils this does not, however, appear to be the case. Soil does not settle yond a certain point, and it requires enormous pressure to affect newly dug ground more than a few inches below the surface, while turfy composts, like Vine borders, are hardly affected in the smallest degree, though treading with the feet on Vine borders is very much objected

to by some growers. Turfy composts are so elastic that a steam roller pressed over them would hardly produce any sensible effect. Engineers are familiar with this fact, and macadamised roads, calculated to bear the heaviest traffic, are made successfully over spongy morasses, the only point of importance being to spread the stones evenly to ensure sufficient resistance. Plants dibbled into undug ground with a hardened surface are not really in an unnaturally hard soil, for once the top tap root is inserted through the top crust the soil is tolerably open and permeable, and if it has been previously well tilled, there is nothing to hinder the plants from thriving. This is probably the secret of the success which has attended the practice, for such subjects as Cauliflowers do not grow fast or well in a soil that is really hard about the roots. It is not profitable work digging in the dog days, and it is hard work for men; the idea of planting large breadths of garden crops without incurring that labour may, therefore, commend itself to some cultivators, and suggest experiments in that way.

As regards fruit-tree borders, it may be worth while hinting to those who believe in hard borders for such subjects as the Peach that they cannot make a border hard if made of turfy compost except by treading the compost in in thin layers at a time, as the compost is filled in and then it cannot be made so firm as to obstruct the roots from taking a straight course if they choose. Years ago I remember seeing a number of men making a Peach border with their feet in this way. The soil was light, and it was trodden as hard as a number of heavy men could tread it. The gardener, a man of experience, declared it could not be made hard enough in any other way. The trees grew and bore well afterwards, and that they did not find the rooting medium too hard was evinced by the fact that they required root pruning a few years after planting.

A recent lecturer before the Scottish Horticultural Association, whose name causes one to exclaim, "Is Saul also among the prophets?" said some rather severe but true things respecting flower gardens of fifteen years back or thereabout. "The gardener," it was stated, "has begun to see that the cutting up of a small rectangular or circular piece of ground into a lot of ingenious lines, and planting the whole with a combination of various colours, neither constitutes beauty, nor has the slightest approach to it." If this be true it would have been difficult to find a garden approaching the beautiful at the date referred to. The lecturer overshoots the mark here, however. The worst opponents of the bedding system have never sought to deny that pleasant contrasts could be effected by combinations of colours merely, and there are gardeners who have shown both taste and judgment in producing such displays. The fault of their system was that it was all formal combinations, and nothing else—it monopolised the garden.

The cutting up of small rectangular or circular pieces of ground, &c., is, as the lecturer states, a fault without doubt, and he might have added big pieces of ground as well. A small bit of formal gardening is almost excusable beside a large extent of ground occupied by labyrinth upon labyrinth of intricate patterns varied only by the shape of the beds composing them, and nothing else.

The lecturer also stated that "In autumn we cannot dispense with strong colours," which strikes one as a curious fact, if it is a fact. Gardening and poetry must be at variance on this



point, for, says Burns, with true poetic feeling—

Come autumn, so pensive in yellow and grey,  
And soothe me with tidings of Nature's decay.

Perhaps "strong colours in autumn" are necessary from the bolder point of view, in order to sustain the spectator's interest after a summer's dissipation in the same style of gardening. It is a promising sign to see such subjects as "Present-day Flower Gardening" taken up by associations like the Scottish one.

## THE LIBRARY.

**Plaintes d'un Horticulteur.\***—This is a pamphlet by M. Godefroy-Lebeuf, Argenteuil, on the present state of the Garden of Plants in Paris, and it also contains explanations regarding two of the late employés of that garden as to the reasons why they were obliged to retire from it. The Garden of Plants at Paris is naturally a subject of interest to many visitors to that city, and its condition and management are not without importance to horticulture generally. Any large national establishment much visited and much talked of has a great influence for good or evil. As we have several times ventured to point out, the state of this garden is deplorable. An old-fashioned and unsuitable plan makes impossible any such charm of design as we expect in a garden. The whole place may do very well for museums and menageries and so on; but mixed up with the garden these things form rather an incongruous whole, and the interest attaching to both plants and gardens suffers very much in consequence. It would appear that what is so clear to some foreign visitors as regards the state of the Garden of Plants begins to attract the attention of the nation, and M. Godefroy-Lebeuf, an old pupil of the Garden of Plants, puts very clearly in his pamphlet certain unpleasant facts as regards the work and the management of that institution. We hope they may do good, and help to lead to the sweeping reform that is needed. The truth is, the old notion of a botanic garden is long behind the time, though many a fusty old garden in a Continental city still bears the name of "Botanic Garden."

**Arboretum Segrezianum.**—This remarkable work makes steady progress, as in addition to the first number which we noticed some time ago two others have now appeared, in which the following new trees and shrubs are figured: No. 2: *Crataegus Lavalleyi*, *Diervilla sessilifolia*, *Nuttallia cerasiformis*, *Catalpa Kamferi*, *Exochorda grandiflora*. No. 3: *Idesia polycarpa*, *Rhodotypos kerrioides*, *Prunus divaricata*, *Crataegus punctata* and *heterophylla*, *Aria Decaisneana*. The plates are very carefully done, and in most cases of the size of nature. It is seldom in a book of this sort that the public reap the advantage of the experience of one who is both a grower and lover of trees, and who at the same time knows them well botanically. This book is a fitting record of the finest collections of trees formed in Europe in our own day, and which we hope, notwithstanding the unkindness of recent winters, may long continue one of the garden honours of La Belle France.

**A Dictionary of Quotations from the English Poets.**†—This is a new edition for the public, of an excellent book formerly published by Mr. H. G. Bohn for private circulation, and which had become very rare. The veteran author, who to his many acquisitions adds that of an enthusiastic and successful gardener, is among our most remarkable examples of men who far beyond the allotted age of man do excellent work. The quiet and charm of his richly stored garden may perhaps account in part for such a green old age. The book is admitted to be exceedingly well done and far above the level of similar books.

\* *Plaintes d'un Horticulteur sur la triste situation de la Section de Culture au Muséum d'Histoire naturelle. Saint-Germain-en-Laye*: D. Bardin.

† George Bell & Sons, York Street, Covent Garden, W.C.

**Catalogue of Potatoes.**—*Essai d'un Catalogue méthodique et synonymique des principales variétés de Pommes de Terre*, par Henri Vilmorin.—This is a most interesting catalogue of Potatoes by M. Henri Vilmorin, who has paid as much attention to them as to many other classes of vegetables.

## THE KITCHEN GARDEN.

### OLD KITCHEN GARDENS.

ATTACHED to some of our old English mansions one frequently finds a genuine old-fashioned kitchen garden—one that still retains traces of the time when the kitchen garden was a mixture of what now constitutes several distinct phases of gardening, for now-a-days not only is the flower garden quite distinct from the kitchen garden, but the fruit garden is every year, as it should be, getting more isolated from the vegetable quarters. Each class of subjects requires special treatment, and they can be better grown, both as to quantity and quality, separate than mixed. The orchard full of standard trees, still a reality, is only going back to the good old plan in days when fruit was plentiful. But the fruit garden as distinct from the kitchen garden is a modern idea, as yet only partially carried out, while the separating vegetables into field and garden crops sets free enclosed kitchen gardens for the larger demands now generally made on them for choice vegetables and salads. The flower garden, too, is rapidly divesting itself of formal squares and straight lines. The brilliant flowering plants occupy one portion, stately foliage or sub-tropical groups another, and dwarf or carpet plants another; and although it may be long before perfection is reached in the arrangement or grouping of plants, yet one cannot but admit that gardening both in its ornamental and useful branches has made good progress during the past twenty years. Turning to the still existing examples of our old English gardens, one must, however, admit that they were well designed to meet the end in view. In many cases the kitchen garden did duty for the flower garden, fruit garden, and its various offshoots, such as the Pinetum. And in houses Orchids were grown with Pines, and stove plants under the shade of Vines, yet by unwearied perseverance good crops were produced, notwithstanding defective heating, ventilating, and other details on which success or failure often rests. In these old-fashioned gardens aged fruit trees leant in all directions; there were old knotted espaliers and glorious wreaths of Roses or Honeysuckle that found a support on their stems, while by the sides of walks were huge masses of Thyme, Parsley, or other herbs alternated with flowers, either pleasant to the eye or grateful on account of their perfume, but now the tendency of the times is all against ancient gardens, however interesting they may be.

Linton.

J. G.

**Laxton's Alpha Pea.**—This is an excellent variety for main early or second early crops, a profuse bearer, and one that, if sown in the end of February or March, will not be much behind those raised under glass, or even those sown the previous autumn. Among the many good Peas Mr. Laxton has sent out, Alpha is likely to hold a first place.—J. G.

**Day's Early Sunrise Pea.**—Early Wrinkled Peas have of late years come to be greatly sought after, and although not given to trying all the latest improvements that are sent out, yet I have heard such excellent reports of Day's Early Sunrise, that I resolved to give it a trial. We sowed two rows of it on February 7, from which we have had a very fine crop, pods being plentiful from very close to the ground to the tips of the haulm, which with us is about 3 ft. high. They are very deep green, and easily recognised in the row, and from what I hear

among gardeners, Day's Early Sunrise is likely to become a very popular Pea.—J. G. L.

**Early Alpha Potato.**—At a recent meeting of our Cottage Garden Society several dishes of this very early round Potato were brought for exhibition. They had been grown in the open garden, and were considered to be equal in earliness to any kind of kidney in cultivation and more prolific; in fact, they are especially adapted for small gardens, as they make but little haulm, and are useful for filling up odd corners and sheltered places, such as the foot of a wall where a single row may be grown for a very early supply, the samples referred to being dug the third week in June from quite an exposed situation, where the haulm was cut to the ground in May by frost.—J. G.

**Applying Patent Manure to Potatoes.** A correspondent, writing from Wickham, Newbury, states that a few weeks ago it occurred to him to sprinkle almost a pound weight of Amies' Manure on the fifth row of nine rows he had planted of the Woodstock Kidney Potato. The effect produced is that of a marked increase in the strength of the plants, producing a much darker foliage and larger seed balls than on the other rows. He had previously been in the habit of using this manure in considerable quantity without being able to notice any material difference in the appearance of the foliage, or, what is of more importance, in the weight of tubers produced. This led him to think that hitherto he had done wrong in mixing the manure with the earth in the drill at the time of planting, the wet season having, in his belief, carried the manure too far down to benefit the roots. By applying it to the surface near the neck of the plants after earthing up, the rains wash it down into immediate contact with the roots, which readily avail themselves of it.—R. D.

**Veitch's Extra Early Cauliflower.**—This dwarf early Cauliflower is unquestionably a decided acquisition, coming in as it does at a time when vegetables are generally somewhat scarce. As its name implies, it is exceedingly well adapted for growing entirely under glass, being very dwarf and producing a fine head in proportion to the size of the plant in a minimum of time. But it is as an out-door vegetable that I would specially recommend it; it comes in after the latest Broccoli ends and before the earliest Cauliflowers begin. Planted side by side with the Early London and other early Cauliflowers, and treated the same in every respect, viz., sown in September, wintered in a cold frame, and planted out in deep drills in the middle of March on a border with a south aspect, we cut beautiful heads the first week in June, or nearly a fortnight before the other varieties that looked the strongest were fit to cut. In ordinary seasons the shelter of a cold pit would bring this excellent vegetable quite a fortnight sooner, so that where either Broccoli or Cauliflowers are in request the year round there need be no difficulty about the gap between the two being now filled up. There are now several excellent varieties of very late Broccoli that extend the supply to within what may be called a measurable distance of the time when Cauliflowers, by the aid of these early sorts, may be relied on to take up and carry on the supply.—JAMES GROOM.

**Sowing Parsley.**—The demand for Parsley never slackens, for although many substitutes have been tried for garnishing, there is nothing that finds so much favour as fresh green-curved Parsley, and the quantity that is used in large establishments makes its cultivation an important matter. In order to meet this demand the best way is to sow largely at once, for sowings made in June or July last for a long time before running to seed. In fact, these sowings will supply the year with care in transplanting while the plants are young to various positions where shelter or shade is available. We have a large portion of our kitchen garden edged with common bricks, and by sowing the Parsley about 6 in. inside the edging, an ornamental and at the same time use-



ful addition is made to our garden edging. In August, as soon as the plants are large enough to handle, they are thinned out to 1 ft. apart, and the thinnings are planted in cold frames where they can be efficiently protected in cold weather, and some are planted on dry sheltered banks or at the foot of walls where they can be readily protected with Fir branches. To protect the open rows, I find stout boards nailed together to make a temporary roof an excellent plan, as when snow lies heavy on them they can be cleared off and lifted carefully off, and the produce gathered without injury to the roots, such as is caused by picking it from the plants among the snow. It is a good plan to sow some in March and April for summer and autumn use, and we find single rows between young bush fruits answer well, for when frost is not to be dreaded it cannot be too vigorous or strong.

### NOTES OF THE WEEK.

**The Sturtia.**—We hear this beautiful North American shrub is in flower at Syon.

**The Spotted Calla.**—*C. albo-maculata* comes to us presumably from the open ground of the New Plant Company at Colchester, and a graceful plant it is, the flower, too, being of good form; but the fact that we have so grand a plant in the common Calla rather overweights this. We should like to see the yellow Calla well grown under various conditions.

**The Spiked Star of Bethlehem.**—*Ornithogalum pyramidale* has at flowering time such poor leaves, that by itself on a border or in a bulb garden it does not attract much attention, but that it is a beautiful plant anybody can find out who scatters a few good bulbs of it among a tuft of dwarf Roses or any other open dwarf shrub. We noticed it lately standing forth from some dwarf plants of the Ramanas Rose.

**Campanula azurea.**—Among the many Hairbells of the season this is sent to us, and very pretty it is, of the Hosti race. How beautiful the Peach-leaved Bell-flower (*C. persicifolia*) now is on the Sussex hills! We have never seen anything more lovely than tufts of this. Its aspects in London gardens are not at all comparable with what one sees in country places; the plants do not seem the same.

**The Giant Bell-flower.**—*Campanula latifolia* var. *macrantha* is the name of a very fine herbaceous plant which is now in bloom in some gardens, and also abundantly wild in the north of England, where Mr. Woodall says it attains a height of 6 ft. sometimes in copses. It is a handsome and striking plant. It is surprising it has not been used to give rise to as valuable varieties of flowers as the Canterbury Bell in its own way. As after flowering it would be somewhat unsightly in borders, the true way is to establish it in copse or shrubbery, in which its fine spikes of great blossoms would tell well.

**Plants in Flower at Farnborough Grange.**—We have here plants of *Saponaria ocyroides* and *splendens* in patches from 1 ft. to 2 ft. across, which have stood the winter on our exposed border perfectly and have flowered profusely. Poppies, too, are most showy as well as several kinds of *Campanula*, including *persicifolia* alba and the double form. We also have good patches of the Double Sweet William full of bloom. Hybrid Pinks of several kinds are likewise grand; they are most useful when in large patches. *Dianthus neglectus* and *glacialis* were good here this spring.—J. C. F.

**New Park at Halifax.**—A new park for Halifax was opened last week. It is called Shroggs Park, is on the north side of the town, and has an area of about 25 acres. The site has been generously leased to the corporation for 999 years by Mr. Henry Savile, of Rufford Abbey, at a nominal rent, and part of the expense of formation has been borne by Mr. Edward Akroyd, formerly M.P. for Halifax. The park contains large football and cricket grounds, a central pavilion, drinking and ornamental fountains, a fine waterfall, &c.

About 60,000 trees and shrubs have been planted. A drive round the park runs along the top of a rocky cliff commanding good views.

**The Rose-coloured Water Lily.**—We learn that this plant has flowered in a very satisfactory manner in the York Nurseries. The colour is said to be even finer than that shown in our plate (Vol. XV., p. 516). We endeavour to avoid exaggeration, give instructions that the plants should be drawn life size in all cases where possible, and insist on the flowers being drawn as they are and without reference to the ideals (possible and impossible, ugly or otherwise), which we find some are too ready to suggest to the artist. As the plants we have figured become known in cultivation, the faithfulness and the selection of THE GARDEN plates will be recognised, and they will be found to have a value more than was anticipated at first.

**New Strain of Violas.**—In the Stanstead Park Nurseries, Forest Hill, we saw two varieties of Viola, which indicate quite a new departure from the ordinary strains of Pansies and Violas. The flowers are quite devoid of the centre dark eye and the usual dark pencillings that radiate therefrom, so that the flowers have quite a distinct appearance, and are greatly improved, as the colours are purer. The names of these are *Hybrida alba*, which has large flowers of good form and pure white, and is, moreover, a free grower and flowerer; *Golden Queen of Spring*, similar to the last, but of a pure golden yellow, and extremely pretty. Messrs. Laing have not acquired these long, but they speak highly of them, and predict a bright future for them.

**New Yellow Water Lily** (*Nymphaea flava*).—This extremely rare North American Water Lily may now be seen in flower in the old Lily house at Kew, near the Palm house. The plant much resembles in appearance the ordinary forms of tropical water Lilies, and also in the size and form of the flowers, but the colour is a pure canary yellow, quite distinct from that of any other *Nymphaea* known. It is, we believe, even rare in its native habitats, and has not been known very long to botanists, judging by what is said respecting it in the last volume of the "Botany of California." It is said to be nearly, if not quite, hardy in our climate, and if so, it will prove a great acquisition to our aquatic plants.

**New Tropical Gingerwort** (*Cienkowskia Kirki*).—Under this not very euphonious name there is now a plant in flower in one of the stoves at Kew. It is apparently an ally of the *Curcumas*, and like them has ample broad foliage which has a handsome appearance at all seasons. The flower-spikes, which overtop the foliage, are stout and erect, and are terminated by dense clusters of flower-buds which expand two and three together. The blossom consists chiefly of a large roundish lip-like petal of a delicate pink colour, at once reminding one of *Odontoglossum vexillarium*. There is a deep orange blotch in the centre, and from it radiate several white pencillings which give the flower a pretty appearance. It was we believe, discovered by Dr. Kirk at Zanzibar, and has not been long in cultivation.

**Show of Petunias.**—A magnificent floral sight is afforded by some twelve or thirteen thousand plants of Petunias now in full beauty in Messrs. Carter & Co.'s nursery at Forest Hill. They are grown in frames and pots mainly for seed, and, thus grown, every facility is afforded for weeding out those that do not conform to the standard of excellence required. The strain is a fine one and the variety endless, but some of the most distinct and beautiful have been named, so that if particular colours are required by seed purchasers they can have them. Among the most noteworthy named sorts are *White Pearl*, pure white; *Blue Vein*, streaked and pencilled with black on a lavender ground; *Queen of Roses*, a delicate rose tint, very pretty; *Maltese Lace*, prettily netted and veined; *Japanese*, similar to the last, but larger; *Cerise Brilliant*, deep cerise. These are but a few of the varieties named. These flowers are all single, but there is likewise a fine collection of double varieties. In the adjoining

houses there is one of the most complete collection of varieties of *Coleus* we have ever met with, there being some 150 named kinds, though necessarily there are several nearly alike. Crotons may also be seen in a like variety, and the collection, though not large as regards the individual size of the plants, is a very numerous one. The new double *Bouvardia* is grown here in quantity, and some of the plants are in flower.

### LATE NOTES AND QUESTIONS.

**Scale.**—*Cheshire Gardener*.—Try Fir tree oil; it is said to be a good insecticide.

**Double Tropaeolum.**—*Ivy*.—Propagate it the same as a Verbena. It has not as yet seeded. It is best propagated from cuttings.—C.

**Vine Leaves.**—*H. S.*—Your leaves are attacked by a fungus; all affected by it had better be picked off and destroyed at once.—G. S. S.

**Gooseberry Leaf.**—*J. Forsyth*.—The Gooseberry leaves are attacked by a fungus named *Ecidium grossulariae*. Though usually very local or rare, the fungus is this season both widespread and common.—W.

**Rosa blanda.**—I have a healthy plant of this in a pot. Is it tender or hardy, creeping or not? Would being planted against a south wall suit it? and is it a good flower, single or double? I cannot find it in any Rose catalogue.—S. W. C.

**Poppies.**—Will some one tell me the best kind of scarlet Poppies (single or double) to grow for decoration (for cutting chiefly)? Also if they flower the same year from seed sown in the spring? or whether an autumn sowing is preferable?—W. H. TUCK. [*Papaver orientale* and its varieties. The best time to sow is in summer, when the plants will flower the following year.]

**Judging Kidney Beans.**—How are these judged at horticultural shows? At a show at which I exhibited last year near here the Beans that took the prize were not particularly fine looking; in fact, to the outside observer they were not nearly so fine as my own, which were long (nearly 6 in.) straight, and not at all old. Is there any standard work which gives the qualifications of prize vegetables?—C. L. H.

**Trees Decaying.**—On this estate several Lombardy Poplars are quite dead, and I see that the same thing has happened to a good number of the same sort of trees around the adjoining villages. They first began to show signs of decay last year. Our soil here in the north part of Cambridgeshire is a very heavy clay. I may mention, too, that our Pears and Plums are looking very sickly; the foliage is all turning yellow. Perhaps some of the readers of THE GARDEN might suggest something as to the cause of such disasters.—THOS. SMITH, Papworth Hall, St. Ives.

**Names of Plants.**—*H. L.*—1, *Spiraea Filipendula*; 2, *Veronica pinguifolia*; 3, *Lithospermum purpureo-ceruleum*.—*W. Powell*.—1, *Campanula muralis*; 2, *C. garganica*; 3, *Galega persica alba*; 4, *G. officinalis alba*.—*J. S.*—1, *Begonia fuchsioides*; 2, *Acacia* species. Cannot name without flowers; 3, *Polygonum bistorta*; 4, *Stellaria Holostea*.—*E. M.*—1, *Hesperis matronalis*; 2, *Achillea Millefolium rosea*; 3, *Inula macrocephala*; 4, *Hieracium aurantiacum*; 5, *Campanula persicifolia*; 6, *Xiphium vulgare*.—*R. T.*—1, *Lychnis viscaria fl.-pl.*; 2, *Dianthus deltoideus*; 3, *Silene* (species); 4, *Heliotropium peruvianum*, 5, *Alyssum montanum*.—*C. J. R. (Bristol)*.—*Tradescantia elata*.—*W. H. (Bagshot)*.—We cannot undertake to name varieties of florist's flower. Send to some specialist. *Mac.*—*Spiraea Filipendula*, *Sedum glaucum*.—*G. T.*—1, *Sedum reflexum*; 2, *S. glaucum*; 3, *S. lydium*.—*J. Dorey*.—1, next week; 2, *Oncidium crispum*.—*M. E. G.*—*Salvia Grahami*.—*C. E.*—1, *Silene inflata*; 2, *Genista tinctoria*; 3, *Helianthemum vulgare*.—*W. B.*—1, *Glechonia microphylla*; 2, *Maranta roseo-picta*; 3, *Abutilon vexillarium*.—*J. J. (Romsen)*.—An *Albica*, but we cannot name the species. *Weekly Sub.*—1, *Davallia canariensis*; 2, *Platycerium grande*; 4, *Pteris scaberula*; cannot name others without better specimens.—*W.*—*B.*—*Odontoglossum Rossi*; *Brassia verrucosa*; *Cypripedium longifolium*; apparently *Gongora portulaca*.—*R. W.*—*Bignonia Cherere*.—*T. R. S.*—*Vanda tricolor*.—*H. & Co.*—Specimen not sufficient.—*W. M.*—*Arenaria purpurascens*.—*T. P. P.*—*Aquilegia glandulosa*.—*H. M.*—Apparently an annual *Senecio*, but cannot name from withered specimen.

MR. S. M. CARSON, for some thirty years gardener at Nonsuch Park, Cheam, died on May 22 last, at his residence at Gatehouse, of Fleet, aged 67. Mr. Carson, who was one of the foremost plant growers of his day, was for a lengthened period an exhibitor at the great London shows, successfully contending in the classes of Azaleas, and stove and greenhouse plants, with such men as Green, Falconer, Hunt, and Barnes, all in their day grand plant growers. But plant culture was not his only strong point; he was an equally good gardener generally—an excellent man in all departments, and as such appreciated by his employer, who allowed him on his retirement from Nonsuch Park, in 1872, a liberal annuity.



## SOCIETIES.

## ROYAL HORTICULTURAL SOCIETY.

JUNE 28 AND 29.

THE show on this occasion was an important one, seeing that there were five distinct events embodied in one, viz., the fortnightly floral and fruit committees, the Rose show, competition for special prizes, show of the Pelargonium Society, and evening fête.

**Floral Committee.**—Messrs. Veitch exhibited a choice group of new and rare plants, which included *Globba coccinea*, *Astilbe Thunbergi*, *Amarylhis* The Siren, *Impatiens Mariana*, *Saccolabium Hendersoni*, a Bornean species, *Styrax serratum*, *Cattleya Philbrickiana*, *Phalenopsis violacea*, *sumatrana*, *rosea* *Ludde-manniana*. Messrs. Cannell and Sons, Swanley, showed the new double *Bouvardia*, the first plant exhibited in this country; also *Pelargonium* Hender's *Crimson Vesuvius*, a fine new bedding zonal variety. Messrs. Carter showed *Dianthus barbatus magnificus*. A fine dwarf double variety with crimson flowers. A fine plant of *Dendrobium* *McCarthyi* in flower was exhibited by Mr. Batten, Highfield, Bickley, who was accorded a cultural commendation. The very pretty Rose White Pet was shown by Messrs. C. Lee & Son, Royal Vineyard Nursery, Hammersmith, and these with a few Sweet Williams, *Campanulas*, and other hardy plants from Mr. R. Dean, comprised all the objects in the Council room.

**First-class Certificates** were awarded to the following:—

Messrs. Veitch & Sons, Chelsea, for —

***Sobralia xantholeuca***, a noble Orchid, very similar in habit of growth, stature, mode of flowering, form, and size of flowers to *S. macrantha*, but the colour of the flowers is a pale sulphur yellow on the sepals, while the large lip is a bright yellow.

***Phalenopsis violacea***, a new species of dwarf growth, with broad deep green leaves, and flowers  $1\frac{1}{2}$  in. across, prettily marked with deep violet-purple on the sepals and lips.

***Juncus zebrinus***.—A second-class certificate was awarded to this plant. It is similar to our native Rush in growth, but the leaves are alternately barred with green and yellowish-white, which gives it a very striking and ornamental appearance.

**Fruit Committee.**—A first-class certificate was awarded to Mr. J. Hopkins, Highcross, Framfield, for Melon *Highcross Hybrid*. It is a large, round, finely-netted fruit, with green flesh, juicy, and of an extremely fine flavour. The committee awarded the certificate on account of the flavour, and also in consequence of the hardy constitution it is said to possess. Mr. Gilbert showed a new Peach, The First Lord, a pale-skinned variety of medium size, and also a fine Melon, which was not cut by the committee. Some wonderfully fine bunches of Madresfield Court Grape were shown by Mr. Charles Lee's gardener, Croxby House, Hounslow. The bunches were large, the berries as large as Walnuts; and though scarcely ripe, showed well what this Grape is in good hands. Mr. Ross, Welford Park, Newbury, sent a large Melon, said to be a cross between Colston Bassett and Read's Scarlet Flesh, and Mr. Carmichael also sent a large fruit of Melon D. T. Fish.

Messrs. Veitch were awarded a first-class certificate for Veitch's Extra Early Forcing Cauliflower, a large-headed variety of vigorous growth said to be earlier than Early London; both were sown on February 14, and even now Early London shows no sign of heading, while the Extra Early Forcing is fit for table. Mr. Gilbert sent samples of Sutton's Marvel Lettuce from seed sown on a west border on March 1, and Mr. Miles showed another fine Lettuce named Sutton's New Mammoth Cos. Mr. Piper, Uckfield, exhibited a new Broad Bean with yellow pods, and Mr. R. Dean showed the Blue-wrinkled Marrow Pea, a dwarf sort, and apparently a heavy cropper.

## Roses.

There was a fine display of these, though the date of the show was somewhat early for the majority of the exhibitors, consequently the blooms were not so large or of such high quality as they would have been a week later. There were, however, some exceptionally fine examples in several of the collections of large size, fine form, and high colour.

**Nurserymen's Classes.**—These were uniformly well represented, both as regards numbers and quality of blooms, and were, on the whole, better than the amateurs' exhibits. The first prize in the first four classes were taken by Mr. Turner, Slough Nurseries, whose Roses seemed to be in fine condition; as a rule he is not exceptionally early, but it is evident that he possesses advantages of soil and position. His 48 trusses included splendid examples of *Niphetos*, Charles Darwin, *Senateur Vaisse*, Dr. Andry, *Exposition de Brie*, *Ferdinand de Lesseps*, *General Jacqueminot*, *Star of Waltham*, *Peach Blossom*, *John Bright*, *La Rosière*, *Camille Bernardin*, *Duke of Wellington*, *Marquise de Castellane*, *Sir Garnet Wolseley*, *Marie Baumann*, *Bessie Johnson*, *Baroness Rothschild*, *La Duchesse de Morny*. Messrs. Curtis, Sanford, & Co. were an excellent second, though their blooms were weak in some points; they had fine blooms among others of *Marie Finger*, *Madame Gabriel Luizet*, *Le Havre*, *Senateur Vaisse*, *Madame Marie Rady*, *Etienne Levet*, *La France*, *Barthélemy Joubert*, *Magna Charta*, *Abel Carrière*, *François Michelin*, *Egeria*, *Beauty of Waltham*, *Camille Bernardin*, *Exposition de Brie*, *Duchesse de Vallombrosa*, and the old *General Jacqueminot*. Mr. B. R. Cant in the third collection had some fine blooms, as did also the three other competitors.

The class for twenty-four sorts, three trusses of each, was represented by four collections. The best was also from Slough. It contained fine *Maréchal Niel*, *Mrs. H. Turner*, *Miss Hassard*, *Alfred Colomb*, *Duke of Edinburgh*, *Countess of Oxford*, *Elie Morel*, *Prince de Rohan*, *Senateur Vaisse*, *Fisher Holmes*, *Avocat Duvivier*, *Annie Laxton*, and others before mentioned. The Torquay collection was again second, and Mr. B. R. Cant third. In their stands the finest blooms were *Madame Gabriel Luizet*, *Barthélemy Joubert*, *Duke of Edinburgh*, *Beauty of Waltham*, *Madame Eugène Verdier*, *Magna Charta*, *Le Havre*, *Lord Macaulay*, *Victor Verdier*, *Constantin Fretiakoff*, *A. K. Williams*, *Pierre Guillot*, *Duke of Teck*, *Duke of Connaught*, *Duchess of Westminster*, *Jules Chrétien*. Mr. Piper, Uckfield, was third, with *May Quennel*, *Duchess of Bedford*, *A. K. Williams*, *Mrs. Laxton*, *Marie Verdy*, *Duke of Teck*. The other exhibitors were Messrs. Paul & Son, Cheshunt, who had *Catherine Soupert*, *Duchess of Bedford*, *Claude Bernard*, *Dr. Hogg*, *Duke of Teck*, *A. K. Williams*. Messrs. Curtis, Sanford & Co., Torquay, showed *Claude Bernard*, *Harrison Weir*, *Duchess of Bedford*, *Jules Chrétien*, *Souvenir de Victor Verdier*, *Souvenir de Mad. Robert*. Mr. Hawtreay showed the other collection, which included *Lord Beaconsfield*, *Charles Darwin*, *Mrs. Laxton*, *Beauty of Stapleford*, *Countess of Rosebery*, *Souvenir de Victor Verdier*.

Six Roses of any sort of Hybrid Perpetual were shown best by Messrs. Curtis, Sanford, & Co., who had fine blooms of *François Michelin*. Mr. B. R. Cant took the second with *A. K. Williams*, and *Marie Baumann* won the third. There were only three collections of six Roses of any sort of Tea or Noisette kinds. Some fine flowers of *Devoniensis* were placed first.

**Amateurs' Classes.**—Five exhibitors competed in the class for twenty-four single trusses. Mr. Ridout, Reigate, showed an uniformly fine collection for the first prize. It included, among others, splendid examples of *A. K. Williams*, *Le Havre*, *Abel Carrière*, *La France*, *Abel Grand*, *Etienne Levet*, and *Countess of Oxford*, all of which included high-class culture. The two next best collections were likewise very fine, and in them we noted grand blooms of such excellent Roses as *J. S. Mill*, *Marie Baumann*, *Duke of Edinburgh*

*Charles Darwin*, *Duchess of Bedford*, *Mons. E. Y. Teas*, and *Mad. Gabriel Luizet*. The class for twelve treble trusses was represented by five collections, all in good condition. Mr. Hollingworth again took the premier prize. Among his Roses were splendid examples of *Mons. E. Y. Teas*, *Avocat Duvivier*, *Camille Bernardin*, *Senateur Vaisse*, *Ferdinand de Lesseps*, *Mad. Gabriel Luizet*, and *La France*. In the other stands we noted fine examples of *Egeria*, *Duke of Wellington*, *Marie Cointet*, *Jules Margottin*, *Auguste Rigotard*, *Paul Néron*, *Countess of Rosebery*, *Hippolyte Jamain*, *Mrs. Baker*, and *Fisher Holmes*. Single trusses of twelve kinds were shown by seven exhibitors. Mr. Ridout was first with an excellent dozen blooms of sorts previously mentioned.

Tea or Noisette Roses, twelve single trusses, were shown by five exhibitors, the best from Mr. Pemberton, Romford. It contained *Homère*, *Belle Lyonnaise*, *Souvenir d'un Ami*, *Madame Berard*, *Madame Bravy*, *Madame Ducher*, *Bouquet d'Or*, *Maréchal Niel*, *Perle des Jardins*, *Caroline Kuster*, *Rubens*, all of excellent quality. Among the other stands were fine blooms of *Souvenir de Paul Néron*, *Madame Furtado*, *Marie Van Houtte*, *Amazone*, *Souvenir de Elise Varden*, *Safrano*, and *Souvenir de Madame Pernet*.

Six Roses of any sort of Hybrid Perpetual were shown by half-a-dozen exhibitors. *François Michelin* took the first, *Souvenir de Pierre Notting* the second, and *Pierre Notting* the third. *Paul Néron* and *Senateur Vaisse* were also shown well in this class. There was a similar number of Tea or Noisette (any sort). *Bouquet d'Or* took the first and third prizes, and *Caroline Kuster* the second. *Catherine Mermet*, *Maréchal Niel*, and *Celine Forestier* were the other sorts shown.

**New Roses of 1878 and 1879.**—This was an open class for six blooms. There were six competitors, Mr. Turner, Slough, taking the lead. His collection consisted of *Duchess of Bedford*, *Charles Darwin*, *Countess of Rosebery*, *Mrs. H. Turner*, *Paul Jamain*, *Madame Eugène Verdier*. Mr. B. R. Cant was next with *Mad. Crapelet*, *Antoine Ducher*, *Dupuy Jamain*, *Marie Van Houtte*, *François Michelin*, *Mad. Lacharme*, *Etienne Levet*, and *Mons. E. Y. Teas*.

There were six exhibitors of twenty-four single trusses. In Mr. Turner's premier collection were, besides others before noted, *Penelope Mayo*, *Xavier Olibo*, *Harrison Weir*, *Princess Beatrice*, *Charles Darwin*, all in excellent condition, and among the other stands the most noteworthy were *A. K. Williams*, *Devoniensis*, *John Hopper*, *Black Prince*, *Louis Van Houtte*, *Baroness Rothschild*, all fine exhibition sorts.

The stands of twelve single trusses were five in number. The best from Mr. Turner contained fine blooms of *Miss Hassard*, *Prince Arthur*, *Baronne de Bonstettin*, *Sir G. Wolseley* among others already mentioned, and the best flowers shown by other exhibitors of sorts not previously noted were *Edouard Morren*, *Marchioness of Exeter*, *J. S. Mill*, *Paul Jamain*, and *Mrs. Charles Wood*.

Tea or Noisette kinds were shown by three exhibitors only. Mr. Piper, Uckfield, was first, with a good collection of twelve blooms, which included *Jean Ducher*, *Catherine Mermet*, *Safrano*, *Niphetos*, *Souvenir de Paul Néron*, *Marie Van Houtte*, *Marie Guillot*, *Comtesse Riza de Parc*, *Souvenir d'un Ami*, *Celine Forestier*. In the other collection were good blooms of *Devoniensis*, *Caroline Kuster*, *Mad. Lambard*, *Comtesse de Nadaillac*, *Amazone*, *Rubens*, *Mad. Bravy*.

## Groups of Plants Arranged for Effect.

The society offered on this occasion three medals, a gold, silver gilt flora, and a silver flora, as prizes for groups of plants arranged in the most effective manner on a space of 300 square ft., to be competed for by nurserymen. Three groups were exhibited, from Messrs. Cutbush & Son, Laing & Co., and Hooper & Co., who were placed in order mentioned. The first group was boldly and effectively arranged, consisting of large Palms, Ferns, and other fine-foliaged plants mixed with flowering plants. Some large varie-



gated Maples were used with fine effect, as were also some well-flowered Heaths. The general effect was good, but one side exactly reflected the other, as it were, which gave an aspect of formality. The second group contained many large and well-grown plants, arranged more openly, and many would have preferred the style to the other, though there was rather too much colour, and not in every case blended, that somewhat detracted from the effect. The remaining group was similar to the second, but more crowded. If, too, contained many fine specimens of Palms and other fine foliaged plants, but of course this point is but of secondary consideration where an effective arrangement is desired.

#### Special Prizes.

##### Messrs. Sutton's for Vegetables.—

There was an excellent competition for the prizes, amounting to 16½ guineas in six prizes, offered by this firm for twelve kinds of vegetable, with no restriction as to sorts. There were thirteen collections shown, many of which were exceptionally fine, and none were decidedly of inferior quality. Lord Carington's gardener, Mr. G. T. Miles, took the premier prize for an extremely fine collection. It included Telegraph Peas, Leviathan Beans, Pine-apple Beet, Black-seeded Brown Cos, Cabbage Lettuce, Early Munich Turnip, Nantes Horn Carrot, Early White Naples Onion, Canadian Wonder Bean, Model Cucumber, Woodstock Kidney Potato, and Early London Cauliflower. All these productions were uniformly of high quality, and indicated very skilful culture. Mr. Haines showed the next best, which included, among others, All the Year Round Lettuce, Improved Lapstone Potato, Tender and True Cucumber, Telegraph Pea, Pine-apple Beet, Nantes Horn Carrot, Leviathan Bean, Early Munich Turnip, Canadian Wonder Bean. In Mr. Mead's third collection was made up of the kinds mentioned, except Walcheren Cauliflower, which, like the other kinds, were very fine. In the other collections were noteworthy dishes of Sutton's Ashleaf Potato, Egyptian Beet, William the First, Telephone, and Giant Marrow Peas, Giant Rocca Onion, early Snowball Cauliflower, Berkshire Champion Cucumber, Giant Marrow, Sutton's King of the Cauliflowers, and Giant Longpod Beans. It is worthy of note that nearly all of the collections were composed mainly of the sorts mentioned in the first and second collections, a proof that they are the best for exhibition purposes.

**Messrs. Carter's for Peas.**—The competition for these prizes, which amounted to about £12, was likewise excellent, and scarcely an inferior dish of Peas could be found in the whole of the 84 shown by the 21 competitors. The prizes were offered for four new Peas sent out by this firm, viz., Telegraph, Telephone, Stratagem, and Pride of the Market. All of these are wonderfully fine sorts, being large in pod and well filled, and said to be abundant croppers and of excellent eating quality. There were five prizes given, Mr. Miles, Wycombe Abbey Gardens, taking the first with extremely fine dishes, and scarcely inferior were the second and third collections; indeed, the judging of these Peas must have been an arduous task.

**Messrs. Webb's for Vegetables.**—This firm offered 10 guineas in three prizes for six kinds of vegetables, with no restriction as to special sorts. 19 collections were exhibited, all of excellent quality, and the three winning exhibits were exceptionally fine. Mr. Meads, Shrivvenham, was first with fine examples of Telegraph Peas, Canadian Wonder Beans, Suttons' Telegraph Cucumber, Improved Lapstone Kidney Potato, Nantes Horn Carrot, and White Naples Onion. Mr. Miles' second collection included fine Walcheren Cauliflower, Telephone Peas, Porter's Excelsior Potato, Model Cucumber, Early White Naples Onion. The third collection, from Mr. Haines, contained Early London Cauliflower, Telephone Peas, Nantes Horn Carrot, and Tender and True Cucumber, all very fine. Other sorts shown well were Jersey Lily Turnip, Pine-apple Beet, Kinver Mammoth Bean, William I. Pea, and Enfield Market Cabbage.

##### Messrs. Webber's for Packed Fruit.

—In order to show fruit growers and the public generally the best mode of packing fruit for market or elsewhere, so as to enable it to arrive at its destination in the best condition, Messrs. Webber offered three prizes, amounting to £10 10s., for the best three boxes of fruit, consisting of one of Grapes, not less than 14 lbs., a box of Peaches, not fewer than twenty-four, and one box of Strawberries, not less than 2 lbs. These were to be sent to the exhibition, and delivered by the railway company. For these prizes there were only four competitors, a singular fact considering the importance of the subject, especially to gardeners, though the boxes sent were sufficient to exemplify good and bad modes of packing. The first prize was awarded to Mr. Crump, gardener to the Duke of Marlborough, Blenheim. His fruit was uniformly well packed. The Grapes were packed on what is now generally known as "Coleman's system," as it originated with Mr. Coleman, of Eastnor Castle; it consists in placing the Grapes together on a firm yet elastic bed of Moss lined with tissue paper. The sides of the box are likewise padded with Moss and a lining of tissue paper, so as to firmly hold the Grapes in the box. In this way they travel unbruised and not in the least bruised, for the berries seldom, if ever, rub themselves. The Peaches were wrapped first in tissue paper and then with wadding, and placed closely on a bed of wadding. Though this is a good method, fruiterers prefer Moss also for packing Peaches, as it is more elastic, and not so likely to bruise the fruit. The Strawberries were packed in a flat box in one layer, and each fruit was wrapped in a Mulberry leaf. It ought to be mentioned too that the fruit was of high class quality, particularly the Strawberries, which consisted chiefly of President. The second prize boxes were similar to the foregoing, but wadding was used instead of moss for the Grapes. The most obvious fault of the third prize boxes was that of the Peaches being placed with little wadding or moss beneath, and the boxes being too shallow the fruits were bruised at their bases. The other competitors' boxes differed from the others in the Grapes being packed in moss surrounding each bunch, which was wrapped in tissue paper, a plan not advisable, as the paper is liable to rub off the bloom. The Peaches were in tissue paper and surrounded by bran, a good material for packing if properly employed, but the prevalent practice is to simply place it round the fruits and fill the box, consequently the train shakes down the bran to half its bulk during transit and the fruits become loose. If bran is used, it is always advisable to well shake it down and completely fill the box before closing that all chance of the fruits moving, is removed.

**Messrs. Rivers for Nectarines.**—There were only three competitors for the 2 guinea prize offered by Messrs. Rivers & Sons, Sawbridgeworth, for six fruits of Lord Napier Nectarine. Mr. Williams, Lower Eaton, Hereford, took the prize with a dish of large and highly coloured fruits.

##### General Horticultural Company's Prizes for Groups of Plants.

—Considering the high value of the six prizes (£130) offered by this Company for groups of plants arranged for effect on an area of 400 square ft., it is remarkable that there was not more competition, as there were but two groups exhibited, and these were only awarded equal third prizes. These were in the class for amateurs and gardeners, and there was not one group shown in the class for market gardeners. Mr. Rann, gardener at Handcross Park, Sussex, showed one of the groups, and Mr. Croucher, gardener at Sudbury House, Hammer-smith, showed the other. That of the former was a bold and effective arrangement of many well grown plants, consisting chiefly of Palms, Cycads, Ferns, Yuccas, Crotons, Dracenas, and other fine foliage plants interspersed copiously with flowering plants, such as Heaths, Pelargoniums, Azaleas, Roses, and similar plants. There was evidence of overcrowding, particularly in the front, or otherwise the effect was fine. The group shown

by Mr. Croucher, on the contrary, was more scattered, in fact too much so, as the bare turf was too visible everywhere. It, however, contained some wonderfully fine plants, particularly of *Odontoglossum vexillarium*, an Orchid so numerous and well-grown in Mr. Peacock's garden; one plant placed in a prominent position was an exhibition in itself, as there were several long arching spikes of blooms, representing a very fine variety. There were other fine forms of this Orchid shown, and one with exceptionally large flowers, of a deep rose, was awarded a cultural commendation. *Masdevallias*, *Oncidiums*, *Lycastes*, and other Orchids were in great variety, and were highly attractive. Among other noteworthy plants in this group were some huge Cacti, notably *Echinocactus visnago*, whose cumbrous form was a contrast to the elegant Orchids. Then there was a host of other smaller Cacti, such as *Pilocereus senilis*, also such handsome Palms as *Verschoffeltia splendida*, a fine plant. The style of arrangement of this group was decidedly original, though it did not appear to conform to the judges' idea of an effective group, and the fine specimens it contained were not, of course, taken into consideration.

#### Miscellaneous Exhibits.

Besides the long tent, which was filled with Pelargoniums, Roses, and vegetables, the large tent was well filled with plants, though to effect this Mr. Barron had to draw largely on the resources of the Chiswick garden, but had there been a better response to the valuable prizes and medals offered for groups there would not have been much room to spare. The opposite end of the tent, entering from the long tent, was occupied by an extensive group of plants from the General Horticultural Company, arranged in a tasteful and effective manner by Mr. Wills. Never have we seen Crotons or Dracenas to better advantage than in this exhibition, in which they were in groups, placed below the eye and intermingled with elegant foliage, a mode of arrangement far more effective than dotting the plants about singly. The group also consisted of huge Palms and Cycads, Pitcher plants, Orchids, Gloxinias, graceful Selaginellas, and Feathery Asparagus, all arranged most harmoniously both as regards form and colour. This fine group was deservedly awarded the large gold medal. On one of the central banks Mr. B. S. Williams had also a very choice group of plants, including Orchids and fine foliaged plants, arranged so as to be very effective. A silver-gilt medal was awarded. Another of the central mounds was taken up by an extensive display of Petunias and Coleus from Messrs. Carter & Co.'s nurseries, Forest Hill. These were interspersed with the graceful *Eulalia japonica*, which modified the otherwise flat appearance of the group. The whole had a peculiarly bright appearance, the Coleus and Petunias being arranged in checkered squares. To this fine collection a silver-gilt flora medal was awarded. A similar award was also awarded to Messrs. J. Laing & Co., Forest Hill, for a magnificent display of single and double-flowered tuberous Begonias, which represented every conceivable shade of colour yet attained in these plants. The varieties were almost innumerable, and there were besides many unnamed seedlings. Near to this collection was a fine collection of pot Roses from Messrs. Paul, Cheshunt, which though small were well flowered, and represented some very fine varieties. A silver flora medal was awarded. For a splendid display of zonal Pelargoniums Messrs. Cannell & Sons were likewise awarded a silver floral medal. These occupied a large space, and comprised the finest of the newer kinds, and a variegated variety with double pink flowers was specially noteworthy. A very fine collection of Foxgloves and Larkspurs was also shown.

Messrs. Barr and Sugden occupied a large space with their display of cut blooms of bulbous and other plants, the English and Spanish Irises being particularly fine, as were also the many kinds of Lilies. A silver flora medal was awarded. A similar recognition was accorded to Mr. Brown



Hendon, for an extensive collection of Pelargoniums in pots, chiefly market varieties. They made a brilliant display, and formed a fine contrast with the group of Maiden-hair Ferns from Messrs. Hawkins and Bennett, Twickenham, who were also awarded a silver flora medal. For a small but choice group of hardy plants and Ferns Messrs. Osborn, Fulham, took a bronze medal, and Mr. Burley, Bayswater, a silver-gilt flora medal for a large group of fine-foliated plants, while Messrs. Hooper and Co., who showed a splendid collection of cut blooms of bulbous plants, took a silver Banksian medal. Among other miscellaneous exhibits were Pelargoniums from Mr. Pearson, Chilwell, Pyrethrum and Pansies from Messrs. Kelway, also from Messrs. Downie and Laird, Edinburgh, and Mr. Hooper, Bath, and Cacti from Mr. Boller, Kensal New Town.

Outside the tents there was a large display of hothouse implements, boilers, &c., but there was nothing different from those we noticed in our report of the great show a short time ago, except a new portable garden table, made and exhibited by Mr. Wolstancroft, of Euston Road. It is the most ingenious invention of the kind we have seen, and possesses much to recommend it.

The evening fête was a great success, and the electric light had a brilliant effect on the floral exhibits. Some elegant dinner table and other floral decorations, arranged by Mr. Aldous, Gloucester Road, South Kensington, were very effective, as were those from Messrs. Pounce & Son.

#### PELARGONIUM SOCIETY.

THE annual exhibition of this Society was held conjointly at South Kensington with that of the Royal Horticultural Society, which added in no small degree to its attractiveness. The Pelargoniums were quite as numerous as on previous occasions, but the specimen plants were scarcely so fine as we have hitherto seen them. They were arranged in the long tent leading from the Council room, and fully a half of it was occupied by them. The schedule was divided into three sections, one for new varieties not in commerce, another for specimen and half-specimen plants, and a third for cut flowers.

**New Varieties.**—The section of the schedule devoted to new varieties is divided into eight classes, and these again are sub-divided into twenty-four sections. The first class is for hybrid Pelargoniums bred between any Cape species and a variety of any other type of the Pelargonium family. There was only one plant to represent the three sections. This was Mrs. J. Douglas, raised and exhibited by crossing Lothario, a scented-leaved species, with pollen from Blue Boy, large-flowered show variety. It partakes but little of Blue Boy, but is a pretty variety with scented leaves and medium-sized bright lilac flowers with a crimson-purple blotch. The greatest number of good and distinct varieties were exhibited in the class for large-flowered show varieties. The following received the society's award of a first-class certificate, viz.:—

**The Abbot** (Foster).—A variety of good habit and large truss of flowers, which are of excellent shape, with dark maroon top petals, lower petals rich reddish-crimson with darker blotch.

**Duke of Albany** (Foster).—A dwarf-habited plant, which had but one truss of three flowers on it, but these were large, of good form, with shaded maroon top petals, red on the under petals and white centre. These two were exhibited by Mr. Turner.

**Christabel** (Beck).—A splendid white variety, with a large dark blotch on the upper petals. It produces large trusses, and will be fine for exhibition.

**Britomart** (Beck).—Very dwarf and free flowering, with large trusses of well shaped flowers. Upper petals dark crimson-maroon, the lower petals being reddish-crimson.

**Superb** (Beck).—Crimson-scarlet with rich maroon top petals, edged crimson. This has also large trusses and flowers freely produced.

**Magnet** (Little) is also a really fine flower; though not very distinct from Illuminator, it is better than that variety, and as such should be extensively grown. The above four varieties were exhibited by Mr. H. Little.

In awarding the certificates, the judges were influenced quite as much by the habit of the plants as by the form and quality of the flowers. A few not certificated were really good, the variety Monarch (Foster) especially so the flowers, of the largest size, were rich dark maroon, tinged with red, and the centre or base of petals white; Florence (Foster), Chivalrous (Foster), and Letitia (Matthews), were all good and distinct.

The large-flowered decorative section contained some very good and distinct varieties. Five of them received the award of first-class certificates, viz.:—

**Mr. Ashby** (Hayes).—An abundant bloomer with large trusses, but the flowers are rather rough, though of a bright rosy red colour, white centre tinged with pink.

**Metallica** (Hayes).—Rosy red with small maroon coloured blotch.

**Annie** (Hemsley), exhibited by Mr. Little, is pale rosy red, with the petals lighter coloured towards the base, and small blotch.

**Lucie Lemoine** (Lemoine), also exhibited by Mr. Little, is really a very striking novelty; the flowers are freely produced in large trusses; they are pure white with occasionally the faintest tinge of colour in the top petals.

**Belle du Jour** (Lemoine), exhibited from the Society's gardens at Chiswick, is quite a new feature in the Pelargonium. The flowers are pure white, semi-double, and are formed of a dozen good-shaped petals. The habit of the plant is dwarf, and the flowers, instead of being produced in a mass, come more in succession.

Mr. H. Little, Mr. George, of Putney, and Mrs. Lermite (Mr. Catlin, gr.) exhibited single and double zonale varieties, but the judges did not think their productions were an advance upon those already in commerce. Mr. Little had the best varieties; Emily Little is a fine and distinct rose-coloured variety, and Venus is also good in the same class of colour.

**Section I.**—In the class for three hybrid Pelargoniums of a distinct character, bred between any Cape species, and a variety of any of the other types of the Pelargonium family, the first prize was awarded to Messrs. H. Cannell & Sons, Swanley, who had a variety with deep mauve flowers and dark green foliage. For three large-flowered (show) Pelargoniums, distinct, Mr. E. Foster, Clewer, took the first prize, with Royal Review, Zealot, and Margaret, all fine varieties and improvements on older kinds. For two large-flowered (show) Pelargoniums, distinct, the Rev. A. Matthews, Grumley, Leicester, showed in this class Russell and Eva, both superb forms. For one large-flowered (show) Pelargonium, distinct, Mr. H. Little, Uxbridge, was first with Magnet, a charming variety in the way of Illuminator, but superior to it. For three small-flowered (fancy) Pelargoniums, Mr. C. Turner, Slough, was the only exhibitor. His plants were named Sims Reeves, Florence Taylor, and Queen of the Hellenes. The other sections in this class were not represented. For three large-flowered (show type) Pelargoniums, decorative class, including Market and Regal varieties, Messrs. J. V. J. Hayes, Edmonton, took the prize in this section with Mrs. Ashby, Grand Lilas, and Ruby. For two large-flowered (show type) Pelargoniums (decorative), Mr. Henry Little, Uxbridge, had the first prize for Annie Hemsley and Aurora, both excellent sorts, and quite distinct.

**Section II.**—The specimen and half-specimen plants comprised the major part of the show. Six large-flowered kinds in 8-in. pots were shown best by Mr. Little, who had fine plants of Illuminator, Prince Leopold, Victory, Setting Sun, Magnificence, Jeannette. Mr. Turner had for the second prize grand plants of Claribel, Ambassador, Illuminator, Mabel, Venus, and Modesty. The other collection was inferior. In

the next class for eighteen of the show type in 6-in. pots Mr. Little was again first. Among others in his collection were good plants of Amethyst, Faust, Ritualist, Hermit, The Baron, Christabel, Valiant, Rosalind, Criterion, Dauntless, Emperor William, Superb, all excellent varieties for exhibition. Mr. Turner was next, and had in his collection such fine sorts as Alice, Constitution, Mountain of Light, Virgin Queen, Valiant, Maid of Perth, Claribel, all superbly flowered and otherwise well grown.

The small or fancy kinds were shown well by Messrs. Turner and Little. The six plants of the former comprised Mrs. Pope, Fanny Gair, Lady Carington, Princess Teck, Ellen Beck, and Mrs. Hart. Among the others were fine plants of The Shah, Lucy, Roi des Fantaisies, Jeannette, and Emily Little. The class for eighteen of the decorative type was represented by two collections—from Mr. Little who was first, and from Messrs. Hayes, Edmonton. In this collection, among the most remarkable sorts were Madame Thibaut, Racehorse, Reamie, Princess of Wales, Triomphe de St. Amand, Kingston Beauty, Maid of Kent, Volante, National, Nellie Hayes, Metallica, Olivette, Mad. Favart, Prince Teck, La Grand, Mermerus fortissima, Duchess of Bedford, Purple King, Decorative, Lucie Lemoine, Lady Isabel, Mrs. Ashby, Queen Victoria.

Zonal Pelargoniums were very numerous. As usual, Mr. Catlin, Finchley, showed the best nine specimen plants in 8-in. pots, and they were faultless in every respect. The were Alice Burton, Oneida, Tom Elliott, Fanny Thorpe, Mrs. Leavers, Edgar Catlin, Rev. A. Atkinson, Wm. J. Catlin, and Cymbeline. The other group was not much inferior in size, but poor in other respects. There were five collections of eighteen single zonals in 6-in. pots. The best, from Mr. Little, comprised a thoroughly representative collection, the most prominent kinds being Mr. Bennett, Master Harry, Golden Glory, North Star, Lord Mayo, Mr. Leavers, Ivanhoe, Mr. Wright, M. de Lesseps, Cleopatra, Rosa Little, Commander-in-Chief, Circulator, Mr. Leavers, all in splendid condition and marvellous examples of skilful culture.

Double zonals in 8-in. pots were well shown by three exhibitors. The nine plants from Mr. King, Wray Park, Reigate, who was first, were particularly fine, well flowered, and otherwise excellent. The sorts were F. P. Raspail, Paul Bert, Roi des Violetts, Emile de Girardin, J. Harper, Denfert Rochereau, and M. Gelein Lowagie. Mr. Catlin was next with a fine group also, his best being Lively, M. Thibaut, Pioneer, F. P. Raspail, and Gorgeous. In the class for eighteen doubles in 6-in. pots, Mr. King was again first, and a remarkably fine collection he showed. It included besides those mentioned above fine varieties of the exhibitor's raising named Mrs. Paine, Master Charlie, Thomas Harper, Richard Serpell, and Arthur Johnson; also C. Hovey, Victor Hugo, Lucie Lemoine, M. Machet, and others. Mr. Catlin's collection, too, was fine, and all consisted of leading varieties.

Ivy-leaved kinds were not very numerous, but two of the groups, those from Mr. Little and M. Lemoine, of Nancy, were good. The former had in his group of nine Gloire de Orleans, Perle, Mad. Emile Galte, M. A. Rarat, Mons. Dubus, A. F. Barron, and some unnamed varieties. In M. Lemoine's second prize group were some beautiful kinds named Dr. Broca, Astre, Annie Pfizer of the exhibitor's raising, as indeed are nearly all the hybrid Ivy-leaved varieties yet raised.

The third section of the schedule was for cut flowers, which, however, were not numerous. Mr. Turner showed the best thirty-six trusses of the show type; Messrs. Cannell the best three dozen zonals, single and double, as well as Ivy-leaved kinds. The finest thirty-six double zonals were shown by Mr. Meadmore, Romford; Ivy-leaved kinds by Mr. George, Putney; and other collections were shown by various exhibitors; and a fine collection of zonals, chiefly seedlings, was contributed by Mr. Pearson, Chilwell, Notts.

A complete list of prizes awarded at the above two shows will be found in our advertising columns.



"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare.*

### THE TUBEROSE RIVALLED.

THE Tuberose will be hard to beat. It cannot, however, be said to be an elegant plant; it is too lanky and too top-heavy for that; but for its perfume, it stands pre-eminent. Although its culture is difficult and doubtful, who has not tried his "prentice hand" with these unsightly tubers, hoping to win in the end a few spikes to reward him with that delightful fragrance which no other flower possesses? Well, we will not try to beat the Tuberose, but only give it a companion as lovely as itself, with a fragrance nearly as good, with delightful snow-white flowers in abundance, which open at night—night after night the same flower without wearying—and which any one and every one can grow. *Nicotiana affinis* is the name of our new heroine. Shall we call it an annual? Perhaps so, as it blooms the first year and does well out of doors, but taken care of as a pot plant through the winter, it develops into a splendid specimen for summer blooming. I exhibited one at the evening fête at the Regent's Park, and those who saw it there will bear me out in my eulogistic description of this lovely flower. I have some seed, and any one sending a directed envelope is welcome to a pinch while it lasts.

W. H. CULLINGFORD.

*Phillimore Gardens, Kensington, W.*

### GARDEN PARTIES FOR GARDENERS.

THE giving of a garden party to his gardener and gardening friends by Canon Hole suggests how delightful it would be if the gardeners' party were to become general. No men are better benefited by change and by observation on the spot—by seeing as much good work out of their own place as possible than gardeners. The conditions of gardening vary so much, and the number of subjects and departments into which the art is now divided are so great, that it is impossible in any one place, however well managed or large, to see many of them well done. Soil, climate, tastes, skill, position, means—all vary; in fact, to be a good or intelligent gardener a constant amount of observation out of one's own field, so to say, is a necessity. Such a party as our friend is about to give is, of course, the pleasantest means of bringing gardening people together. At shows the conditions under which the things are grown are not seen; the plants even are not always seen. How the Grape, or the Rose, or the Orchid is managed cannot be told. We only see the result, often with an amount of inconvenience and excitement which prevent our benefiting by it. The design of a garden, the beauty of a garden from a landscape point of view, its noblest ornaments—the trees—and, in fact, the manifold charms that make up a beautiful garden of any kind, can only be understood on the spot. Sometimes at our shows rumour says there is an accommodating interchange of products, and that somehow the things shown come sometimes from other gardens than those with which they were credited. There can scarcely be a more happy idea than the gardeners' party.

*Spiræa arifolia*.—It would be hard to find at the present time a more graceful object than a fine bush of this *Spiræa*, bearing as it does

spikes of white flowers in great profusion. All the *Spiræas* delight in a cool holding soil, and where so situated, and standing singly, this species forms a large bush, the outline of which, though regular, is very graceful.—H. P.

### NOTES FROM DUBLIN.

OF all the Lilies *L. Kramerii* is just now the most beautiful in pots, and also in the open border. It is a singularly deceptive kind in some respects when one compares the size of the bulb with that of the blossom, but it is perfectly hardy here, and not at all the delicate plant which its small bulbs and low stature would lead one to suppose it to be. Bulbs of it, the size of a Hazel Nut, give each a lovely soft pink blossom on the apex of a 4 to 6-leaved stem 1 ft. or so in height. A good sound bulb the size of a Walnut produces a stem nearly a yard in height, bearing from three to five flowers. *L. croceum*, *L. Thunbergianum*, and *L. Szovitzianum* are all now in flower, and I am hoping to see *L. auratum* in quantity. Some stems of it are now 6 ft. in height with ten or twelve buds on each leafy wand. The scarlet *L. pomponium*, *L. Martagon*, and its pure white form are also now in flower.

Primroses generally are past blooming, but that little gem of all the British species, *P. scotica*, is now in full beauty for the second time this year, and singularly enough the blossoms are larger and brighter in colour than when it first bloomed six weeks ago. Our plants were seedlings of last year which were pricked off singly into 2½-in. pots when large enough to handle, the pots being afterwards plunged to the rims in a bed of coal ashes in a position from which the mid-day sun is screened by a large Holly bush. I think the secret of their luxuriant growth and bloom is mainly due to their having rooted through the bottoms of the pots and into the ashes and soil below, as the pots have never been removed since they were plunged a year ago. Another, and the only other, Primrose now in flower is the true old *P. cortusoides*, last year's seedlings of which have been growing and blooming ever since last April. Scarcely two seedlings are alike in colour, and a bed of them in a moist place is a pretty sight all through the summer months.

Of Californian bulbs, which have been and still are lovely, the *Brodias* are deserving of note. *B. coccinea* and *B. congesta* have bloomed well in the open border, while in pots *B. grandiflora* and *Triteleia laxa* have been very satisfactory. These last were sent by Mr. Bull along with bulbs of the Butterfly Tulips, *Calochortus luteus*, *Cyclobothra pulchella*, and that gem of Californian bulbs—the Mariposa Lily (*Calochortus venustus*). Planted in pots of sandy soil, and placed on a sunny shelf in a cool greenhouse, these have been so pleasing that we hope never to be again without them.

A graceful plant for the cool Orchid house, or cold frame even, is *Theropogon pallidus*. In habit of growth it strongly resembles *Cymbidium eburneum*, the flowers reminding one of those of the Lily of the Valley magnified in size, and of a delicate rosy shade of colour. The resemblance to the Valley Lily is still more striking in its perfume. In all ways it is a beautiful plant.

*Canna floribunda* is a brilliant variety well worth a place as a distinct and effective flowering plant. It grows from 2 ft. to 3 ft. in height, each leafy stem bearing a dozen or more vivid

crimson-scarlet flowers in a cluster at its apex. It is so distinct and effective as to deserve a place wherever such plants are desired. It was sent to me by Messrs. Rodger, McClelland, of Newry, and well deserves the good character which Mr. T. Smith gave to it when he introduced it to our collection.

*Cerinthe major*, a Boragewort, somewhat resembling *Onosma taurica* in shape of flower, but having far more ample leafage, is now flowering very freely here. Seeds sown in March have produced bushes nearly 2 ft. high, and fully as much or more in diameter; the stems clothed with broad, glaucous, purple-stained leaves, and terminated by pale yellow tube-shaped flowers, the lower half of the tube being stained with dark brown colour, give to the flowers a most singular appearance.

One of the first of Roses to bloom here with us was the Japanese *Rosa rugosa*. This flowered in May and June, and having set a crop of its singularly large fruits, it is again showing flower at the extremity of all its newly-made young growths. Even if this species never flowered it would still be well worth a place for the sake of its beautiful foliage, which is quite distinct from that of other wild Roses. The pure white variety of this plant is unfortunately as rare as it is beautiful. Mr. Ware, from whom I obtained my plants, told me that he had raised seedlings of the white variety by the hundred, but when they bloomed they were all rosy as in the type.

The black-spotted *Papaver umbrosum* is now all ablaze on a sunny border near where I am writing, and as on this 4th day of July here, in Dublin, we have a wind blowing strong and hot, like a sirocco, its blossoms wave, oat, and dance about like so many gorgeous butterflies. Of all Poppies it is one of the most distinct and handsome. Of other Poppies now in bloom, the yellow *P. nudicaule* and the lovely little *P. alpinum* are deserving of notice. The latter is especially dwarf and lovely, its blossoms varying from pure white through all shades of buff and orange, until a tint nearly pure scarlet is reached. *Meconopsis nepalensis*, 4 ft. in height, has nearly finished flowering, having now been in bloom more or less over six weeks, and being thus early and strong also, it promises us a fine crop of fresh seeds. *M. Wallichii* is now in bloom for the first time here, and its lovely pale blue flowers are very welcome.

Now that there is a great desire to have plants of distinct and handsome port for purposes of room and dinner-table decoration, allow me to say a word in favour of Riviere's *Arad* (*Amorphophallus Rivieri*), a hardy native of Cochlin China, for those uses. A single tuber planted in a 6-in. pot throws up a cylindrical green stem mottled with rose to a height of 18 in., and bear its neatly-cut leaflets spread abroad like an umbrella on the top. It is most unique and graceful in habit, and is one of the few plants that may be placed directly opposite to one on the table and yet not annoy by obstructing the view. For cool house or conservatory decoration it is very useful, and tubers of it which have withstood the past winter without protection of any kind are now pushing up a strong crown each from the open borders.

When writing of *Vanda teres* in my "Orchid Notes" a week or two ago, I said one of our plants bore six flowers on a spike. The fact is the spike to which I referred really bears at this moment seven flowers, six of which are



fresh and fully expanded, while the first blossom which opened its eye a month or more ago, is fading. It would be interesting to know the highest number of flowers ever borne on a single spike of *Vanda teres*, which is, as I think, one of the most distinct and lovely of all Vandas, if we always except *V. cœrulea*, the queen of the section to which it belongs.

That was a very interesting series of notes which Mr. Brockbank gave us in last week's GARDEN about the Bellflowers. We have here *C. persicifolia*, single and double, in three or four forms, but not the light blue, or Cambridge variety, so far as I at present know. *C. pulla*, *C. rhomboidalis*, and *C. Hosti alba* are all lovely just now; so also a dense cushion or two of *C. Portenschlagiana* from Miss C. M. Owen's garden at Knockmullen, Gorey. The notice of *C. Raineri* given by Mr. Brockbank is slightly puzzling to me. He doubts its being really distinct from *C. turbinata*. Now, in this old garden are carpet-like clumps of *C. turbinata* in variety 3 ft. or more across, while of *C. Raineri*, planted side by side with it, I can scarcely "report progress." Here, with us, the slugs have a most voracious appetite for *C. Raineri* (leaving *C. turbinata* untouched), so that we protect it with Mr. G. F. Wilson's perforated zinc slug guards. The finest of all the Bellflowers with us later in the year is *C. pyramidalis*, dark blue, light blue, mauve, and white. It is perfectly hardy, forming masses in open borders 6 ft. in height, and is then very beautiful with Sunflowers, Hollyhocks, Dahlias, and large-growing Hemp and Maize.

I am afraid Mr. T. Williams is a little aside in his shot at my "distinct and rare" plant. It is a Composite plant, and therefore very remotely connected with the Heartsease or Pansy group. [Mr. Williams wrote Tansy, misprinted Pansy.—Ed.] My plant is a very distinct and lovely kind of *Alecost* or *Costmary* with golden flower heads (of disk florets only) the size of a crown-piece when large or of a florin when small. Again, I am afraid I must ask if this same showy plant which is grown here is *Balsamita grandiflora*.

After all that has been said and written of alpine plants, and the difficulties of growing them in the lowlands, one of them, and that long thought to be one of the rarest and most uncultivable—I mean the Edelweiss—seems to me pretty robust and hardy in its younger stages. About two months ago a lady brought me some of its woolly, Anemone-like seeds, which I at once rubbed up in a handful or two of dry sand, in order to separate them thoroughly, and then I spread sand and seeds in a thin layer on the surface of a well drained seed-pan, giving a slight surfacing of sandy earth over all. Now the seedlings are strong and healthy after having been in a cold frame for about six weeks, and the pan is in full sunshine. My rule is to put all woolly-leaved seedlings and all of a succulent nature thus fully exposed to the sun, and I rarely lose them through "damping off," the common fate of such seedlings or cuttings if placed in the shade. Before I pot-off my little plants, I want some one who has successfully grown the Edelweiss to tell me the best soil to use, i.e., whether calcareous or peaty, or pure loam and sand?

F. W. B.

**Flower Gum.** In THE GARDEN, p. 223, Vol. III., Mr. Howard gives a recipe for making the gum or cement which florists use to stick the flowers of *Pelargoniums* together and keep them

from falling. I gave this mode of making it to a florist friend of mine, but he tells me that neither he nor the chemist, to whom he has given the recipe to make up, can cause the shellac to dissolve thoroughly. Is there anything more to be known about it?—X.

### THE DELL, EGHAM.

NEAR the Bishopsgate entrance to the Great Park at Windsor is the charming residence of Baron Schröder, surrounded by one of the most admirably kept gardens that it has been our good fortune to see for a long time. No place could possibly have a better site, as one of the principal fronts of the house immediately overlooks the royal park, which at this part, as, indeed, in almost every other, is studded with magnificent trees—Oaks, Beeches, Elms, and various others—all of which combine to produce a matchless example of park scenery. The Dell is separated from the royal demesne by an ornamented palisade supporting a gravelled terrace close under the windows of the house, and the herds of deer rove amidst the thicket of Bracken quite to the boundary wall. Directly facing the Baron's residence, at about two or three miles distant, is Windsor Castle, of which an uninterrupted view can be obtained from the terrace, as the trees form an open glade straight away until the tops of those on the lower ground are overlooked. Whether this opening was effected by design or otherwise, we could not ascertain; but, be that as it may, it forms one of the most beautiful pieces of landscape that could be imagined. The natural contour of the surface of this part of the park is considerably undulated, and there is a steep declivity with rising ground to the right and left immediately below the terrace wall, so as to form quite a dell, and from this circumstance no doubt the appellation of "The Dell" was taken.

At the other side of the house, on the contrary, the surface is almost a dead level—in striking contrast to that we have just described, but it has been laid out very appropriately, and embodies a wonderful variety of tree and shrub growth of an ornamental character. The principal features of the garden are Rhododendrons, of which there exists one of the finest collections in the country, consisting as it does of every variety of any merit that has yet been sent out. This garden, like that of Mr. McIntosh noticed a short time since, might fairly be called a garden of Rhododendrons, though here they do not form such an exclusive feature, for there is besides them a thoroughly representative collection of

**Conifers.**—Of these there are grand examples of *Cupressus Lawsoniana*, one of which is among the finest in the country. Deodars are also very fine, and one, with a silvery hue to the foliage, is remarkable and highly ornamental, forming a distinctive aspect from its whitish feathered foliage, so much so, that it deserves a varietal name, and to be largely propagated. The true *Abies (Picea) amabilis*, an extremely ornamental species, is represented by a handsome specimen, though unfortunately it has lost its leader. This is one of the few existing examples of this rare Conifer in this country, though the name is often applied to spurious kinds. The true plant is one that ought to be in every garden, for there are few more elegant trees grown. Other Conifers of fine growth are *Wellingtonia*, *Douglas Pine*, *Nordmann's Spruce*, various *Cupressuses*, *Junipers*, and a host of others too numerous to mention. The majority of these are placed in groups on the lawn that skirts either side of the carriage drive, and interspersed with fine

specimens of Hollies, together with the ponderous old Oaks that tower above, and other evergreen shrubs in great variety, have a fine effect, far more appropriate than bedding out plants, which in nine cases out of ten would have been in such a position.

**Rhododendrons.**—The soil here seems naturally adapted for the fine growth of these shrubs, for they certainly acquire a growth seen but in comparatively few places. The beds are large, irregular, and grouped in an informal manner about the broad lawn in front of the house. Some of the beds are smaller than others; these are intended to be occupied by particular varieties. The Baron is an enthusiastic lover of plants, but particularly of Rhododendrons, and therefore nothing is spared in order to render the collection of them as complete as possible. The varieties are, of course, too numerous to particularise a tithe of them, so we will confine our remarks to a few of the newest and the most remarkable of the others. The majority of the new kinds have been raised in the famous nursery grounds of Mr. John Waterer at Bagshot, some few miles distant. Among the finest is one named Baron Schröder, a distinct variety with large trusses of finely-shaped flowers of a rich deep plum colour with a yellowish centre. Another lovely sort is named Baroness Schröder, a variety having a white centre margined with the brightest rosy-pink. These are honoured with separate beds, and seen *en masse* have an extremely fine effect. Duchess of Connaught is one of the grandest of the light varieties, the truss being exceptionally large and the blooms of fine form and substance. Kate Waterer, figured in THE GARDEN, Vol. XVI., page 308, is one of the most beautiful and distinct of all, the colour, a deep rosy-pink, is set off by a conspicuous yellow blotch on the upper petals. Madame Carvalho, The Queen, Mrs. Tom Agnew are the best of the white kinds. W. E. Gladstone has a deep rosy tint and bears a splendid truss of remarkably large flowers; it also possesses a fine habit of growth. B. W. Currie in the way of Alarm is a very fine kind, and Lady Tankerville also, with a pale centre, is unsurpassable in its particular shade of colour. Princess Mary of Cambridge is a strong grower and very pretty, the colour being rosy-purple, with a light centre. Mr. Charles Leaf has a light centre also, and Duchess of Bedford in a similar way produces a grand truss of flowers. Among the finest of the other kinds that would form a thoroughly representative collection we might mention Quadroona, bright rose; Joseph Whitworth dark purple; Mrs. Russell Sturgis, rose with light centre; Papilionaceum, a fine light variety; Earl Shannon; Duleep Singh, a beautiful dark sort; Sidney Herbert, crimson; Lady Godiva, white with yellow spots; Butlerianum, fine white; Helen Waterer, a grand variety, white margined with bright rose; James Mason, John Walter, Warrior, Mrs. J. Penn, Lady Eleanor Cathcart, Countess of Clancarty, Lady Olive Guinness, Crown Prince, very fine; Mrs. Arthur Walter, Mrs. R. S. Holford, and the varieties of Roseum. These were all in flower in the second week in June, but the earlier kinds were past, and later ones even not then in their best condition.

**Plant and Fruit Houses.**—The whole of the glass erections here have been built comparatively recently and on the most approved system. They form a compact group easily accessible one from the other, and the whole is heated by Stevens' Trentham boilers, so arranged that they may be detached and worked separately, or combined so as to give the full heating power. The Vineries and Peach houses are well stocked, the former with a good selection of the best kinds, including Madresfield



Court, Gros Colmar, Duke of Buccleuch, and Alnwick Seedling, which succeeds here better than in some places. Among the Peaches, Rivers' Early Beatrice is grown, and Mr. Ballantine entertains a high opinion of it on account of its earliness, as the fruits are no sooner stoned than they begin rapidly to ripen. The crop was gathered three weeks previous to our visit, about the middle of June. The culture of Strawberries in pots, Tomatoes, Cucumbers, and Pines is, of course, provided for on a similarly large scale. The favourite Melons here are Jemmit's Hybrid, a finely-netted, red-fleshed sort of local reputation, Dell's Hybrid, and Blenheim Orange, the latter a new kind so highly spoken of lately. The true form of Telegraph Cucumber and Sir Charles Napier Strawberry likewise find favour here.

The plant houses contain a rich collection of ornamental foliaged and flowering plants, the latter comprising those most serviceable for cutting purposes, for which there is a great demand. Among the latter we observed some plants of the new Continental varieties of *Imantophyllum* miniatum that have lately been so much talked of. Martha and Marie Reimers are two of the finest, their flowers being far superior, in point of size and colour, to those of the original. There are others that have not yet flowered which, no doubt, will turn out to be good. Some of the ornamental foliaged plants are exceptionally fine, particularly the Anthuriums, such as A. Veitchi and A. Warocqueanum. One plant of the former is the largest we have ever seen; some of its leaves measure considerably over 3ft. in length and broad in proportion. A. Warocqueanum is not so large, though it promises to grow to a large size soon. The Crotons, Palms, Cycads, Dracenas, Ferns are also represented by very fine plants, and the climbers overhead and the drooping plants in baskets all combine to render the houses attractive. The delicately cut and exquisitely coloured foliage of the Japanese Maples are used with extremely fine effect in the greenhouse mixed with other plants.

**Orchids.**—Though an Orchid collection here is a comparatively recent innovation, it already bids fair to become one of the most important in the country for its formation, is carried on with that enthusiasm which can only be the outcome of a true love of the plants for their own sake.

Although as yet it is not of great extent it comprises such rarities as a couple of *Cypripedium Stonei* platytanum, lately acquired and thriving finely, and *Cattleya Mendelli* superbissima, a splendid variety in flower at the time of our visit. Of this Orchid we hope shortly to give a coloured illustration. Other rare kinds in flower were *Saccolabium Turneri*, said to be one of the only three in the country, *Aerides crassifolium*, *Vanda Batemani*, *Lælia purpurata Williamsi*, alba, and several other splendid varieties, *Cattleya Warneri* superba, and many others. The Orchid houses form wings jutting from the loftier main range, and are low pitched and otherwise well adapted for the successful growth of Orchids. We noticed that under the stages Mr. Ballantine places layers of broken coke, which is found to give off evaporation better than any other material known to him, and besides it has a cleanly appearance.

W. GOLDRING.

**American Crops.**—Apples, a fair crop for the "off" year; Pears, a good crop; Peaches, a comparative failure. Small crops in Delaware, Maryland, and the Michigan Peach Belt. Small fruits abundant. Potatoes, an average crop in stand

and acreage. Beetles never more numerous. All crops two to three weeks late.—*Rural New Yorker*.

## EDITOR'S TABLE.

**Reeves's Spiræa.**—A neat double white bush kind of elegant foliage and habit. It kept well in the hot days when other cut flowers mostly perished quickly. From Mr. Stevens.

**The Columbia Lily.**—A deep glossy orange Lily, with clear spotting of black-brown and a pleasant fruity scent. A native of Oregon and Washington Territories, and a pretty Lily.

**The Double White Champion** comes from Mr. E. Jenkins, of Birmingham, with flowers, each over 2 in. across. It is one of our best old border flowers. *Lychnis vespertina* fl.-pl. may help those who do not know it by its English name.

**Mrs. James Helme**, the name of a very pretty *Delphinium*, a seedling raised at the Tottenham Nurseries, is remarkable on account of its very slender, unbroken spikes, all rising near each other and giving the notion of a rain of blue.

**The Cape Crinum** comes in flower from Llandegai, "from a border among Belladonnas, Tritonias, and the like." It seems to be valuable over a large extent of country, and evidently does not always require the warmest places. We never noticed it better than with Mr. Ross, at Highclere, on the Hampshire hills.

**The Arabian Star of Bethlehem.**—The flowers of this plant bloom bravely and persistently in a room long after they are cut, showing well the polished black centres of the white blossoms. They have a pleasant odour. The kind of treatment which this *Ornithogalum* requires is elsewhere spoken of.

**The Clove Pink.**—This is a very pretty purplish rose and vigorous Pink with a good Clove scent. It is as well worth growing as a Clove Carnation. There is a good deal of it at the Tottenham Nurseries, where we were pleased to see Pinks of all kinds in fine free flowering condition. A charming plant for cutting.

**The Hardy Bletia** (*B. hyacinthina* var. *japonica*).—Mr. Barnaart, of Vogelenzang, near Haarlem, informs us that this interesting and graceful Orchid has come through all the recent trials with him, and grows and blooms well in the open air, but best in peaty, somewhat sheltered spots.

**The Double Purple Rocket.**—The best heads of this good old flower we have seen for a long time come from Mr. Betteridge. In nurseries generally it is seen in a starved state. The label bears the name *Hesperis matronalis compacta rubra*, a name which must be a comfort to some of our readers.

**Violas Free from Marking.**—A pretty group of Pansies, which are most delicate, and which give a softer and yet more definite effect in group or masses than the variegated kinds. The colours are the palest cream, light golden-yellow, and deep cream colour. From Messrs. Dicksons & Co., Waterloo Place, Edinburgh.

**Astrantia major.**—When this old inhabitant of botanic gardens and curious collections came to us from Mr. Betteridge, we wondered why he grew it; but a large loose tuft by itself in a jar and near the eye becomes most interesting, and, closely examined, beautiful. It is worth a place on a hedge-bank or a bye nook in a shrubbery.

**The Immortelle Plant** (*Gnaphalium arenarium*).—This comes from various gardens of late, and it is a pretty plant well placed on a dry, raised border or rocky bank, allowed to form a free-spreading tuft. On wet borders and clay soils it is a poor thing, or perishes. The pretty little bright yellow flowers are worth gathering when fresh. This is the plant, grown so exceedingly well abroad, used for forming wreaths. It keeps in good condition a wonderful time when cut,

**Canterbury Bells.**—As the "swells" and beauties of the season pass, we should not forget old friends, and there is nothing more pleasant than to see a batch of this grand old plant well grown. The advent of Vilmorin's pink kind is a great addition to the older forms, but some of the distorted doubles would be no great loss.

**Dwarf Pinks.**—A very interesting race of Pinks, double, and so dwarf and sturdy in habit, that they support their numerous flowers without tying up. We hope Messrs. Dicksons, of Waterloo Place, who send us these, will persevere in this direction, and get the greatest variety of colour and all other desirable qualities in this strain of one of our oldest and best flowers.

**The White Martagon Lily.**—Mr. Edwin Jackson speaks of the fine effect now of masses of this plant, a fact worth noting in the case of all who study picturesque gardening, as the Martagon grows so freely in any open wood or copse. Its odour being so powerful would be another reason for such a position for it. Some of his spikes bear twenty and twenty-two flowers.

**Button-hole Lilies.**—Under this name have come two pretty dwarf Lilies, *L. concolor* and *L. coridion*, one a bright cheery red, with faint spots in the throat, the other yellow, with brown cloudings and spots. Both are now in flower in the New Plant Company's Gardens, Colchester, and both are pretty hardy things, useful when well grown and well placed.

**Lilies** bloom so long, or for so long a period, that we can scarcely speak of a Lily-tide as one does of Lilac or Azalea-tide, but perhaps they are most abundant and most glorious during the present month. One of the handsomest is Brown's Lily, just opened, fine in form and remarkable in colour. Hanson's Lily, which was figured in THE GARDEN, is also in bloom. Both come to us from the New Plant Company, Colchester.

**Milla laxa.**—Two forms of this fine purple-flowered bulbous plant, one a very dark and large form, come to us. We are getting much richer than we have hitherto been in blue-flowering bulbous plants of an ornamental and hardy character. This plant is called *Brodiaea* in the "Californian Botany." It has several names, but changing them is so awkward that we shall use the above name for it.

**The Siberian Lungwort** (*Mertensia sibirica*).—This beautiful and graceful novelty among hardy flowers comes to us from Mr. Betteridge, of Chipping Norton. It was figured in THE GARDEN last year, but it is difficult for a figure to give an idea of its qualities when well and freely grown. It reminds one of the old Virginian Lungwort, but has the merit of being easily grown in an ordinary border, and of flowering a long time.

**The Grey Speedwell** (*Veronica neglecta*).—This, frequently used for edgings and bedding, and therefore pinched, is a distinct and singularly pretty plant in many districts when well grown, the violet-purple of the flowers and buds look so well rising from the silvery leaves and Lavender-like spikes. It is a charming rock or border flower, and its merits as such have been overlooked owing to the use of the plant for the silvery colour of its leaves.

**The Freshest Flowers** that come to us seem to come from Mr. Edwin Jackson's little garden at Llandegai, near Bangor. The air of hill and moist districts favours out-door flower life greatly, and the fact should show the line to follow in many a place. His flowers also remind us of how many lovely plants a man with taste and wisdom can cultivate with his own hand in spare hours. His flowers of the golden-veined *Spiræa japonica* are the best we have met with of that usually poor thing as seen in London gardens.

**Phlox The Queen.**—This fine white Phlox comes from Mr. Betteridge, of the Aster Nurseries, Chipping Norton, who has gone into the growth of hardy flowers with some spirit. In a modest



preface to his list he regrets his limited knowledge of them; but, notwithstanding, he grows them uncommonly well, and sends us many handsome bunches of summer flowers. We should like to see similar collections established in various parts of the country. The rule in such should be, throw away the weedy or poor types, and give the purchaser good strong plants of things worth growing.

**Single Pinks.**—The taste for single flowers we have happily seen revived in many cases lately, and to-day we have received a charming bunch of single Pinks from Messrs. Dicksons and Co., Edinburgh, who, we hope, will persevere in the cultivation of this most welcome addition to our gardens. The flowers have a fine deep carmine centre, fringed with white, some being laced again on the margin. A good race of these, and if possible, so sturdy as to support their flowers well, would be welcome and useful. Even these first fruits, so to say, are brighter in colour than the double kinds near them. But we want both.

**A Beautiful Alstroemeria.**—Miss Rose Kingsley, whose notes in past years' volumes may be remembered, sends us from Tachbrook, Leamington, a bright and novel flower, which she says grows in abundance in an old Warwickshire garden. It has grown there for the last 30 years, and is now a beautiful object under an east wall. On some of the heads I have counted 40, 48, 50, and 59 blooms. These plants, save the orange one (*A. aurantiaca*), do not seem to become established in our gardens, and therefore we have pleasure in recording one that has been so well proven. Its name, according to Mr. Barr, is *A. Pelegrina rosea*.

**The Iberian Coronilla.**—This is a brave little hardy plant that makes a glorious show if let alone. As to these Alpine flowers, which have so often been crushed in between pieces of rubbish and stuck in dry walls or banks, people have yet to learn what noble colour they afford. Put nine or ten plants of this on a ledge or bank or flat in the rock garden with plenty of good soil beneath it (say, not less than 18 in.); let it alone for a year or two, and wait for the result; then compare it some summer morning with the *Calceolaria* or other yellow flowers that happen to be near, and are grown for their colour alone.

**Variegated Trees.**—"Out of evil comes often good." Mr. Charles Lee good-humouredly sends us a rare batch of variegated trees from his richly stored tree nursery, as a comment on our frank remarks concerning variegated trees in a recent issue. Conversions of this sort are very agreeable. He says the trees are better as they grow older. We trust it may be so. We looked upon them long with a kindly eye, and only repeated disappointments have made us doubtful. Among the variegated shrubs and trees sent are the following: The Silver-edged *Cornus*, Golden Cut-leaved Elder, \*Golden Oak, \*Purple-leaved Filbert, Variegated Turkey Oak, \*Variegated Field Maple, \*Golden Acacia, Broad-leaved Variegated Field Elm, \*Purple-leaved Peach, Rosseel's Golden Elm, Golden Elder, King Leopold's Maple, Variegated Scarlet Dogwood, Elegant Golden *Cornus*, and the Variegated *Althæa*. Those marked thus \* seem to us the most valuable of the series.

**Three Stars of Bethlehem.**—*Ornithogalum arabicum*, a very singular plant, not without beauty, comes to us fairly well grown from Colchester. Its position is a little indefinite, owing to being somewhat tender, though some say it is hardy enough. The polished black centres in the ivory-white flowers give to it a striking character, and we wish it were more grown than it is, but *O. pyramidale* is the hardiest and the most effective as a garden plant. About the same time as both the little *Narbonne Star of Bethlehem* (*O. narbonense*) comes in, an elegant diminutive of the preceding. Well placed, all three are good plants. Mr. Horsman writes of the Arabian kind as follows: It is delightfully fragrant, not altogether easy to flower, but if a little pains are taken to give the bulbs a good roasting after flowering, they will amply repay the extra trouble

by flowering the following year. I would proceed as follows: take up the bulbs in the middle of July, dry them in full sun, and let them remain out in the sun until September; when it rains take them in or cover them. Keep them in a dry hot spot until March, then plant them.

## THE LIBRARY.

### THE ENGLISH FLOWER GARDEN.\*

THOSE who have read Mr. Bright's gardening experiences, as told in "A Year in a Lancashire Garden," will welcome another work from the same graceful pen, written "with a twofold object, to give in the smallest compass an outline history of English gardens, and to show once again what makes the true charm and happiness of a garden." With the large tolerance of a man who "may have preferences, but has no exclusions," Mr. Bright can find much to admire in gardens of the most different types, and has a genuine appreciation of the stately old English garden with its clipped Yews and formal avenues, such as he describes at Leven's Hall, in Westmoreland; but he is too genuine a lover of flowers in all their varying moods and idiosyncrasies not to enter his protest once more against the abuse of the bedding-out and ribbon-border system, and the further degradation of carpet-bedding. "That a carpet should imitate a flower-bed is one thing. Years ago Mrs. Browning wrote of some carpets where your foot

Dips deep in velvet Roses.

This may be well enough; but who wants flower beds to look like carpets? They may strike you at first as being ingenious and even pretty, but the feeling is at once followed by a sense of their essential debasement as regards gardening. The most stupid follies of the old gardens were graceful and sensible compared to this. It is less childish to trim a Yew-tree into a peacock than to arrange your Sedums and *Alternantheras* to look like animals on a badly-woven carpet. Nor has the absurdity even the merit of being original. It is really an old French invention, and about the time of Henri IV. the gardens at Fontainebleau and Chantilly were known for their quaint devices in flowers, their ships, armorial bearings, and cyphers interlaced." Mr. Bright then tells us with ever-growing enthusiasm what a garden ought to be—such as Milton pictured it with

Flowers worthy of Paradise, which not nice art  
In beds and curious knots, but Nature boon  
Pour'd forth profuse on hill, and dale, and plain—

and points out in how many directions we might enrich our borders, our shrubberies, and our lawns with fresh accessions of colour, form, and fragrance. He feels the sympathy of a practical gardener for a gardener's difficulties: "The weeds that worry, and the seeds that fail, the wireworms that attack the roots, and the slugs that breakfast upon the tender leaves, the moles, the birds, and the caterpillars that have each and all their peculiar plans for vexing the gardener's heart;" and yet he feels that "It is fortunate that gardening should be always more or less of a struggle, for the very struggle, as should always happen, has the element of pleasure about it." The notes contain much pleasant chat, botanical, literary, and artistic, which will help us to appreciate Mr. Bright's parting words: "We must learn to look on plants, not as mere points of colour, but as old friends, on whose coming we can rely, and who, returning with the recurring seasons, bring back with them pleasant memories of past years."

**The Wild Garden** in its illustrated form is now ready, and may be had at our office or through the booksellers. There are ninety-four illustrations, drawn and engraved in a manner not usual in works of its class, and the book is nearly rewritten. The illustrations are all from Nature,

\* "The English Flower Garden," with illustrative notes, by Henry A. Bright. Macmillan & Co., 1881.

and have all been specially prepared for the work.

### BOOKS RECEIVED.

*A Winter in Madeira.* By Henry Gordon Lennox, M.P.  
*Catalogue of Orchids Grown.* By Erastus Conning Esq., Albany, New York.

*New Commercial Plants and Drugs.* By Thos. Christy, F.L.S.

*Essai d'un Catalogue Méthodique et Synonymique des principales variétés de Pommes de Terre.* By Henri Vilmorin, Paris.

*Arboretum Segrezianum.* Part 2, by Alphonse Lavallée  
*Album Van Eeden, or Flora of Haarden.* By A. C. Van Eeden.

### BEGONIAS AT STANSTEAD NURSERY.

THE name of Laing has so long been identified with the improvement and popularising of tuberous Begonias, that it seems almost unnecessary to mention that the growth and propagation of this beautiful class of plants constitute the chief feature of this nursery. Several span-roofed houses are filled to overflowing with an innumerable quantity of finely-grown specimens, representing nearly every variety that has yet been raised in this or any other country. The list of named sorts nearly amounts to 200, including double-flowered kinds. As we have so frequently alluded to the finest of the older kinds, we only intend in the present notice to give descriptive notes of such new sorts as have been brought under our notice. Amongst single kinds the most prominent are the following: *Lady Scudamore Stanhope*, a variety with unusually large and finely-draped flowers of a deep carmine-rose, borne plentifully on plants of a robust and compact habit of growth; *General Roberts*, fine in habit, and with flowers of a pleasing lilac tint and of roundish shape; *Alba floribunda*, remarkable for its extreme floriferousness; the blooms are pure white and medium size; on account of its free growth and other good qualities this is, we consider, a fine acquisition. Purity is another white variety, and as the flowers usually have six petals instead of four, it is showy. *Mrs. Robert Whyte* is a novelty of high merit on account of its rich crimson flowers shaded with rose, borne profusely on compact growing plants. In *Annie Laing* we have a charming variety, remarkable for its large deep rosy-pink blooms and healthy growth of foliage. *Mrs. Highgate* reminds one of *Lady Hume Campbell*, but it is much more copiously suffused with red than that variety. *General Wood*, like its compeer *General Roberts*, is a fine addition as regards colour, as the deep rich crimson, overlaid with a velvety facing, is an uncommon tint in these plants, and is in striking though charming contrast to the delicate tinted sorts. *Rose d'Amour* is very floriferous, and the colour, a beautiful rose, is very fine. The finest of all, so far as we have yet seen, remains to be noticed; it is named *Consul Darlington*, and is decidedly the climax in respect to size that has yet been attained. It measures 5 in. in length and  $4\frac{1}{2}$  in. in breadth. Its colour, which is a vivid scarlet vermillion, is quite dazzling in strong light. It belongs to Stanstead Rival group, raised a year or two ago, and which was at the time considered to be the acme of perfection in point of size, shape, and colour. The habit of growth is robust, the branches stout and not too long jointed, and the flowers, considering their size, produced in abundance. This latter is but one of an enormous quantity of seedlings raised here, many of which, on account of their superiority over older kinds, will receive distinctive names. We had nearly overlooked two exquisite new varieties of small growth that have originated from the *Davisi* type, a dwarf-growing species with very deep crimson flowers. They are appropriately named



General Mite and Commodore Foot. The General has rich orange-red flowers, the Commodore blossoms of a deep crimson; both are brilliant and highly attractive, free as regards growth and production of bloom.

Double-flowered varieties are of course not so numerous as the single kinds, but some good strides have also been made in their improvement, the most striking being that of the fine double form of B. Davis, named *superba*, which undoubtedly is the finest yet raised as regards size, symmetry of form, and brilliant colour. It is named *superba* in contradistinction to the ordinary double form of Davis, which is likewise in commerce. Wherever *superba* has been exhibited it has unanimously received unqualified praise, and certificates of merit have likewise been awarded it. There is likewise an orange-tinted double-flowered form of B. Davis named *lutea*, said to be very fine, but we have not met with it in good condition. Other new double kinds are Mons. Carrière of the *Pæoniæ-flora* type of flower, and of a fine red colour. Mons. Drouet is of the Bouchet or cut-petalled type, and of a violet-rose tint. Bernice is a deep crimson with very large flowers. Marie Diot is a beautiful rose with a light centre, while one called Adam de Craponne is distinct in tint, as there being in it a decided suffusion of mauve. Other beautiful double kinds in flower were Clovis, Dinah Felix, Gloire de Nancy, William Robinson, Marie Bouchet, Mons. Malet, and Comtesse de Choiseul.

The houses in which the principal specimen plants are grown are span-roofed structures nearly 100 ft. in length. Some of the finest plants consisted of Lady Hume Campbell (some 4 ft. through), Massange de Louvrex (still one of the best), Mrs. Laing (a lovely pure white sort), J. W. Farrand, Stanstead Rival, Paul Masurel, Maude Churchill, Hon. Mrs. Albert Brassey, J. T. Laing, and many others.

The pits and frames adjoining teem with seedlings and propagated plants, and the beds in the open air are well stocked with fine plants, while in another part there is a plot consisting of nearly 10,000 small plants.

A recent addition to this nursery is another establishment a few hundred yards distant known as the Vineyard. The glass structures, four in number and span-roofed, are well built; they are 150 ft. in length and 18 ft. in width. One of these is exclusively devoted to Tea Roses, principally *Niphetos*, for cutting purposes; these are planted out on either side of the central pathway. Another, the largest house, divided into four compartments, is devoted solely to Vines, the sorts being Alicante, Black Hamburgh, Madresfield Court, Lady Downes, Muscats, Foster's and Alnwick Seedling. The latter is evidently the bad-seeding variety of this Vine, for every bunch has failed to set satisfactorily. The Vines are some three years old, and will be soon in their best bearing condition, and even now there are some exceptionally fine bunches, which, no doubt, will reach the exhibition table this autumn. W. G.

**Labels at Kew.**—The old cast iron labels long in use at Kew were excellent. They might have perhaps been improved a little in shape, but they were far before any complicated or costly label. They were also as easily written on as any label could be. The new delf label fixed on to an iron socket is not by any means so good as the old label, while it is more expensive, and disjointed so to say. We observe some of them tied to the iron stem with wires already. They are also much more glaring than the old label. In fact, painted black or brown, not white, and with white lettering, with a coat of copal varnish over the lettering, the old cast iron labels are the best

that could be had for a botanic garden. The larger size of the cast iron labels was an excellent label for a shrub or any large plant in the open ground.

### NOTES OF THE WEEK.

**Cistus florentinus.**—This forms compact evergreen little bushes from 9 in. to 18 in. in height, and bears a profusion of snow-white flowers about half as large as those of the Japanese Anemone. Examples of it may now be seen in the York Nurseries.

**The Tuberose Out all Winter.**—A plant of this has remained on the rock garden in the Tottenham Nurseries throughout the past severe winter. Planting the fresh roots out in spring to flower in the open air has been practised for some time, but we have not seen the plant survive the winter out-of-doors before.

**A Daughter of Anne Boleyn.**—We are glad to receive from Messrs. Dicksons & Co., of Edinburgh, a seedling of the favourite old Pink Anne Boleyn. The flowers are large, massive, and the outer petals of a delicate peach colour, marked with deep crimson towards the base. The inner petals, which are much curved, are cream coloured and deep crimson.

**The Sweet Brier in Bloom.**—One of the pleasantest sights we have seen for a long time is a large bush of the common Sweet Brier in flower in Mr. Edwin Chadwick's garden at East Sheen. The large finely coloured flowers fairly surprised us. It may be a large variety. A more picturesque object we have never seen—long shoots boldly thrown out, and bearing plenty of large deep rosy cups.

**The Red Valerian and its Forms.**—Three varieties of this come to us from Mr. Betteridge—the white, the deep red, and the common form. The white and the deep red are worth growing, as a variation from the ordinary form. They are good plants for adorning walls, rough rocks, old bridges, or banks. They will grow anywhere where a Snapdragon or a Wall-flower will grow.

**The Jerusalem Sage (Phlomis).**—The old *P. fruticosa* is a very distinct and pleasing shrub plant, often ill-placed and ill-grown, and therefore not cared for, but fully exposed on a warm bank or among a group of rocks it is excellent, or on a border with good soil. There is something very pleasing in the form of the whorls of flowers and graceful foliage of the shoots of a healthy plant.

**The Variegated Jacob's Ladder.**—*Polemonium coeruleum* in its variegated form comes to us strong and full of flowers from Chipping Norton. It is the white variety that is thus variegated. It is so often pinched to make it suit as an edging plant, that it is seldom seen in flower. We do not remember if the blue kind occurs among the variegated forms.

**The Double Red Sweet William.**—Beds of this at Mr. Ware's lately have looked like sheets of velvet. It is a capital sturdy little plant, very hardy, and very easily increased. Tufts of it pull in pieces easily, and form good plants soon. When established in congenial soil the tufts last two or three years. It is dwarf enough for a rock garden.

**The Mountain Cornflower (Centaurea montana).**—This old neglected plant never seemed to be worth a place. It is now, however, coming into the market as cut flowers, and being larger than the Cornflower they seem to meet a want. There is a good blue with a purple centre and a whitish kind, both of which are sent us by Mr. Betteridge. The plant grows in any soil and might be easily naturalised.

**Californian Lilies.**—The stately Californian Lilies are now very fine at Mr. Ware's. One can give no idea of the fine form and growth of *Lilium pardalinum* and its forms. The secret of good

culture is found to be good depth of decomposing vegetable soil, manure, leaf-mould, &c. What our Lily people are doing now would very much astonish those who only knew the few Lilies dwindling here and there in gardens some years ago. They are a new revelation of the beauty of the plant world.

**Lilium canadense.**—I have been much surprised to find this Lily in Mr. Charles Van Geert's garden, at Antwerp, 4 ft. high, in full sun, without the slightest shade, except a few low growing shrubs around the base of the stem, and much finer than I have ever seen the flowers in England. Golden *Spergula* (*S. pilifera aurea*) carpets the ground in this dry spot.—F. H.

**A New Allium.**—Mr. Horsman, now in Belgium, informs us that he has seen in Mr. Vanderswaenen's nursery, at Gendbrugge, a plant in flower of what appears to be a species of Allium. The whole plant is like a Yucca or a Doryanthes with very broad leaves. The flower stem is 6 ft. in height and bears a head of flowers round as a cricket ball and 9 in. across. The colour is a lavender-purple. This wonderfully striking plant has been introduced from Bokhara.

MR. SCALING, of Basford, Notts, informs us, to our regret, that he is leaving Basford and giving up Osier growing in England. The interference with the employment of cheap labour (women and children) has made the cultivation of Osiers impossible. We are no longer able to compete with foreign produce, and as a consequence the 7000 or 8000 acres of wet or undrainable land in England will become pestilential swamps, seeing that the greater part now under Osier crops cannot be used for ordinary farming purposes.

**Flowers at Heatherbank.**—Some *Calceolus* planted on a warm bank in February, 1880, at Oakwood, Wisley, have bloomed well, as has also *Spiraea palmata*, which is richer in colour than usual. The latter is on a damp border. *Kniphofia glaucescens* has stood the last winter, and has bloomed well in our cottage garden. A friend gave me two blooms of *Eurotia eximia*, very beautiful. Surely this plant should be more grown than it is. *Lilium krameri* has bloomed very well in the Rhododendron beds. We have a flower of *L. auratum* in the orchard house 12 in. across.—GEORGE F. WILSON.

**New Rosaceous Plant (Fallugia paradoxa).**—This is one of the most remarkable plants we have met with for a long time, so distinct is it from any other with which we are acquainted. The stems are slender and erect, furnished with numerous small and deeply-cut leaves. Each stem is terminated by a pure white flower about 1½ in. across, and similar in form to those of *Rubus deliciosus*, but expanding more fully. It is now in flower in Mr. Joad's garden at Oakfield, Wimbledon Park, where it is growing in a cold house with other doubtfully hardy plants.

**Meat and Fruit.**—"Excessive meat eating," says Sir Henry Thompson, "is undoubtedly a prolific cause of disease, such as gout, rheumatism, and their allies." The *Dietetic Reformer* quotes the above with approval, but does not state another of Sir Henry Thompson's experiences—i.e., that Strawberries are the worst things he knows of for the production of lithic acid in the blood. The vegetarians do not seem to be aware that some things they recommend are as fraught with danger as the butcher's shop. The products that seem safe and wholesome all round are the cereals, green vegetables, and the fruits having a low percentage of sugar, as the Apple and the Peach.

**Dwarf Profuse-blooming Pinks.**—It gave me great pleasure one day last week to see in the nursery of Messrs. Dicksons & Co., at Pilrig Park, Edinburgh, a fine collection of the above, consisting of bushy dwarf plants covered with beautiful sweet-smelling flowers in great profusion. I was informed that this new class of dwarf Pinks would grow and flower well in any ordinary garden flower border with a little care or



attention, and that the plants produced an abundance of flowers for cutting. I saw also some fine pure white and rich crimson Mule Pinks, of which there were several beds containing a number of varieties. Messrs. Dicksons have a good collection of alpine plants in their nursery. G. M., *Berwick-shire*.

#### Agave Parryi and Yucca Peacocki.

—In our report of the last meeting of the floral committee at South Kensington we omitted to mention that these two plants, exhibited by Mr. Croucher, gardener to Mr. Peacock, Sudbury House, Hammersmith, received first-class certificates. As they have previously been described in our columns, it is unnecessary to allude to them further than to say that they are both very handsome plants.

**Good Fruit.**—We are pleased to record that Mr. Wildsmith, who is among our best flower-gardeners, won the important fruiterers prize for taking the largest number of prizes for Fruit at the Royal Botanic show on Wednesday last. Mr. Coleman took the first prize for the best collection of fruit. No man has done so more frequently or thoroughly, and yet we hear, unobserving persons say they never knew writers on gardening who were good cultivators. The very qualities which go to make a good grower are those which go to form the best writers.

**Bellflowers.**—"Brockhurst's" remarks on these stirred me up to send you some. They are, unluckily, for the most part going off. *C. persicifolia alba* is gone, but I have the last bloom of *C. peregrina alba*, which Mr. Ellacombe gave me some years ago; it has been very beautiful. I fear *C. barbata* will not reach you in good order; it is a beautiful plant, and I hope soon to have plenty of seed for any of your readers who care to ask for it; but I do not think the flowers are like those of our English *C. rotundifolia*. The handsomest of all is *C. latifolia*. Those of your London readers who want to see it 6 ft. high need not go to Yorkshire; it is quite as good in the wonderful garden at Chislehurst. "Brockhurst" ought to make the acquaintance of *C. glomerata alba*, not uncommon in Switzerland.—G. H. W. MARTIN, 21, College Road, Clifton, Bristol.

**Idesia polycarpa in Flower.** A good sized specimen of this handsome Japanese shrub is now in flower in Messrs. Cutbush & Son's nursery at Highgate, where it is growing out-of-doors on one of the slopes of this picturesque nursery. The flowers, though not attractive, are sweetly scented; they are greenish in colour, with a tuft of yellow stamens, and they are produced in clusters on the ends of the branches. It seems somewhat remarkable that such a handsome shrub or small tree as this should not have become better known, for it is so distinct on account of its bold spreading habit of growth, large foliage, and deep red leaf stalks. In the specimen at Kew, which is larger than that here noticed, its characteristic habit of growth is better shown than in the Highgate plant.

**Dipladenias in Flower.**—These climbing plants, among the loveliest occupants of the stove, are now a great attraction in Mr. B. S. Williams' nursery, Upper Holloway, where they are grown extensively both as specimen and young stock plants. The colour of all their flowers partakes of a more or less rosy-pink hue of various shades, and all are large and funnel shaped. The most beautiful kinds in flower are Brearleyana, a lovely hybrid of a rich rosy-crimson hue, and free both in growth and flower; *D. amabilis*, one of the finest of all, the flowers are not so large as the last, but they are produced very plentifully; the colour is a pleasing rosy-carmine. The new *D. profusa*, now being distributed, is also a most beautiful plant, remarkable for its extreme floriferousness and the high colour of the flowers, which remain long in perfection. It also possesses the qualities of a fine exhibition plant, and flowers freely even in a small state. Other fine sorts, either in a flowering or a bud stage, are *D. insignis*, *Williamsi*, *crassinoda*, *hybrida*, *ornata*, *splendens*, *regina*, and the pretty

and distinct *D. boliviensis*, all of which are among the most valuable plants we have for the adornment of a stove.

**Vine-leaved Passion-flower** (*Passiflora vitifolia*).—Undoubtedly the most brilliant of all the cultivated Passion flowers, and the most valuable one for a stove, is this species, known also as *P. Buchanani*. The ample foliage and larger blossoms of the brightest vermillion, combined with the graceful profusion with which they are borne, render it one of the most beautiful objects imaginable. A large plant of it now adorns the roof of a stove in Mr. Joad's garden at Oakfield, Wimbledon Park, where it has been beautifully in flower for some time past. Another fine Passion-flower (*Tacsonia insignis*) is likewise finely in flower in a cool house. It has large, deep carmine blossoms that hang plentifully on slender stalks. The leaves are large, deep green above and brownish below, and both sides are prominently wrinkled—more so than in any other species.

**Lagerstroemia indica.**—In the Royal Botanic Gardens a fine example of this beautiful Chinese shrub is now in full flower; the beautiful rosy pink of the clusters of fringed petals has a beautiful effect when seen in a mass. The plant



is about 8 ft. in height and is growing in the warm compartment of the large conservatory.

#### CROPS AND THE DROUGHT.

**Peas.**—The continued draught has told severely on the Pea crop, and small will be the profits made by it this year. We hear the pickers complaining strongly as to the poor returns they get for their labour, especially when the first gathering has been taken off. There was enough of moisture in the soil to render the first blooms fertile but all the later ones seem to have gone blind, and thus when one picking is taken off there are indeed few pods left, and those small. What has been so profitless in the small podded white kinds has been to the pickers somewhat made up "supremes" as these are larger though not of full average size this year. Sometimes not more than 1s. 6d. per day has been earned; at others 4s. per day may be made by an active woman, but that chance does not often occur. The growers regard the present season's produce as not exceeding half a crop. The price is not materially above the average, because the pinch has not been felt. In a week or two, Peas must be dear and their season short.

**Potatoes.**—There has been a marked improvement in the general appearance of the Potato plants since I last referred to them. Greater heat and partial rains have helped them greatly, though still there are vacancies caused by the dry condition of the soil earlier. In spite of the warmth, however, the tubers are yet small, and it will be only on highly manured land that digging can commence early with profit. It may be that for once highly manured land will be favoured, for when such is the case there is more moisture in the soil than in poor land, but on the other hand the extra strong growth will the sooner exhaust it. The danger to be feared now from a soaking rainfall is that the unwonted moisture allied to the heat of the soil will stimulate an excessive top growth that will result in the event of disease

in special harm to the crop. On the other hand, if we get no good ground rains, the breadths that just now look so well, especially of the later and more robust growing kinds, will give out during the heat of the ensuing month, and the tuber crop will be small. Under no circumstances do I think we shall get anything like so large a crop as we had last year; but then that was an unusually good Potato year.

**Winter Greens.**—The Onion maggot, or one identical in its operations, has largely attacked the giant autumn Cauliflowers, and many plants have been killed, the root bark being quite eaten off. All kinds of winter plants are being got out under very adverse conditions, and on many acres of land watering is out of the question. When put out, of course the plants are long in recovering, and as a consequence club may be looked for. In a dry soil, however loose, dibbling is difficult, if not hard work, and the running in to the plant holes of the hard, dry lumps of earth before the plant is set does not at all help it to root quickly. Running a light roller over the surface prevents this to some extent, but it cannot be wholly avoided. The rains we are now getting will, however, prove beneficial.

**Bush Fruits.**—The Gooseberry crop has been a fairly good one, and has realised good prices; green fruits have fetched about 6s. per bushel. There would appear to be less left to ripen this year than usual, but the bushes will benefit by the lightening of the crop. Black Currants are very fine, though many bushes on dry soils fail to swell out on the entire bunch. Red Currants are generally heavy, and when the bushes are hard pruned the fruit is very fine. One of the best of ground fruits is the Raspberry, for that is fruiting most abundantly, and though it travels badly it always secures a good return. Bush fruits will this year prove a substantial aid to many growers, and help to recoup losses amongst vegetable crops.

**Onions.**—The maggot is sadly troubling growers of Onions everywhere this year. No doubt the drought has helped it, and hatched eggs that heavy rains would have destroyed. Then through the want of moisture, growth has been slow and left the young plants much at the mercy of the maggots. What is noteworthy is that no one seems able to check their progress; soot used lavishly is of little use, and yet it is the strongest dressing that can be used with safety. No doubt the soot is not very efficacious because it needs moisture to liberate its salts and other compounds which maggots dislike. Not only will the crop be a moderate one, but the bulbs will be small. A large grower of pickling Onions said that a breadth which in an ordinary season, was too thin to stand for picklers and would have to be left for market bulbs, would this year, owing to the drought, just do. A thick plant would have been entirely spoilt from lack of moisture. Seed bulbs this year have not broken so strong as usual, and afford but a poor shelter to the ridge Cucumbers growing between the lines. Thus the seed crop, a poor one last year and the preceding one, may still be light unless a good rain soon comes. A hot dry season may favour a few things, but as a rule it injures the majority of garden vegetables.

#### THE NEW ENGLAND MAYFLOWER. (EPIGEA REPENS).

I wandered lonely where the Pine trees made  
Against the bitter east their barricade,

And guided by the sweet  
Perfume I found, within a narrow dell,  
Amid dry Moss and dead leaves at my feet,  
The trailing spring flower, tinted like a shell!

And bending o'er it not irreverent  
I thought of lives thus lowly clogged and pent

Which yet found room,  
Through daily cumberings of deep decay and deaf,  
To give to heaven the sweetness of their breath,  
And to the earth the beauty of their bloom

JOHN G. WHITTIER,



## TREES AND SHRUBS.

## THE ANDROMEDAS.

AMONG the Ericaceæ we have several classes of plants that differ but slightly from each other in their distinctive characters, viz.: *Andromeda*, *Lyonia*, *Leucothoe*, *Pieris*, and *Zenobia*, the whole of which are now generally included under

*A. polifolia* (the Wild Rosemary or Marsh *Andromeda*).—A common plant in moist peaty places throughout the northern countries of Europe and even in America. It forms a dwarf shrub of about 1 ft. in height, and bears during summer pale red blossoms. Of this there are great numbers of varieties, varying more or less from the species

striking and distinct variety, viz., *A. pulverulenta*, in which the leaves, especially on the under sides, are thickly clothed with a white powder, and the flowers are larger and opener than that of the type, there being about the same difference between the two as between the Dutch and German Lilies of the Valley. This is just now in many places in full flower.

*A. Mariana*.—A deciduous species about 2 ft. high and one which thrives in a drier situation than many of the others.

*A. paniculata*.—This is also deciduous; it grows from 4 ft. to 5 ft. in height, and, like the preceding, the flower-bearing branches are almost destitute of leaves, a peculiarity well shown in the accompanying figure. Both the above are common North American species, and flower during the summer months.

*A. racemosa*.—This has pale green Willow-like leaves, but the young wood and the pedicels of the flowers are of a light red colour; the flowers are white, slightly tinged with pink and very sweet scented. This very desirable kind is just now in full flower.

*A. calyculata*.—A pretty white-flowered evergreen under shrub of about the same height as the preceding, and, like it, a native of both Europe and America. It flowers in April and May; when in blossom is very attractive. Of this there are two or three varieties, one more robust and another dwarfer than the type.

*A. floribunda*.—With this most people are acquainted. It certainly forms a beautiful bush in April, May, and June when clothed with its pure white blossoms, which are freely produced on the end of every shoot, affording a pleasing contrast with the deep green, glossy foliage. It has been long introduced, but it is only of late years that it has become so common, being found to thrive well in ordinary soil if not too dry.

*A. formosa*.—This is a strong-growing evergreen species with dark-coloured leathery leaves and whitish flowers. In the west of England it is perfectly hardy, and is there a handsome shrub. Being a native of Nepal, it is rather tender, for although it has stood out-of-doors in some places around London for several years without injury, in others it has been killed.

The names of a great many *Andromedas* may be met with in various works, but the above may be taken as a good and distinct selection.

ALPHA.

## ALDERS FOR THE LAWN.

UNFORTUNATELY for the beauty of our lawns, we continue to neglect, without sufficient cause, entire genera of hardy and attractive trees and shrubs. Positively our lawns are poverty-stricken, comparatively because we fail to use a really vast store of lawn-planting material ready at hand. Note, for instance, these very Alders to which I desire to direct attention. Here is a whole genus of choice and valuable trees and shrubs having a great fitness for many purposes of lawn-planting. How have they fared in the way of application? One or two varieties have made some noise in the world, but generally nurserymen sell very few, considering their intrinsic value. Though fitted for most places, they like to dwell in moist ground on the margins of pools and streams, where their bright green foliage contrasts well with the white and grey-green of the taller Birches. Alders are sometimes trees, but oftener shrubs. They mass well on outer boundaries as windbreaks, or as foils for the beauty of other trees. Some species and varieties are suited only for such



*Andromeda paniculata*.

the one genus *Andromeda*, and are for the most part low-growing, free-flowering shrubs, and, being natives of moist peaty districts, are adapted for cultivation in the American garden, although some of the kinds succeed well in ordinary soil if somewhat moist, for they are all very impatient of drought. The following are the principal species:—

in habit, leaves, or flowers. These, like the type, all flourish best in a moist peaty soil.

*A. speciosa*.—This, also known as *Zenobia speciosa*, is one of the prettiest of the family, its flowers being freely produced, and larger than those of the Lily of the Valley to which they bear considerable resemblance. Of this species, which grows about 3 ft. or 4 ft. high, there is a



masses, while others merit distinguished isolated positions. As usual, the plebeian kinds preponderate.

Most distinguished, if not best, is the Cut-leaved Imperial Alder, *Alnus glutinosa* (or *imperialis*) *laciniata*, the charms of which have almost received their due need of attention, considering that near relatives have been so neglected. It is unquestionably an elegant tree; cut-leaved, vigorous and refined in contour, and of good size withal. Many soils suit it admirably, especially in the interior of the country; but in sandy, dry soil it often loses its lustre of foliage during summer. *A. glutinosa* (the common European Alder) is not specially superior on the lawn to our common American Alder (*A. serrulata*). Some of its varieties are very beautiful, notably *A. glutinosa aurea*. Like many golden and variegated varieties, the Golden Alder has not, in all cases, proved as enduring, summer and winter, as its parent. The *A. glutinosa* also presents other peculiar forms, such as the distinct Oak-leaved and Thorn-leaved kinds (*A. glutinosa quercifolia* and *A. glutinosa oxycanthæfolia*). I will only say of these kinds that they are worthy of their distinguished connections. The Japanese Alders are specially fine, with tree-like habit, conspicuous fruit, and rich, shining green foliage, retained late in autumn. Among Alders they are hardly to be surpassed as ornamental subjects.

Up to this point, all kinds of Alders mentioned have been conspicuous for distinct ornamental qualities, fitted to distinguish them in isolated positions on the lawn. I would not rank them as high, ornamentally considered, as their relatives the Birches, but they form, nevertheless, lawn-planting material of excellent quality. Japanese Alders illustrate conspicuously the close likeness to each other borne by many Eastern Asian and American plants. For instance, in Japan and along the Amoor River we hear of *Alnus incana hirsuta* and an *A. viridis* almost identical with our own species of the same names. Passing to the more common, though equally worthy kinds, we come to the mountain Alder (*A. viridis*), a somewhat inconspicuous species; the common American Alder (*A. serrulata*), and the Speckled Alder (*A. incana*), all, be it noted, American species. The effect of these varieties of Alder in mass (as they should be) on the lawn is not notably different, one from another, from a lawn-planting stand-point. One, *A. incana*, has the most distinct greyish spots on the reddish brown or bottle-green stems and leaves, which are never downy, but specially shining. Another, *A. serrulata*, is perhaps the best, because the most generally successful under all conditions. This species, on the other hand, has downy young leaves and foliage noticeable for blunt or rounded points. Other species have usually acute leaves. One variety of *A. incana*, called *glauca*, is more blue on the under side of the leaf than others. There are also dwarf varieties of *incana* and other species. *Alnus cordifolia*, common in Italy and the south of France, is hardy, but in the character of a lawn plant it does not differ remarkably from other Alders.

All Alders have alike grey, curious-looking bark, and for the most part shining green foliage, and at least in two cases—that one great charm of Alders—golden purple tassels 2 in. or 3 in. long. These are warmed into life by the earliest breath of spring, and present special charms amid the yet dormant foliage of that season. They were formed in the autumn, and seem only to await a prolonged breath from the south to hang out their small banners as a glad harbinger of settled spring. Later on the flowers appear, but these in several species are inconspicuous. Early spring is the hey-day of

the Alder's beauty. Alders should be used in quantities along the banks of streams and pools, where their vigorous roots help to retain solid land in spots most liable to slip. How ornamental, too, the low waving green foliage of Alders thus situated, as their course follows that of the stream through long stretches of green and level meadow!

In connection with Alders, I should like to say a word about certain species of Winterberries or black Alders, *Prinos verticillata*, *P. lævigata*, &c. Properly classified, they are Hollies; but, never mind, they look like Alders and are unfairly neglected—two qualities which give them an equal claim with the Alders on our attention. *P. verticillata* is a handsome shrub, usually 6 ft. to 8 ft. high, with thickly crowded branches and shining leaves, which are acute at both ends, and the wood of growths of different ages passes from bright green to pearl green, and so into still darker tints. It is a clean, thrifty, shining shrub, doing well in upland, but still better in moist spots. Its crowning beauty, however, is its crop of orange-scarlet berries, retained throughout the autumn quite into winter. Numerous white flowers in June lend it a later charm. *P. lævigata* is another species, bearing, if possible, brighter berries, which are retained even throughout the winter. The leaves are very shining. *P. glabra* is evergreen and American. It must be certainly evident that the lawn-planter is sadly neglecting his opportunities when he fails to employ such excellent lawn-planting material as the Alders. —S. PARSONS, in *Country Gentleman*.

#### ROOT BLASTING WITH POTENTITE.

WE recently witnessed some interesting experiments on tree roots with a new blasting compound, "Potentite"—manufactured and sold by the Liverpool Cotton Powder and Ammunition Company.

Before describing the operations, we may state that the cartridges, which are made of different sizes according to the nature of the work, ranging from 2 oz. upwards, are non-explosive and perfectly safe—indeed, no amount of violence can cause ignition. This was proved by placing a cartridge on a stone and smashing it up with a heavy hammer. Again, when set on fire it simply burns itself out. It is only when a detonating cap of a very highly explosive character is placed in the cartridge and fired by a fuse that detonation takes place; and even with the cap inserted the cartridge may be rammed home, but it is well to use a wooden rammer. The retail cost of the material is 1s. 6d. a pound, from which a large reduction is made on wholesale purchases. For ordinary blasting purposes its success is assured, and we know one railway contractor who is using over a ton per week. The great difference in effect as compared with dynamite and gunpowder consists in the fact that the action is downwards more than upwards, and consequently that a charge properly directed seems to shake the root to its lowest limits.

The first experiment was on a large double Oak root. The tree had consisted of two big stems, which probably contained between 70 ft. and 80 ft. of timber, and the root was 16 ft. to 18 ft. in circumference. The surface of the ground round the root was dug a depth of about 15 in. to 18 in., and all roots that ran in a parallel direction were cut. A hole in a rather slanting direction was bored, 1 ft. 7 in. deep, with a 1½-in. auger. Four charges, including fuse, comprising 8 oz., were rammed home, and the result was by no means equal to expectation. A piece of considerable size was detached from the centre and thrown in the air, and the rest of the root appeared to be much shaken. In the next test the same root was attacked by three holes being made under the timber in a soft matrix. It will be observed that in each case the charge was inserted into solid

ground close under the central part of the root. Had dynamite been similarly used, we are certain that, besides a little splutter of earth, no effect would have been produced. In one hole no less than six charges, i.e., 12 oz., were inserted; the other two had 6 oz. in each. The fuses were fired simultaneously, and the effect was truly marvellous; large shreds of wood were torn up and thrown 40 ft. to 50 ft. in the air, and carried to a distance of 60 yds.; the largest of these fragments weighed 84 lb. Two portions of the root still remained intact. One part had two charges, and the other one, each taking 6 oz. In one of these explosions a splinter of considerable size was carried 150 yds. We are of opinion that a single charge, judiciously applied, is often more effective than a large quantity, and that in the experiments described a considerable saving of material might have been effected. The actual cost of the potentite employed was 4s. 1½d., 44 oz. being consumed. The labour of clearing away the soil round the root to the depth of 18 in. was probably 1s. 6d., and 1s., more might be expended in filling in the soil and making good. Labour of blaster, say 1s. 6d.; total outlay, 8s. 1½d. To grub and bury such a root would certainly have cost 10s. 6d., and probably more; therefore, in point of outlay, the potentite was successful. But there are two other points of importance, viz., expedition and the breaking up of the root into fragments more or less available for firing without further expense. By the ordinary process of stubbing, the root itself remains as a nuisance, either to be removed at considerable cost, or to be broken up by a slow process and with a large outlay of force, or to be buried below the reach of the plough, and even then injury may arise to the crop from its presence, obstructing drainage or generating fungi. By the use of potentite, we have the root reduced to fragments, most of which are suitable for firing, and the rest can be readily reduced to a proper size. When dried, such material must be valuable, and generally worth a sum that will go a long way to pay for the explosive.

The second experiment was on a Beech root, the tree, which had recently been sawn down, containing about 40 ft. of timber. This was not nearly so large a root as that of the Oak. One bore-hole was made in the centre, about 16 in. deep, with a 1½-in. auger; 8 oz. of potentite was inserted. The explosion shattered the root into four parts. One side, which was the least separated, was attacked with 6 oz. This caused a great shattering, but still a portion in the middle was left untouched, and a third charge of 2 oz. completed the dismemberment. Thus, at the cost of 1 lb. of potentite, value 1s. 6d., the Beech root was so far uprooted and shattered that the work of a few minutes completed the business and restored the soil. Here, again, the saving of money by the use of the explosive is not considerable, but we have the root prepared for the fire, instead of requiring further costly handling—a point of importance.

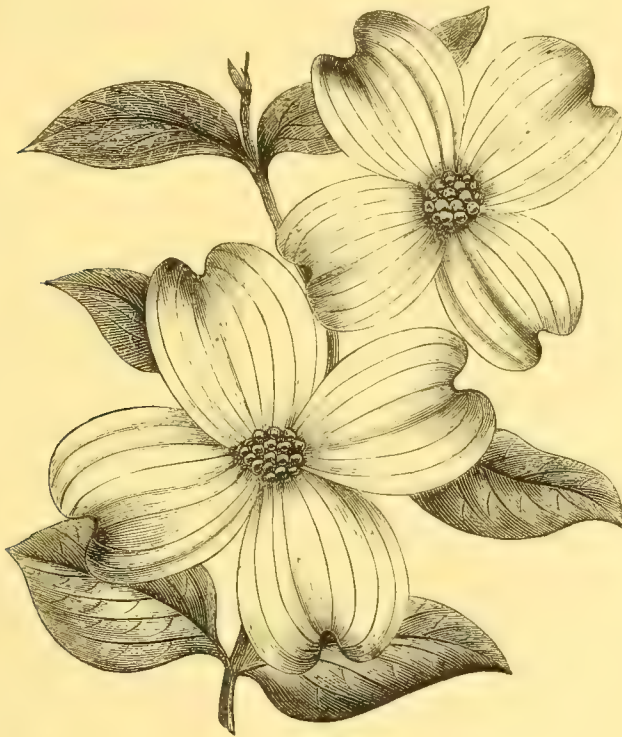
In both these experiments the soil had been to some extent removed from the roots. The third experiment was upon the roots of a Horse Chestnut, which had not been prepared in any way. A bore in centre was made right through the root into the earth beneath, and four charges, equal to 8 oz., well rammed home. The explosion shook the root from the centre, and especially acted downwards, but did not dismember the root; the cushion of soil was evidently too great to allow of the full action of the explosive. Two other charges under the root were tried; the effect was much more powerful, but it was quite evident that the clearing away of the soil to a depth of from 12 in. to 18 in. is a necessary process. Lastly, a big and very tough Elm root was attacked; and, though the soil had not been carefully removed, a series of charges tore the root to pieces, although the consumption of potentite was greater than in the case of the Oak or Beech. Thus, then, it is evident that, with proper management, potentite is a valuable agent, that may be employed with advantage in the process of clearing land of roots.



Its harmless character and the freedom from risk of accident are certainly great points in its favour. Its downward action, in which it appears to differ from gunpowder and far exceed dynamite, are important points; its action when embedded in the soil under the roots, being equally powerful as when inserted in the root itself, is another element of merit that must not be lost sight of. From what we have seen and endeavoured to describe, it appears to us that potentite may be usefully employed in connection with the stubbing axe and the spade in the business of root grubbing.—*Field*.

### CORNUS FLORIDA.

THE white-flowering Dogwood is not, strictly speaking, white flowering, since the true flowers are of a greenish colour. These are to be seen in the centre of the inflorescence shown in the subjoined engraving, forming the little crowded heads resembling a dozen beads in a cluster.



*Cornus florida.*

The large white leaves subtending these true flowers form a four-leaved floral involucre which in this Dogwood is called the flower, and, in fact, is just as showy as if it were. During a visit south last spring we directed attention to a tree, discovered in South Carolina, that bears red involucre. We trust some of our nurserymen have secured it for propagation. Among Dogwoods let us say that the variegated Cornelian Cherry is one of the best of variegated shrubs, for the reason that its variegation is exceptionally constant. It holds its leaves well, and in October they are green, purple, and white. This is known botanically as *Cornus Mas variegata*.—*Country Gentleman*.

IN accordance with the wish of the late Thomas Carlyle, an Oak was planted on the 29th of March on the site of the house at Haddington, N.B., where the eminent Reformer John Knox was born.

**American Bird Cherry** (*Prunus serotina*).—This tree is coming more into favour with planters than it has been, and its timber is valuable for fuel and for cabinet-making. The growth is as rapid as

that of *Acer rubrum*, and it is a much better tree. When planted close (4 ft. by 4 ft.) it makes a strong upright growth, with a straight body. Thinning, so as to leave 1200 trees to the acre, makes a fine plantation. Trees at the age of twenty years from the seed have measured 20 in. in diameter. For posts and railway sleepers, if it is peeled and allowed to season, it is found to be as durable as any native timber. It produces an abundance of fruit, and with culture it is much improved in size and quality. Planted along the highways, it makes a fine shade tree, and perhaps will save many inroads of birds upon finer sorts of fruit. Like all stone-fruit and nut-bearing trees, it is best to plant them where they are to remain, as much is lost in growth by disturbing the tap root.—W. ALLEN, *Omaha*.

**The Spotted Field Maple.** Here is a peculiar variegation, or rather sprinkling, of faint dots of green on a grey-green ground. It comes to us from Messrs. Charles Lee & Son, Hammer-smith. If its growth is free and marking constant, it will be useful.

**Poisonous Prunings.**—As certain as the spring returns, we hear of cattle eating the prunings of Yew and other evergreens, and dying from effects of them. This year has been no exception; and almost every day brings us fresh evi-

dence of the reckless folly of people, who certainly ought to know better, leaving the prunings of Laurels, Boxwood, and Yew within the reach of stock, that no sooner partake of them than they immediately sicken and die. All such prunings should be at once collected and burned as soon as they are cut. The heat of the sun at the present season appears to develop their poisonous properties in an excessive degree, and by some fatuity stock eagerly devour them when in this dangerous state.—*Journal of Forestry*.

**Cherry Trees in Japan.**—The *Hochi Shinbun* says that his Majesty the Emperor will open an entertainment at his park on the 26th inst. to give an opportunity of seeing the Cherry trees in blossom. Ministers of State, privy councillors, and senators, besides many ladies of rank, will be present. The foreign representatives are said to have received invitations. [The above, kindly sent to us by Mr. W. Thomson, serves to show the singular appreciation by the Japanese of their beautiful flowering trees. We had before heard of their pleasant habit of giving parties while their early flowering trees are in blossom.]

**Bambusa Simoni.**—Mr. Gumbleton informs us that this has proved one of the hardiest of the various kinds he has tried. Our experience about London is that *B. Metake* is the hardiest and most enduring of the *Bambusas*, but he says this is quite equal to it in the south of Ireland.

**Fatal Winters.**—Every day brings us evidence of the havoc last winter as made among trees. In certain localities in the north-eastern counties of England and the border counties of Scotland scarcely any kind of tree or shrub has come scatheless through the severities of the past three winters. We hear that even old Oaks, Ashes, and Beeches show the severe trial they have been subjected to. Forest trees in low-lying spots stand dead, or so injured as not to be worth preserving. When trees considered to be perfectly hardy have been so injured, it does not surprise any one to learn that less hardy trees and shrubs are nearly all destroyed in such frost-bitten districts. In some places the Hollies, Yews, and Rhododendrons are killed outright, and the Scotch Firs and Spruces are "as brown as foxes." It will take many years of favourable seasons before such places can recover their former appearance.—*Journal of Forestry*.

**Foresters' Excursion.**—The summer excursion of the Scottish Arboricultural Society takes place this year on the first week in August. The field selected is the celebrated district of Moray, renowned from the earliest times to the present day for the extent and beauty of its natural forests, which, combined with its well-managed plantations, renders it one of the most attractive spots in Scotland to the forester. The town of Forres is the rendezvous of the excursionists. It is situated in the immediate neighbourhood of some of the most celebrated forests in the district. The ancient "Forest of Darnaway," owned by the Earl of Moray, and extending to many thousand acres, is close at hand, as well as the rich sylvan beauties of Brodie and Dalvey; and the no less interesting sands of Culbin, rendered famous among arboriculturists by the success which has attended the planting of them with Scotch Firs and other trees to arrest the inroads of the drifting sandhills. Those intending to join the excursion, and desiring full information, should apply at once to the Secretary of the Society, Mr. John McLaren, 5, St. Andrew Square, Edinburgh.

**Conifers at Dropmore.**—One of the richest Pinetums in this country, as most people know, is that at Dropmore. It contains specimens of some trees unequalled elsewhere in England. *Abies Douglasi* is admitted to be the finest tree of its kind even in Europe. It is considerably more than 120 ft. in height, with a stem in proportion, and it is thickly studded with wide-spreading branches from top to bottom, and this tree was struck from a cutting in an ordinary flower-pot and planted where it now stands by the present gardener, Mr. Philip Frost. Taking into consideration that the soil is naturally sterile, a rock of gravel, in fact, with only from 9 in. to 1 ft. of poor light sandy soil above it, it is evident that this tree has made wonderful growth. The next important Conifer here is the Imbricated Chili Pine (*Araucaria imbricata*), a perfect specimen of what a tree should be—symmetrical and clothed to the ground with branches. It also possesses that graceful habit peculiar to its kind when of sufficient age and in sufficiently good health. Amongst other trees—all beautifully grown specimens and pictures of health—may be mentioned *Abies canadensis*, *A. Albertiana*, the *Deodar*, *Cedrus atlantica*, *Cryptomeria japonica*, *Cupressus Lawsoniana* and its varieties, *Junipers*, *Picea amabilis*, *P. grandis*, *P. lasiocarpa*, *P. magnifica*, *P. nobilis*, *P. Nordmanniana*, *P. Pinsapo*, *Pinus Laricio*, *P. Benthamiana*, *P. Cembra*, *P. Lambertiana*, and *Wellingtonia gigantea*.—THOS. BEVAN, *Highgate*.

**Berry-bearing Aucubas.**—Hardy berry-bearing shrubs, especially those whose fruit when ripe is of a bright colour, are always esteemed, and deservedly so, for they enliven our gardens



through the dull season of the year when there is little that is attractive. When the pollen-bearing variety of *Aucuba japonica* was first introduced, it was justly looked upon as a great acquisition, as by its agency not only would the old well-known spotted leaved berry-bearing form become clothed with bright red berries, but green varieties as well. Yet this appears not to have been realised; strange as it may seem, there are very many gardens, both large and small, in which the pollen-bearing variety has not been planted, or if so, in such limited numbers as not to render fruitful the quantities of fruit-bearing plants which exist. The influence which the presence of the pollen plant exerts is always most apparent on the plants growing nearest it, the fruit of which is more plentiful than that on more distant plants, showing that where large quantities dispersed over considerable distances of ground exist it is necessary to plant the pollen-producing kind in proportionately greater numbers than in most places has hitherto been done. So far as effectiveness is concerned, the green-leaved forms are much more striking than those that are variegated, the contrast between the bright coloured fruit and the green foliage being more conspicuous. Some of the seedlings raised have immense leaves, and a few of these may be desirable by way of variety, but those with smaller medium-sized foliage, when combined with the fruit, produce a more pleasing effect. *Aucubas* in their fruit bearing appear to be less influenced by difference in seasons than many plants, and to derive from the presence of the vast quantities of the common berry-bearing kind the full measure of its decorative value; there should everywhere be enough pollen-bearing plants introduced. As these are now so cheap, it seems singular that this course has not been followed.—A. Z.

## THE ROSE GARDEN.

### SHOW ROSES.

IF Miss Jekyll is right in her statement that "a thoroughbred racehorse is not beautiful, or only beautiful from a trainer's point of view," I must confess that I and a few hundreds of my friends, ladies as well as gentlemen, have mistaken our vocation—we ought to have been trainers. I never was a racing man, except after hounds, but I have always admired a racehorse as one of the most noble and beautiful of all animals; and John Leech would have disputed the next assertion that "no artist would paint him if he could help it, and would rather paint a carthorse or a pony." But this has not much to do with the question. I have enjoyed the friendship of some very distinguished artists who never looked a second time at a flower, or knew a Pansy from a *Polyanthus*. But I am most aggrieved by the inference that I am taking a side and advocating "florist's flowers." Since my boyhood I have disliked all sectarianism in horticulture, and expressed a special disdain of the vain repetition which I have quoted. My idea of a rosarian is a man who admires every Rose that grows. I, too, stand with delight before a Boursault climber, and stopped my dogcart yesterday to gaze upon hedgerow Roses, but I ask leave, nevertheless, to admire the glorious blooms which I afterwards judged at the Crystal Palace. So there is only one true florist—he who loves all flowers. But let us keep to the original question. The editor of *THE GARDEN* hinted at a new National Rose Society, because the existing institution proposed to publish a list of Roses for exhibition. I replied that he should have suggested a supplementary list of Roses for the garden only, and assured him that exhibitors did not restrict their appreciation to the show varieties. I have every reason to believe that such a want will be supplied, and chiefly by those who have been unjustly sus-

pected of only regarding Roses from a trainer's point of view. S. R. H.

### THE BUDDING OF ROSES.

To my note on Rose showing I linked the title of Rose budding, inasmuch as the former mostly excites the rosarian to something like white-heat enthusiasm in regard to the latter. All that has been done is as nothing to what will be done in the way of budding as soon as the season of showing is over. And thus the rosarian goes on hoping, working year after year. His pursuit is a sort of perpetual motion propelled by the three powerful forces of hope, pleasure, excitement. The Roses never quite rest; no, not even in winter; nor do their growers. But in the time of the showing and budding of Roses the rosarian travels by express, not only with his prize blooms, but with his plants, in fact, and in embryo. The mere cutting of his winning stands often involves a serious loss of buds, and causes those left to rush past the proper stage for use. The commercial rosarians know little of the difficulties of amateurs in obtaining buds enough for their Briers. The relation between these two is often of the most ludicrous sort, and it is no uncommon thing to find almost a quarter or half an acre of Briers to a few dozen Roses. In such cases the struggle for buds becomes intense in the extreme, and, much as we sympathise with the bud hunter, it must be confessed he often becomes a bit of a bore. It is almost a pity our large growers do not sell buds to amateurs. True, they do not travel very well, and are best and most likely to succeed when whipped out of their own wood and placed in their foster-mother Brier on the spot where they grow, and in a moment. But still it is possible to select buds that would travel safely and take well at the end of the journey, and no doubt a large trade might be done in buds among amateurs, bringing in a new source of profit to the trade, and yielding fair and satisfactory results to the purchaser. Not, however, such buds as I once received. Calling on a famous private grower some dozen years since, I was offered buds of some of his best sorts. In due time they arrived, all true to name, and of sterling merit. Presently pain and a burning sense of insult and injury, however, banished my first flush of pleasure as I found variety after variety represented by young succulent shoots with never a bud on any of them. It was less the loss of the Rose buds that affected me than the fact of thus being set down as a simpleton. It cured me of begging or accepting Rose buds, unless I can "tak them noo," as we Scotchmen like to put it, and see that what I take are of the right sort. And rosarians, as a rule, are liberal to a fault to their friends and foes, if they have any of the latter, which I doubt. But to return to the buds at the base of the prize flower shoots. They must be used at once, or within a day or two. The flower being removed, the buds receive the supply which made it so large and sweet. They therefore advance onwards, forwards, with leaps and bounds, and will be past budding prime if not looked after at once. It is all very well to write or talk of budding with a growing or started bud. Men like Benjamin Cant, of Colchester, the Pauls, Turners, Francis, Lanes, Bakers, and others could bud with a flowering shoot probably and still save the flower; but such achievements are not for the rank and file of Rose growers. The moment a bud is plump enough to leave the bark with its roots, that is its mass of wood matter, or partially formed fibres at its base intact, that is the exact time when it may be budded with the best chance of success. Bud sooner, it fails for lack of substance; bud later, it is already too hardened and indurated to take quickly or kindly to its new quarters. For this and other reasons bud always and everywhere by condition, not time. Some authorities say bud in June; most prefer July; others bud in August. No doubt most budding is done in June and July. But I should bud any time from May to October provided material in fit

condition could be found. As a matter of fact material will be found growing into fitness throughout the growing season. Proper condition is as essential in the stock as for the bud. The wood and bark must have reached that condition when the one will separate freely from the other. The bark must also have attained to such consistency as to bear slitting freely without breaking or bruising. This consistency of bark is not only essential to the insertion of the bud, but to the rapid healing of the bark, the latter being almost as essential to successful budding as this placing of the bud aright. With this state of bark the wood and sap of the stock will also be in the most favourable state for receiving the bud into its new quarters, and fixing it there with vital hold-fasts. The sap has slightly got beyond its flood-tide probably, and is daily being more thick and viscid, so that instead of flooding the bud out or off it holds it on, and annexes or anneals it rather to itself.

To place immature buds on sappy stocks is to invite failure. If such must be budded, and some seasons no other can be had of some varieties, then, instead of budding, it is better to bud graft. That in the sense I use the term here is to cut a thin filament of wood off with the bud—the thinner almost the better, increasing the thickness, however, just under the base of the bud, so as to secure its roots, and place the whole bodily in the stock in the usual way. This, however, is only recommended in case of dire necessity. The chances of success may be said to be exactly in the inverse ratio of the amount of wood inserted with the bark, and there is no mode of budding equal in certainty of success and rapidity of take equal to the bud, with the section of bark, and the woody roots intact.

I wish to impress on amateurs the absolute necessity of preserving the latter free from injury. The bud may be perfect, the bark unbruised and all that can be desired; and if in removing it from the wood what I call the root of the bud remains like a white mass or point on the latter, that bud may as well be thrown away, as it is almost impossible for it to grow. The bark may take, the point of the bud even break, but it has no base, nor substance, nor means or power wherewithal to replace its roots, and it simply dwindles and dies. The preservation of this base is, without doubt, the most vital point in budding. It requires a good deal of practice and nice manipulation to make sure of saving it. After cutting off the bud with its section of bark it should be turned over in the left hand with its raw side uppermost. Then carefully place the point of the knife under the lower portion of the wood, grasping the bud firmly by the middle. With a rather sudden jerk remove the wood out of the section of the bark, of which the bud is the centre. If the bark under the bud is level or slightly protuberant, the base of the bud is safe, and it may be inserted with full confidence that it will grow; but if it is hollow, it should not be used.

The place and mode of insertion in the stock are of far less moment than the securing of a perfect bud. Before leaving the latter it may, however, be well to state that a small portion of the leaf-stalk should be left on the bud. This is handy for manipulation, and even the modicum of life in it may be useful during the fresh efforts in effecting a union. The nature of the cuts in the stock is so well known as hardly to need description or illustration. The cross cut, however, at the top of the vertical slit, though convenient for novices, is probably a hindrance rather than a help to the taking of the buds. A mere vertical slit, 1 in. long or so, suffices to insert the bud and to hold it more firmly afterwards without the horizontal cut at top that converts the slit into the letter T, with which the many works on Rose budding have made all so familiar. Anyhow, the more rapidly the bud can be transferred from its own place to its new home, and the fewer wounds and bruises are made on either bud or stock during the process, the more certain are the buds to take and do well. The chief reasons why professional budders are so much more successful



than amateurs is less that the work is better than that it is quicker done. It is the pace that wins in Rose budding, and the lack of it that kills. Amateurs also mostly tie too tightly and to excess. A round or two of *Raffia* Grass is the best tie and the easiest to make. Once or twice round, under, and above the bud is sufficient. Of course some latitude must be given for the length of the slit. About 1 in. is the best average; there is no advantage in having it longer, and it is hardly convenient to have it much shorter. When a cross cut is made it is common to cut the section of bark parallel with it, and to butt it against it at its upper edge. Some make the cross cut at the bottom, and butt the lower section of the bark against it. When a cut is used this facilitates the union, as the chief healing or uniting forces are in the lower portion of the bark, or the cambium, or wood in the forming immediately under it. Of course every one will rub off the prickles from the Rose buds, as, unless this is done, budding would be not only slow work, but impossible. Even in regard to these there are right and wrong ways of procedure. They should be rubbed off, not cut; and those who know how to displace them will do so, and hardly leave a trace of them behind on the smooth even surface of the bark; while not a few so wound the bark in removing them as to seriously lower the chances of success.

D. T. FISH.

### THE TIME OF ROSES.

THIS has come at last, later than usual, and the bloom is also thinner, and yet it is a delightful time, so full of beauty, so redolent of sweetness. It is wise to forget the wreckage and the loss for a season, and revel—no, not revel, but rest among and enjoy the saved. I have carefully read all that Canon Hole says of the delights of Rose showing. But in the effort to keep the Roses cool and fresh not a few of their growers get hot and excited; and rosarians seldom show to less advantage than in the show tents after the awards. On the entrance to every Rose tent it might be wise to write, "Greater is he that ruleth his spirit than he that taketh a city" or any number of firsts. This self-command and self-possession are as much needed by the victor as the vanquished. Silence best becomes both for a season, until success can be enjoyed with meekness and defeat with patient continuance in well-doing and saying. And of course all readers of *THE GARDEN* will be prepared for either defeat or victory, their only anxiety being that the best Roses should win, of which there is really little doubt; and it is for this purpose that Rose shows are held. The more the Roses are seen, and the less the Rosarians are seen and heard of, the better. Occasionally we see exhibitors so proud of their own products that they post themselves in front of them, thus hindering the public from seeing and admiring their merits. Could the Roses speak they would address their owners in the sense of the philosopher who, pestered by the offer of service from his sovereign, replied, "Yes, sire, you can render me a great service; stand aside that I may see the light." Would also that our Rose tents could be less crowded and more silent. The crowd is unavoidable; it is the highest compliment that can be paid to the popularity and beauty of the Rose; but the talking might be subdued by good taste. A Rose show is an exhibition of the highest art of which Nature is capable. The effect of art is to inspire silence in those who can appreciate it. We have only to visit the National Gallery, Louvre, or any other great collection of paintings to feel this. The sight of such exquisite art inspires silent, reverend absorption and admiration. Nothing is so annoying in the presence of the grand or the beautiful as the irrepressible chatter of thoughtless ignorance. It is just so in Rose shows. Absorbed in such matchless displays of many formed, many coloured beauty, one passes their most intimate friends unnoticed; and they ought to be allowed to do so. Thus absorbed and enraptured, the beauty and sweetness of the Roses sink as it were

into our very souls. Some Rose shows I have seen live for ever not only as sunny pictures in the memory, but as sources of wisdom, strength, comfort, gladness to my head and heart. Amid the Roses that thus live for ever, there also spring up visions of faces, hands, and hearts, gentle, firm, true, that, once met among the Roses, are forgotten never. But what of the blank? Only this, that the true Rosarian never despairs. Roses, however, like all else, come and go past recovery; and the new, though sometimes better, never really can fill the places of the old. But yet the new are welcome, and the oldest stagers generally give the new Roses and exhibitors the heartiest welcome.

The Maréchal Niel has filled the largest place of any Rose of recent years. Its general destruction in the open during the past winter and spring will modify and impoverish the Rose season of 1881. The Maréchal will be sorely missed from many a stand and tent. Since the loss of Cloth of Gold we have had no golden Rose to equal it; Boule d'Or perhaps comes the nearest to the Maréchal in quality, but the Boule is shy and uncertain, and is also well-nigh destroyed in the open. The Rose season of 1881 is therefore likely to lack gold, but still there is much beauty and sweetness left, and it is to be hoped that our hybridists and cross-breeders of new Roses will turn their serious attention to the production of a true golden Rose as hardy as say Charles Lawson, Coupe de Hébé, or Baronne Prevost. The foundation of such a Rose may be said to be already laid in such varieties as the yellow Cabbage and Persian, all of which have stood the past winter with safety. These crossed with such Roses as the Maréchal, Boule d'Or, Cloth of Gold, Solfaterre, Céline Forestier, or others, might yield a perfectly hardy yellow Rose. A yellow perpetual equal in form and substance to say Charles Lefebvre, Baroness Rothschild, or Duke of Edinburgh would introduce a new era in Rose growing and showing. Should the loss of our favourite this season result in the advent of any such Rose, then might we gently submit to the destruction of the Maréchal and all his subordinate hosts of existing golden Roses.

D. T. FISH.

**Roses at Goodwood.**—The large bushes of pegged-down Roses near Mr. Rutland's house, at Goodwood, are now very beautiful, and well illustrate one way in which our Rose gardens may be improved. Although pegged down, many form large bushes, of which the foliage is quite worthy of the flowers. Such well furnished plants on turf could be used with good effect. We by no means object to some of the grand old standards one sees where Roses do well and live long, but these are not the standards of the ordinary villa garden, nor of the exhibitor who keeps his slim young standards to give him a few, but good blooms.

**Mildew on Roses.**—In a recent number of *THE GARDEN* something is said about Mr. Stratton's remedy for mildew on Roses. It is certainly good, like that recommended long ago by Victor Verdier—chalk and sulphur ingredients, still in use here, but they require some time to prepare, and cost something; while a sure and cheap one has been recommended some time ago in the *Revue Horticole*, viz., salt water. I have tried it with success, but I have made a mistake. Thinking that it would act quicker and surer, I syringed two Rose plants covered with mildew in the middle of the day in the full sun. The mildew was destroyed, but all the leaves were burnt, though they have now grown again. It is therefore better to practise the remedy early or late in the day. Of course in a greenhouse shading can be used at the time of syringing.—JEAN SISLEY, *Lyons*.

**The Rose Season.**—I am afraid it is a bad look-out again this season as regards Roses. I know many small amateurs who are thoroughly tired of these erratic seasons, and say they shall give up Rose growing altogether. Frost in June, hail, gales, storms, and then a tropical heat at

times and dry cold nights—if these are not enough to dishearten one, what is? There have been many and serious losses again in "maidens" and "cut backs," and I don't look hopefully at all to the Rose shows of this season. My first blooms are badly shapen and wanting in colour, and as the plants are in fair health I think the number of buds smaller than usual. The maggot, greenfly, and the great army of nuisances with which Rose growers have to contend have turned up plentifully and destroyed (through not watching night and day) many fine blooms and spoilt the foliage. Notwithstanding these drawbacks, however, I can cut well to-day, for example, Prince Camille de Rohan, Richard Wallace, Gloire de Dijon, Mdle. Eugénie Verdier, Princess Louise Victoria, Louis Van Houtte, Monsieur E. Y. Teas, H. W. Eaton, and others. I have been cutting old Gloire for a month quite out of doors on a west wall. — W. W., *Burton-on-Trent*.

## THE FRUIT GARDEN.

### POT CULTURE V. ROOT PRUNING.

THE chief objections to this proposal of "Peregrine" are the expense and the effects of the pots. The expense is heavy to start with, something like say 5s., 7s. 6d., or even 10s. 6d. for a pot of sufficient size and strength to grow Apples, Pears, Cherries, and Plums to perfection in the open air. This would virtually treble at starting the cost of the tree or the accessories of growth. This is a very serious matter, and would tend very much to check rather than extend the cultivation of choice fruit in gardens. Still, justice to the pot system requires that part of the cost of the pots should be placed as a set off against the labour of root pruning, as they would no doubt render such labour unnecessary, and, provided the trees did very much better in pots than out of them, the extra produce would speedily pay for the pots; but this can hardly be said to be the case. I have grown a few trees in pots in the way proposed, and seen a good many so treated at Mr. Rivers' and elsewhere, and have come to the conclusion that it is not a practice to be commended. The effects on the roots vary very much, according as they are kept in the pots or not. It may surprise a good many to be told that the fact of the top of a tree rising from the surface or centre of a pot must by no means be accepted as a proof that the roots are inside of it. Often the tree in a pot so-called has its roots almost as much in the open as if there were no pot near it. In nine cases out of ten this is the case with the Figs in pots so often quoted in favour of the system. With one huge hole in the bottom and three or five in the sides of the pot near to its base, and the pots plunged over head in spent leaves, tan, decomposed manure, or Cocoa fibre refuse, the whole plunging bed becomes a network of feeding fibres, and the pot a mere landmark or holdfast. Trees plunged in the soil out-of-doors are as a rule found in the same condition, though perhaps not rooted out to the same extent. The roots of trees in pots make straight for the outlets of the pots or overleap their tops, as if by a sort of intelligent instinct—knowing where the larger larder is, they make haste to enter it. And mostly such trees do well. The crush on the main roots through the outlets of the pot checks the flow of the sap, and so far has a similar effect to and prevents the necessity for root pruning. But, on the other hand, the pot culture of fruit trees in the open, pure and simple, seldom answers well. The roots seem to weary of their endless unnatural rounds and tremendous compression, both quite unnatural to them. The soil also gets exhausted and sour. Large heavy pots plunged into the best and most porous soils mostly get sour and sodden after a time unless set over a drain; the more they are watered the more stagnant the soil becomes. Sour soil leads to a state of semi-paralysis and consequent destruction of the roots, and when this occurs the end is not far off.

For this and other reasons, I greatly prefer



root pruning when necessary to the cooping of the roots always in pots. It is quite a mistake to suppose that those who practise this short cut to fertility are always or even often at it. Nothing of the sort. Trees once led into fruitful ways at the point of the knife are not likely ever to need a second edition of root pruning. Fertility once firmly established repeats itself as a rule, and as nothing succeeds like success, so there is no recipe for fertility like fruitfulness. A good crop this year, if not overdone, is the best of all preparations for as good or better one the next. Neither do I agree with "Peregrine" in his objections to digging about and examining the roots of trees. The mere disturbance caused by such operations often proves a remedy against sterility without further violence, and besides it is well to see the roots at times. The sight of these throws floods of light on to the tops, and we can never so thoroughly understand our trees till we have seen and known them altogether, bottom as well as top. On the whole, for these and other reasons, I very much prefer judicious, discriminating, cautious, wise root pruning to any system of pot culture of fruit trees in the open air. D. T. FISH.

#### THE AMERICAN CRANBERRY. (*OXYCOCCUS MACROCARPUS*.)

MR. F. TROWBRIDGE, Milford, Conn., has sent us the following practical treatise on the planting and culture of the Cranberry:—

**Selection of the Land** is the first consideration, for unless it is adapted to their growth it will be useless to plant them. The best is low, moist land, suitably drained, so that the water will be from 12 in. to 18 in. under ground. Cranberries will grow on moderately damp soil that can be ploughed or cultivated (they will not do well on dry sand or clay), or on the borders of streams or ditches; light sandy soil, or peat, covered with 2 in. or 3 in. of sand, is the best adapted to their culture. If planted on rich soil or loam, they grow rank and strong, sometimes 8 ft. or 10 ft., and cover the ground over with a net of vines, 3 in. or 4 in. thick. As the fruit grows on the end of the shoot, the rank growth throws out but few buds; but if sanded over the shoots grow short and throw out more and stronger fruit buds. In preparing the ground, if wet and spongy, it should be drained, and the surplus water left about 10 in. or 12 in. below the surface. It can then be prepared by burning over and removing the top soil—by carting off for compost or burning when dry—by levelling the ground and covering it with pure sand (free from organic matter) 2 in. or 3 in. deep, to keep the surface loose, and to prevent foul Grass from choking the plants. Some prefer putting 2 in. or 3 in. of sand in the bottom, and after two years' growth spreading on 1 in. or 2 in. more, which I think is an improvement. When the sand is mixed with the top stratum, it will invariably throw up weeds, and a large increase of labour is necessary to keep the ground clean. The Cranberry should be put in with a notched stick or a dibble, to make a hole 4 in. or 5 in. deep, in which to place the plant, press the soil around it with the heel of the boot. The vines should be left from 1 in. to 1½ in. above ground. When planting pour on water, to settle the sand around the plants, which will soon start to grow. They are very tenacious of life, and if, when removed, they be put into water from 15 to 20 hours before planting, if apparently dry, they will retain their freshness, and are sure to grow. Where failures have occurred, they have been owing to the plants having been taken from the parcel and put out in dry soil.

**Flooding** is desirable, and I might say indispensable, to complete success; the water can remain on the vines to the 10th or 15th of May, or until there is no danger from frost; it may cover the vines from 1 ft. to 2 ft. more, and if it can be let on or off at will in the course of a few hours during the season it will be beneficial. The water should not stand on them when in blossom or when the fruit is quite green.

**Varieties.**—The best known and most extensively cultivated have been the *Bel*, of which there are two or three varieties. The *Cape Cod Bell* is the best known, and has been more extensively cultivated than any other variety. The colour is a dark red, but it often varies in colour and shape on different soils; the bearing and ripening qualities are, however, the same. The *Bugle* is an old variety, rather early, good keeper, colour dark scarlet, a medium bearer. The *Cherry* kind generally grows on wet soil or moist upland. Of this there are numbers of varieties; the one most commonly planted is of medium size, round shape, bright red, and a good bearer, but later than other varieties; another, called *Mottled Bell*, pink on white ground, has very handsome fruit, but is late and little grown. Two new varieties have lately been introduced, which, by a number of years' cultivation, we find superior to the above in several particulars. They are early and constant bearers when others have failed, and in the future we shall not plant any other. The past two years we should have had a short crop but for these kinds. *Eaton's Early Black Bell* stands first: it ripens very early, and is fully coloured by the 5th of September in New England. It brings the highest price in market. *Mansfield Creeper* was first discovered in a cornfield and transplanted to a Cranberry bed. In its new position it was found to be entirely different in its growth and habit from all other varieties; it seemed to creep on the ground and take root at every joint, bearing shoots every 2 in. or 3 in. on the vine, and throwing out fruit buds for a fresh start another year. It is a few days later than the *Eaton Bell*, and both are adapted for upland culture. It is of large size and a great bearer; the flesh is tender, not very acid, dark scarlet on one side, the other nearly white, with a slight mottle; shape roundish oval.

**In Small Gardens** even every family can have their patch. A moist but not clayey soil should be selected, and the ground should be prepared as for Strawberries; the entire surface should be covered 1 in. or 2 in. with fine peat or sand. They can be planted 1 ft. to 18 in. apart, and from 4 in. to 6 in. in depth. They are even highly ornamental in pots, the fruit hanging on the vines until the blossoms appear for the next crop. In some places Cranberries have been successful in ordinary garden soil, and Mr. Downing has stated that a plot of the size of 20 ft. square, planted properly, will yield 3 or 4 bushels annually; quite sufficient for a family. Experiments in New England indicate that the Cranberry can be cultivated on uplands, though generally with moderate success. On Long Island, however, there are Cranberry patches on high upland soil of 5 or 6 acres that produce from 60 to 100 bushels per acre, which is considered a satisfactory result, as manure is unnecessary, and the trouble of cultivating, gathering, and marketing is less than that required by the Strawberry or any other small fruit.

A correspondent describes a plot of nearly three-fourths of an acre completely covered with beds of Cranberries, the vines "thickly matted and in a flourishing condition." These grounds, which were naturally slightly moist, were prepared as for Strawberries and then planted with Cranberry vines. They were placed in rows or beds in the same manner as Strawberry plants, and then served with a top dressing of meadow mud which had been taken from its natural bed and exposed to the frosts of one winter, by which it was rendered very loose and friable. They were afterwards cultivated with the hoe until they had completely covered the ground, simply passing between the beds, pulling out such weeds and Grass as might occasionally be growing among them, and killing the worms, if any might be found on the plants, until they become thoroughly matted. The cultivator succeeded in obtaining a good crop—an average of 160 bushels to the acre. The fruit was excellent in quality and sold readily for one-third more than the common uncultivated Cranberry of the

swamps in that vicinity. In regard to the success of Mr. Bates in his method of culture, Mr. B. G. Boswell, of Philadelphia, gives the following testimony, viz.: "As this plant naturally grows in a very wet soil, it is generally supposed that it will not thrive in a dry soil; but this idea is erroneous. Mr. S. Bates has cultivated the Cranberry on a dry soil for several years with the utmost success. His method is to plough the land—spread on a quantity of swamp manure, and after harrowing the soil thoroughly, set out the plants in drills 20 in. apart, hoeing them the first season. After this no cultivation is needed. By the above method the plants will cover the ground in three years."

#### PROFUSE BLOOMING IN ITS RELATION TO FERTILITY.

"PEREGRINE" has done well to call attention to this matter. My observation and experience are very much like his. It is by no means the trees that have most bloom that set the most fruit. Not seldom quite the contrary is true. We have suffered so much from frost of late years that we have come to set down all failures to that as a matter of course. A good many of the slips between the cup and the lip—the bloom and the fruit—arise, however, from other causes. Fruit trees, for example, under glass can hardly ever have their blossoms chilled or frosted off, yet how frequently the crops prove more or less disappointing. This is especially the case at times with Plums and Cherries in frost-proof quarters. The trees are smothered with bloom, but when it fades the fruit is found to be thin or poor; and the same thing too often happens in the open, so that an over-close atmosphere under glass can hardly be credited with the failure. Possibly the mere development and maturation of the fruit buds in such numbers tend to wear out and exhaust the trees. If so, the best time to thin fruit blossoms would be when they are being manufactured in the autumn, but such processes need more patience and time than the majority of cultivators are endowed with; and so the thinning alike of partially-developed and finished buds is left till the whole have fully expanded into bloom. The trees, having made a supreme effort to manufacture and open so many flowers, not seldom seem to faint and flag, and finally cast off the majority of them in the setting. This is probably the simple history of a profusion of bloom succeeded by a scanty crop; but other causes, such as cold and semi-starvation, also bring about similar results. To moderate cold is beyond our power, but no one is obliged to allow his trees to starve. Abundance of food and water may often succeed in developing the major portion of the blossoms and fruit. Overhead waterings, especially should the weather prove very dry about the time the blossoms are fading, seem to have a powerful influence in causing them to hold on. Moist and moderately rich root-runs are also favourable for the same purpose, but all over-feeding or stimulating treatment must be avoided, as well as sudden alternations or extremes of temperature or treatment. No doubt it is these unavoidable alternations in the open air that are so largely responsible for so much fruit-blossom failing to set securely. Still, there are other and more preventible causes, and among these one of the most potent is the overcrowding of fruit blossoms, and fortunately it is also the most amenable to successful treatment. D. T. FISH.

**Vine Leaves.**—J. P. T. Possibly your leaves are scalded by the sun shining upon them when wet. As a rule, if you hold a diseased leaf up to the light and the injured places are transparent, or semi-transparent, the injury is due to scalding, burning, or the burrowing or eating of insects—the tissues are gone. If the injured parts are dense and more or less opaque, some fungus is probably at work; and if the fungus does not show itself outside, it is inside and causes the obscurity.—J.

**Grapes in Cool Houses.**—Dr. Newington, of Ticehurst, has great success with these in houses running from north to south, and having a roof with a steep slope. In such houses the leaves



do not scorch and the fruit becomes perfectly ripened. Sometimes there is danger from a spring frost, but no serious loss has as yet occurred in that way.

**Fruit in Tins.**—A correspondent writes: At this season of the year, when ripe Apples cannot be procured, there is a large quantity of American tinned Apples consumed. There is great danger in eating fruit so packed, for the acid acts upon the tin and solder which is sometimes thickly coated inside, leaving a deposit of acetate of lead, which mixes with the fruit. A case has come under my notice of a whole family exhibiting grave symptoms of poisoning through eating these Apples. —*Daily News*.

[We never could see why Apples are put in tins when they can be had so good in a dried state at all seasons. Apples are obtainable in such abundance for a considerable portion of the year that Apples in tins are not a necessity. The American growers will no doubt cease tinning, enjoying as they do such rapid and cheap means of transit and such effective means of drying their fruit when they cannot sell it fresh.]

**La Marguerite Strawberry.**—I have recently had the pleasure of looking through many gardens in this vicinity, and of observing numerous varieties of Strawberries. I confine my remarks to those grown outdoors now; and for size (and the latter quality especially), I have seen nothing to equal this Strawberry. It was ripe outdoors, pulled, and sent to London, I understand, from the head gardener, Mr. Ryan, at Knocklofty Gardens, the seat of the Earl of Donoughmore, the last week in May. President, as here, is ten days behind, so is British Queen and V. Héricart de Thury. From my experience I would class La Grosse Sucrée as second best, and then President from the above points of view. Now that runners are preparing for a new crop, observations of this kind would, I presume, be acceptable to most readers of THE GARDEN. — W. J. M., *Clonmel*.

**Frontignans Shanking.** — "Peregrine" seems fond of denouncing everybody whose experience or taste does not happen to coincide with his. My experience of the Grizzly Frontignan Grape corresponds with that of the writer in the *Illustrated*, as quoted by "Peregrine." In a mixed Vinery here, in which are canes of Hamburgh, Buckland Sweetwater, Lady Downes, Alicante, Muscat of Alexandria, and a strong young Vine of the Grizzly Frontignan, the latter has not produced a bunch fit to send to table for the past two seasons; in fact, there has not been two dozen sound berries on any one bunch, owing to its shanking badly, though there has not been that number of shanked berries on all the others combined. The few berries which escaped were smaller than those of any of the other sorts, quite earning the name of being below medium size. "Peregrine" does not say who his "best authorities" are; and he says himself that it is only sometimes that the berries are the size of those of the Hamburgh, and when they are I should fancy the Hamburgh must be rather small for the variety. I am thinking of cutting back the Grizzly Frontignan and grafting a Buckland Sweetwater on the stock; but if "Peregrine" can give me any rules to work upon to prevent its shanking, I will try it once more, as its flavour is excellent. I have always found it shanked wherever I have met it, though not to the extent it is here. — JOHN C. TALLACK, *Prideaux Place, Padstow*.

**Strawberries in Clumps.**—As our plan for growing large crops of Strawberries may not be generally known, I will explain the method in as few words as I can. Our plants are from ten to twelve years old; that is, the clumps are of that age. These clumps or stools may consist of a dozen plants. For many years we have produced large crops and fine fruit by transplanting every two years those large stools at 3 ft. apart on fresh soil; if they remain a year longer, the fruit is smaller. This shows that it is the constant change of soil which suits the plants. The soil is a stiff loam, prepared by manuring heavily and double digging. The plants are taken up with a steel fork, and sometimes two forks are necessary to secure a large ball of earth. All the beds are well watered after flowering, the water being sup-

plied by means of a hose and in any quantity. The fruit, which is now most abundant and of a large size, has been propped up by circular wires, which not only prevents the plants being splashed by rain, but it enables the sun to ripen the fruit all round, and snails do not injure it. I have seen accounts of hundreds of acres of Strawberries grown in Kent on my plan. A plan which will secure a large crop the first year of planting must be an advantageous one. To keep off birds, stretch a string from one pole to another through the bed, and tie two or three sheets of newspaper to the string. — PHILODENDRON.

**What our Cousins want.**—Those who can remember the best standard fruits thirty years ago will perceive a great change for the better as they look over the adopted lists of the present day. But we are still dissatisfied, and should still aim for something better. We want a Raspberry as productive as the Philadelphia and as good as the Herstine, with the berries at least 1 in. in diameter and perfectly hardy. We would like a Blackberry as large as the Wilson Strawberry, as good as the Dorchester, and as profuse a bearer and as hardy as the Snyder; and a Gooseberry as large as the English Roaring Lion, and equal to the Houghton in growth, bearing and freedom from mildew. We ought not to be satisfied with a Currant less in size than the Delaware Grape, and as reliable as the Red Dutch; a Strawberry with the general adaptiveness and bearing of the Wilson, the quality of the Wilder, and the size of the Sharpless, a field of which in bearing would appear like a fine crop of Red Clover in blossom. Among Apples we have a fine grower and a great bearer and a handsome fruit in the Baldwin, but many would like it better if as good in quality as the Swaar, and as hardy as the Duchess of Oldenburg. The Wealthy, with its handsome appearance, good quality and hardiness, would be more valuable if a longer keeper. Even the Bartlett Pear not quite perfection, although so great and early a bearer and so fine a grower. We want another Pear as free as the Duchesse from blight, as handsome as the Clairegeau, and as good as the Seckel, outbearing the Bartlett, and a month later. — *Country Gentleman*.

#### SEASONABLE WORK.

**Pines.**—About this time a pit should be prepared for a batch of suckers from the early summer fruiters. A close moist pit, in which a bottom heat of 90° to 95° can be maintained, will suit them better than a large house, as they will require less artificial moisture, and shading will be reduced to a minimum. Use clean pots of 6 in. to 8 in. in diameter, and ram the soil, pure loam, very firm with a blunt stick. Plunge to the rim near the glass. Give a little water at once; keep close and moist until roots are formed, when more air may be given. Fruiting plants should be removed to a dry, airy house to finish slowly as soon as the Pines show signs of changing colour. Draw starters from the succession house to take their place, and pot on the best plants from the reserve pits before the roots begin to interlace each other round the balls. Strong, lumpy fibrous loam, with a little bone dust added, is preferable to a mixture of soil and vegetable matter, which soon decays and forms food for worms. If likely to become adhesive, a little chopped straw may be added.

**Grapes.**—As nothing so completely mars the appearance of a bunch of Grapes as stoneless berries pass the scissors over late crops for the last time, and see that those intended to hang through the winter are well thinned. To insure early maturity under the influence of solar heat, and to prevent scalding of Lady Downes and Muscat, continue night firing, with a little air, and ventilate freely through the day. The rainfall having been light, see that external borders are well mulched, and give diluted liquid or guano water to the inside roots in quantities that will reach the drainage, as often as may be necessary to the maintenance of a moist growing state of the soil.

**Succession Houses** in which Grapes are taking the last swelling should be closed with plenty of sun heat for two or three hours every afternoon. Give night air and a little fire heat, to maintain a minimum temperature of 65°.

**Early Vines**, from which the Grapes have been cut, may be encouraged to make new lateral growths by copious watering and good syringing. If portable draw off the lights in showery weather, or wash the upper sides of the leaves on fine evenings. Many people play most assiduously upon the under sides of the leaves, but where the upper sides are neglected their work is only half done.

**Pot Vines** intended for next year's forcing, which have made their growth, will now require more air to harden

their growth. Remove all laterals close to the eye, from the base of the cane up to the point at which it will be pruned. Take care of the old leaves, which are required to feed the buds, and keep them clean by a liberal use of the syringe.

**Figs.**—Pot trees now swelling off second crops if well drained cannot be overwatered, neither can they be too freely syringed. Give air early, and keep the house or pit well ventilated when the Figs begin to ripen, but carefully guard against producing a check by withholding water from the roots. Permanent trees carrying ripe fruit must have plenty of air and all the light that can be secured to them. Where this is neglected the Figs will be pale and vapid, and, as a matter of course, flavourless.

*Eastnor Castle.*

W. COLEMAN.

## GARDEN DESIGN.

### MAKING WEIRS PICTURESQUE.

It appears from advertisements that it is contemplated to construct a weir across the River Crocker, at Crummock Water. It has long been intended to carry out a similar work at Thirlmere. Where such works are necessary, there seems no reason why they should not be done in such a way as to avoid damage to the surroundings; on the contrary, instead of mechanical weirs simply, they should be natural waterfalls or cascades, and would answer the purpose equally well. Thus treated, when done and planted, they would look as if they had existed for ages, be natural to the site, and really form a picturesque part of the scenery, with rock, wood, and water combined—elements that constitute the beautiful in landscapes. In this case, where there is lake and mountain scenery, all would be in harmony with the surroundings. When the large sums of money expended on such works are considered, surely the little additional cost need form no obstacle, for there need be only a rugged facing of rock joined on to the weir proper, and this rock facing would enable the less to be used in building the weir, as it would add strength to it, and therefore not all be additional expense. Many instances occur in which beautiful valleys have been injured by the making of weir dams, reservoirs, &c., of formal shapes, and without regard to picturesque effect, whereas they might often have been so constructed as to improve the landscape if carried out by those who understand and appreciate natural beauty.

Anent this subject, I may remark with regret how seriously our picturesque bits of natural scenery are injured by engineering and other works from want of taste, little or no attempt being made to avoid ugliness, although just the reverse might have been secured sometimes at no additional cost. Even in cuttings through picturesque scenery a smooth bank seems to be aimed at, instead of having the rock roughly broken, so as by the aid of planting a good effect might be produced. Where there is no rock, the planting alone would add to the stability of slipping banks. Others besides engineers seem to encourage ugliness rather than beauty. I was sorry to observe lately the beautiful Wyndcliffe, near Chepstow, being seriously damaged, apparently only for the sake of quarrying stones, which could easily have been got elsewhere. Engineers are not at fault in this case, but the owner of the property (I believe the Duke of Beaufort), who would be supposed to have better taste, though he may possibly not have observed such work, or the injury it does to the landscape. One instance of a railway embankment being made picturesque by the aid of a landscape gardener is at Preston, where the line passes through the public park. It looks as if it ran on a natural cliff overgrown with varied foliage. Water has been laid on to flow over the rock in one place, apparently natural, and forms a drinking fountain.

I have often noticed about the country, in the case of pleasant resorts both by the seaside and inland, that owners are not so careful as they should be to preserve the natural beauties or antiquities of such places. In some cases pleasing objects are allowed to be obscured from view, as at places I could mention. What a certain writer says of art is, I fear, too true, viz., that



the great public need educating up to its appreciation; and so it seems with the beautiful in Nature. The clipping of shrubs into rounded forms, even where there is not the excuse of protruding into the pathway or road, is another perversion of good taste. It seems as if a smooth, rounded, or conical form is preferred to irregular, natural, and, of course, better shape. This may appear to be beside my subject, but it is one of the things that so often damage the picturesque effect of plantations, pleasure grounds, parks, and gardens, that I could not help alluding to it. It is doubtless done under the impression that it produces a neat appearance, but most of us, I hope, would prefer a good rugged, natural outline.

Brosbourne.

JAS. PULHAM.

### THE POET WALLER'S GARDEN.

In travelling by the London and Oxford coach in former days, after passing Bulstrode, now the Duke of Somerset's place, you entered the wide street of a country town, known by name throughout the world as Beaconsfield. Edmund Burke's house, long since destroyed by fire, stood in a small park close to the town, and Hall Barn, the residence of the poet Waller, is a mile distant in the opposite direction. The home of Waller in the seventeenth century is now, in the nineteenth, very much what he made it. The house, it is true, has been enlarged, but the park and gardens are the same, except that the lapse of 200 years has added to their beauty. The only drawback in the planting of the trees and shrubs, such as Yews and Hollies, which Waller largely used, is their slow growth. The planter cannot see them grow, as he almost can in the case of ephemeral subjects, but they endure for ever. An exposed aspect, north and east, of one of the fronts has been protected here by the planting of Yew and Holly hedges, and "Waller's walls," well clipped and trained, and green to the ground, are now 20 ft. in height. The poet must have been a skilled gardener. All the leading principles of the landscape gardening art were observed in his plans. It is a common error in designing the grounds of a country house to provide too much landscape and not enough seclusion. Waller's judgment taught him better. He has secured in one direction pleasant views across the park to Burke's Grove and other points, and, instead of opening other landscapes similar in character, but not quite so pleasing, he has left his successors, on the south side of the house, a charming garden, with delightful lawns. In this part of the grounds the walls of evergreens shut out the cold winds and conserve the sunbeams at those periods of the year when they are scarce. From the lawn you enter a wood planted by Waller as an additional breakwind, and any person who may be now engaged in the delightful task of forming a new place, or increasing the comfort of an old one, may wander with advantage in Waller's Grove. Much of its novelty and beauty consists in the winding walks and vistas which the skilful poet arranged with a view to the distant scenery, and also with a view to several summer houses and classic buildings which form the starting points of these woodland walks. Waller lived at a period when garden architecture and imitations of the ancients were in vogue, and therefore his *chef d'œuvre* in the middle of the wood is a temple without seats and open to the winds. Its views and vistas are delightful. The park at Hall Barn was improved in 1839 by a storm of wind, which thinned the too abundant timber and overturned 500 trees. Just such a storm is needed in some other parks. Waller died at Hall Barn, and Sir George Ouseley, Bart., purchased it of his family in 1832 and greatly im-

proved it. It has since been owned and occupied by Mr. A. Morrison.

**Sion Hill, Ferry Bank.**—This is not a large place, but neatly kept. In a small Vinery I noticed Stillwell's Sweetwater grafted on the Black Hamburgh, on which it was doing well. On the back wall were some fine Cacti. The Peach houses contained Barrington and Royal George, both carrying heavy crops. The roots of these, which are in an outside border, are root-pruned every year to within 6 ft. of the stems; the trench is then filled up with good maiden loam and lime rubbish, and rammed firm. The back wall is covered with Gloire de Dijon Rose and Aloysia citriodora, and I also observed some good Camellias in 12-in. pots 5 ft. high and 4 ft. through. The plant stove contained a good collection of indoor plants. In the flower garden, besides plants bedded out and dwarf Dahlias, hardy plants are used on a much larger scale than hitherto. There is also an interesting little indoor Fernery and an outdoor pond, the sides of which afford accommodation for hardy Ferns, and in the centre stood two plants of *Osmunda regalis* in pots on stakes driven down for the purpose of supporting them.—JOHN A. COLTHORPE, *Summerville, Waterford.*

**Notes from Craven, Yorks.**—Notwithstanding the severity of the past winter, the spring has given us a glorious show of bloom on all the principal flowering shrubs. Rhododendrons, Azaleas, Hawthorns, both white and red, Lilacs, and Laburnums have been unusually full of flowers. The hardiness of the *Retinosporas* has been proved here, 400 feet above the sea, by the luxuriant growth which they are now making after three such severe winters as we have had. *R. plumosa aurea* is certainly one of the loveliest hardy evergreens that we have, rivalled, however, by *Juniperus chinensis aurea*. Whether *Cupressus Lawsoniana aurea* will prove as bright in colour as the above seems doubtful. The cold winter seems to have suited the alpine. The various alpine Primulas, Soldanella, Cortusa, Linnea, Edelweiss, and the numerous Saxifrages and Sedums have bloomed profusely out on the rock-work. Has any one of your readers remarked that Sweet Violets have this year flowered white? Almost all my Violets have done so. I note the same as regards Lupines (perennial), all of whose spikes, last year, as heretofore, lilac, are this season a dull white. Many of our common laced Pinks have undergone the same change, and, losing all colour, have become almost pure white flowers.—R. MILNE REDHEAD, *Holden Clough, Clitheroe.*

**Effects of the Winter in Nairnshire.**—On looking carefully over my garden, I find I have not suffered from our late severe winter so much as many, and we have had late frosts and east winds with one night this month the thermometer down to 29°. Potatoes are a little touched, and French Beans also. All my bulbs have flowered better than usual, and the foliage is of a richer green. I take care of all the old-fashioned herbaceous plants, but Roses have the first place, being most liked. I have the old York and Lancaster and Rose Celestial, and of my finer kinds I have only lost about twelve standards. Maréchal Niel, Céline Forestier, and Gloire de Dijon all look healthy, and are furnished with strong shoots and plenty of buds, and on the 16th I picked two lovely Duc de Magentas. None of these had any protection, the last two or three winters all being in the open borders and manured. I have lost no Pansies through the frost. The blossoms of our Horse Chestnuts, Lilacs, Laburnums, and pink and white Thorns are very abundant and rich this season. I have all the old Roses in quantity, Cabbage and Moss. Last year I had Paul Neron 5½ in. across, and one of my Tulip leaves this spring measured 7 in. across and 9 in. long. I have most Roses on their own roots or Manetti, and also standards. We are close to the sea, but sheltered by a good wall from the east winds, though we suffer from high west ones. Nairn is a very

sandy dry soil, and we have little rain, a shower being always welcome. I have the Grape Hyacinth, white and blue, thousands of the latter, 81 long thick rows of them.—C. A. C.

## THE GARDEN FLORA.

### PLATE CXXIII.—EUCHARIDIUM BREWERI.

*EUCHARIDIUM BREWERI* was first described by Professor Gray in the "Proceedings of the American Academy of Arts and Sciences," just sixteen years since, but, occurring only in one locality seldom visited by travellers or collectors, it has remained unintroductory to gardens until now, not, however, without numerous attempts on the part of the writer of these lines to instigate its collection, and hereby hangs a tale. In one instance seed was actually sent him, purporting to be that of the much coveted species. The quantity being but a mere pinch, it is perhaps superfluous to say that it was sown with all due precautions, which in time were rewarded by a fair crop of seedlings. These were carefully pricked off and treated *secundum artem*, being finally planted out in a well-prepared bed of soil. The seedlings grew apace, soon attaining a large size for such a plant, and branched considerably. As the development proceeded, a faint suspicion arose that the plants bore a considerable resemblance to the older species, until at length, when the long-anticipated day arrived, and the first flower expanded, suspicion was changed to certainty—my obliging correspondent had sent me *Eucharidium concinnum*. But, grievous as was the disappointment, one good at least resulted from it—it demonstrated (and here is the moral of my story) how little those cultivators who sow their annual seed in thick patches are in a position to judge of their capabilities and value. Let the amateur for once treat his annuals as the before-mentioned pinch of *Eucharidium* was treated, and my word for it he will be astonished at the result.

The genus *Eucharidium* (a creation of Fischer and Meyer) is closely allied to *Clarkia*, and the authors of the "Botany of California" are of opinion that it should be united to it. Be that as it may, the chief distinction consists in the fewer stamens of *Eucharidium*, which has but four, whilst in *Clarkia* there are eight.

*E. concinnum*, the earliest species introduced, is now too well known to need description, but merits a strong word of recommendation to those in search of cheap material for filling their beds and borders, or I should state that this applies rather to the seed sold under the name of *grandiflorum*, which I take to be a wild form of the original plant.

The only other species at present known is *E. Breweri*, of which the annexed illustration is a truthful representation. As the reader will note, its most remarkable features are its dwarf spreading habit of growth, narrowly lanceolate foliage, and especially the broad orbiculate petals overlapping at their margins and furnished with a narrow tapering lobe from each sinus. Another noteworthy character is the clavate filament of the stamen, but the villosity of the last-named organ referred to by Professor Gray is scarcely seen in the cultivated plant.

The colour of flower is, as the figure shows, a pleasing purple, shading to white in the centre, but the tint varies in different specimens.

**Culture and Position.**—On the first year of cultivation a pretty pure white variety made its appearance, which it is to be hoped may sooner or later re-appear.

The cultivation of the older species, *E. concinnum* and its varieties, is of the simplest











character, that is to say, it would succeed in almost any soil with the treatment of the Californian annuals, bearing well the vicissitudes of our climate. E. Brewer is also fairly amenable to treatment up to a certain point, but it has unfortunately shown a susceptibility to excessive moisture when in flower, which is, however, scarcely surprising in a plant found on the dry summit of Mount Oso. There are grounds for hoping that it will in time become acclimatised, a result which all the readers of THE GARDEN in particular, and horticulturists in general, cannot fail to join me in desiring. I am indebted for the seed of this plant, as well

**Plant Food.**—I notice a correspondent enquires about this and says he used dissolved bones, and considers them so far ineffective, as they stimulate more than they feed. Very likely, though bone-dust is a very good manure, but possibly your correspondent means superphosphate of lime. The cheapest, and on the whole the best, stimulants I have found for plants are closet sewage and manure water made with the manure of bullocks or cows. The late Mr. Joseph Knight, of the Exotic Nurseries, King's Road, Chelsea, a shrewd, far-seeing cultivator and business man, was the first to teach me the value of the first. The second I have also found good for almost everything. In regard to both, weak, little, and



The Double Bouvardia (Alfred Neuner); life size. Drawn June 24, 1881.

as for many other favours, to the generosity and courtesy of Professor Sargent, of the Arnold Arboretum, Harvard University.  
Ipswich. W. THOMPSON.

**The Double Bouvardia.**—We have thought it well to figure this plant exactly life size from the first plant of it which we saw in flower in England at Mr. Cannell's nursery, Swanley. What good culture may do for it in the future remains to be seen, but, in any case, it will be useful to sketch it on its first appearance. Having several times before alluded to the plant, more need not be said here.

often have been my mottoes. By the way, it is needful to be very cautious in trying some manures. I saw Camellia flowers brought off in showers this spring from a slight dressing of a powerful fertiliser, and the plants several months afterwards looked undecided whether to live or die. I noticed, however, the other day that they had got over it. All natural and artificial stimulants should be used weak and often, and of course closet sewage ranges from mere water up to concentrated manure of a potency that might prove fatal to many pot or other plants. Stable drainage or urine is still more dangerous, and should never be used for pot nor any other plants unless in an extreme state of dilution.—D. T. F.

## THE INDOOR GARDEN.

### THE COOL HOUSE FOR ORNAMENTAL PLANTS.

*Can you, or any of your readers, specify in detail the purposes for which a series of well built and planned, but wholly unheated, houses might be used to give a satisfactory result?* A.

1.—The advancing of Rhododendrons in bloom and the growth of the noble Sikkim kinds in districts where they cannot be grown out-of-doors, and also for their protection from the seasons. A house well planted with Sikkim Rhododendrons, Clematises, Lilies, and Chinese and Ghent Azaleas would always be well furnished with leaf and flower beauty. A few of the more hardy of Tree Ferns (*Dicksonia antarctica*, *Cyathea medullaris*) and other hardy fine-leaved plants might be added, but the above four groups alone would be ample if well planted and well cultivated.

2.—The growth of Camellias planted out—the true way of growing them to show their fullest beauty with the least trouble to the grower, and fewest chances of failure.

3.—The growth of a great number of beautiful Ferns, such as the New Zealand filmy Ferns. The position and aspect of a cold house is, as a matter of course, very important. Thus, that for filmy Ferns should have a north or north-east aspect. I would build the walls either hollow or 2 ft. thick of any rough stone best afforded by the locality. The roof might with advantage be double glazed. In such a house all the European, New Zealand, and even some tropical filmy Ferns might be well grown. Camellias and Tree Ferns might well furnish a rather shady, cold house, and other plants might be added—I mean such plants as would withstand the syringing and closeness which is essential during April and May, when the Camellias would be making new growth.

4.—The gentle forcing of beautiful hardy flowering shrubs, securing at the same time an early bloom and flowering, free from accidents of frost or rain or wind. Examples of shrubs to be treated in this way among many might be Lilacs, Chinese Plum, Daphne, Weigela, Maule's Pear, Tree Pæony, Veronicas, Clematises, Tea Roses, Magnolias (*Campbelli*, *fuscata*, and others), Abutilons, *Solanum jasminoides*, Clematises, *Fremontia*, *Calceolaria*, Fuchsia, Azalea, &c.; indeed a house of such might be a most interesting and useful feature.

5.—The advancing in bloom and protection in bloom in like manner of a great number of the finest hardy plants and hardy bulbs, Christmas Roses, Narcissi, Snowflakes, Gladioli (early), Solomon's Seal, Lily of the Valley, Globe flower, Phlox (early), and numerous other plants. All kinds of hardy plants and bulbs, such as Hyacinths, Narcissi, *Dielytra*, *Ixias*, *Sparaxis*, *Calochortus*, *Brodiaea*, Tulips, hardy Orchids, Lilies, &c., grow and bloom best in a cold frame, or, what is even better, because more convenient, a cold house. In the early spring months more especially such a house gives us beauty unattainable in any other way.

6.—The growth of shrubs, trees, and plants from cool temperate regions, New Zealand, Chili, and others, many of the plants from which are hardy enough to endure our climate, but just require the aid of a cool house to allow of their perfect beauty of bloom being developed. *Lapagerias*, white and red, *Embothrium coccineum*, *Sarmienta repens*, greenhouse Rhododendrons, some Passion flowers, *Habrothamnus*, Cape species of ornamental *Asparagus*, *Myrsiphyllum*, *Bomarea Carderi*, and other kinds would succeed.

7.—The planting out of a great number of subjects, now grown—and badly grown—in pots,



as, for example, the *Camellia*, *Azalea*, hardy Palms, and numerous others. The arrangements in the ordinary heated houses prevent the formation of proper beds and borders for planting out, so that the plants may have all the benefit of abundant light, as well as a free root-run in good soil.

8.—The formation of more picturesque houses without stages (or with but few), for the sake of simpler and more natural effects, which may easily be secured with less trouble and cost than at present.

After all, a cold house is very like a paint-brush or a gun—not of much service unless rightly used. A good cultivator will effect much with the poorest of appliances, and a bad one will not effect much with the best. If a man—I mean a proprietor—was bold enough to say to a good gardener, “Now, I will build you the best of structures, such as you require in all ways, but without a fire-place or a yard of flue or piping—these I am determined not to tolerate.” If this was done once or twice, and people saw the results gained, we should soon have cold plant houses springing up everywhere. It is a mistake to think that heat-loving plants are more beautiful than those of temperate climes. A cold, moist, shady, and low-lying house is better adapted for hardy Ferns, Orchids, *Darlingtonias*, *Sarracenias*, &c., than for light and sun-loving flowering plants. A cold, shady house of the proper kind, low and close, would grow North American Orchids, Pitcher-plants, and Ferns to perfection, and would be interesting all the year round. B. R.

**Peat for Tuberous Begonias.**—In THE GARDEN (p. 663) Mr. Smith, of Newry, writes as follows in reference to these Begonias: “I distinctly object to the introduction of peat into the compost in which these beautiful plants grow, for, according to my experience, they abhor peat.” My tuberous Begonias this year were first potted in the following compost, viz., good loam and peat in equal proportions, and a sprinkling of silver sand. On the 4th of May they were repotted in the same kind of compost. They rooted and grew amazingly fast, and at the present time are flowering in the most satisfactory manner; the foliage, too, is looking remarkably healthy. I cannot, therefore, believe that they “abhor peat.”

GLOXINIA.

**Winter-flowering Violets.**—This is a critical time for these, for if neglected now no amount of attention later in the season will make them satisfactory; whereas if well treated now they are sure to flower well during the winter and spring. Presuming that runners were planted in lines 1 ft. apart each way on rich well prepared soil, screened from the mid-day sun, and kept clean by hoeing, and also well watered during drought, they will now be strong plants and beginning to send out runners to form another crop of young plants, and if these are allowed to grow for any length of time, the strength of the plant will be so far exhausted that there will be no bloom in winter, for it will take the plants until the following spring to recover the loss occasioned by growing runners instead of forming a strong crown full of flower-buds; therefore keep all runners cut closely off with a pair of sharp-pointed scissors as fast as they are observed. Keep the soil clean by hoeing, and moist by copious waterings in dry periods, and when the plants are transferred to their flowering quarters in September they will be bristling with flower-buds, that will quickly reward one for all care bestowed on them. —JAMES GROOM.

**Old n. New Cyclamen Seed.** It is generally supposed that *Cyclamen* seed germinates most freely when sown as soon as ripe, many growers asserting that it should never be allowed to thoroughly harden, but be committed to the soil as soon as it falls from the capsule. Until

last season I had always held this view of the matter myself, and was consequently much surprised to experience the very reverse. Having in my possession some seed of a good strain, some four years old, which had been lying by forgotten in a cool, dry place, I sowed it on the very day that I committed to the soil some newly-ripened seed. The pots containing both kinds of seeds were placed in the same frame, and treated in exactly the same manner. Judge, therefore, of my surprise when a difference of ten days was observable in the germination, and that in favour of the old seed. It may be said that the new seed was not properly ripened; all I can say is that it fell from the capsule, and nearly every seed germinated, although, as just stated, at a later period. Almost every grain of the old seed came up, and very finely, thus proving that in the case of the *Cyclamen* perfect reliance may be placed in seed several years old, provided it has been properly kept. My own impression is that nothing is gained by sowing from the pod, but that the seed should be laid up in a warm, dry place for a fortnight, in order that it may harden, otherwise it passes some considerable time in the earth before making any attempt to swell. I think, however, that after four years germination cannot be relied on, as I sowed, by way of experiment, some seed five and six years old, of which but a small portion came up.—J. C., *Byfleet*.

## ORCHIDS.

### THE BEST DENDROBIUMS.

THIS genus of Orchids contains some of the most desirable and useful of flowering plants, and may with confidence be recommended to those who have not had much experience in the culture of Orchidaceous plants. The question has more than once been asked in THE GARDEN, Are Orchids easy to grow? When that question is asked, one expects as a matter of course that the questioner knows something about the cultivation of ordinary greenhouse or stove plants. Orchids are as easy to grow as the largest proportion of these, and much easier than some of them; and if a person who understood something of plants was to put this question, I would certainly answer it in the affirmative. *Dendrobiums*, or at least the best of them, are easily managed. Some complain that their Orchids grow well, but do not flower, and that *Dendrobium nobile* will not grow from the base of the stems, but persists in throwing out growths up the stem. It is easy to see that here a mistake in culture has been made. If a *Dendrobium* grows strongly, but does not flower well in its season, it is certain that it has not had a good season of rest. If *Dendrobium nobile* throws its growths from the old stems instead of from the base, the plants have been kept too dry at the roots. Only yesterday a complaint was made that *D. nobile* did not start from the base of the bulbs, but from the stems, and, on enquiry, it was admitted that the plants had been kept dry after flowering. Now there are some Orchids, many, indeed, which ought to be kept dry after flowering, but not *Dendrobiums*. Most of them are now making their growths and rooting freely, and at that time they must be well supplied with water. How much water should we give them? some may ask. The only answer one can safely give to this question is, That all depends on circumstances. Watering a plant is one of the simplest operations in gardening, and yet few will take the trouble to do it well. It ought to be done without disturbing the compost in which the plants are growing, and in the case of Orchids a fine-rosed watering-pot or a syringe should be used, and in the case of *Dendrobiums* in free growth the water ought to be applied before the com-

post is very dry; but as the plants ought to be growing in a hot-house with a high temperature and moist atmosphere, they do not require so much water as if they were in a drier place. Rain-water ought to be used when it can be obtained, and always in a moderately warm state, made so by standing close to the hot-water pipes in the atmosphere of the house.

Some give manure water to *Dendrobiums*; if this is done, it ought to be very weak and clear. Cow manure should be used in preference to any other. I do not recommend the use of manure water, but must say that good results have followed from its application; at the same time, I believe that where manure water is used year after year, the plants subjected to such treatment will most likely be short-lived, although they will grow and flower stronger from its use.

*Dendrobium nobile* is one of the most useful of its genus, and withal one of the most beautiful and most easily obtained. A large specimen of *D. nobile* is a striking object, much valued by exhibitors, but for ordinary decorative purposes a number of small plants are better, as they can be had in bloom in succession from Christmas to July. We have bloomers of this species in good condition now (July 2), and have had them in November. The treatment now is to water freely, keep the plants in heat until growth is completed, and then place them in a greenhouse, removing them into heat as they are required. During winter no more water should be given than just to keep the stems from shrivelling. The best time to pot is shortly after flowering. Use good fibrous peat, Sphagnum, and broken charcoal and clean potsherds.

*D. Wardenianum* is also a grand species, and one which succeeds better in a basket than in a pot. It does equally well in the teak baskets, or in shallow pans suspended from the roof. This species was very scarce some years ago, but recent importations have caused a considerable fall to take place in its price; unless, however, there are more importations, its value will increase, as it cannot be propagated freely like *D. nobile*. It requires much the same treatment during the growing and resting period as the last named species.

*D. Dalhousieanum* is a noble, free growing evergreen species, which produces stout stems over 6 ft. in length. It should be grown in pots, and its growth should be made now. It will grow late into the autumn unless it is afforded a high temperature through the growing season, in order to induce rapid growth. If the plants when in flower are moved into a warm greenhouse or conservatory, the flowers last quite two weeks without fading; whereas in a warm house they will not last more than a week. The large flowers on pendulous spikes are very effective in a large conservatory.

*D. thyrsoiflorum* is a very showy species, and the best of the species with dense drooping spikes of yellow and white flowers; there are some varieties of it better than others.

*D. formosum* and the variety *giganteum* are both exceedingly beautiful and useful. They do best when grown in baskets hung up near the glass in the warmest house, and they do not like to be kept quite so cool in winter as some of the other species. The flowers are large, pure white, with a yellow centre to the lip, which is also white. The blossoms when kept will last two months in full beauty, and are well adapted for choice bouquets.

*D. devonianum* is a very beautiful pendulous growing species, and one which does best in a basket, producing its flowers in June and July. The young growths are well advanced before the flowers open on the pseudo-bulbs of the previous year. During the growing season the young growths should be syringed daily at least.

*D. Falconeri* is another variety with slender pendulous growths, which require frequent



syringing and a moist atmosphere. When the plant is in full growth it ought to be rested in the greenhouse, and should receive but little water during the resting period, only enough to keep the pseudo bulbs from shrivelling too much.

J. DOUGLAS.

#### ODONTOGLOSSUM CRISPUM.

THIS, as has just been stated (p. 12), is one of the most variable and beautiful of all cool Orchids, and a universal favourite wherever Orchids are grown. It is imported by the thousand, and yet the supply always seems less than the demand. One of the greatest charms of the plant consists in the fact that while all its varieties are beautiful, no two individuals have flowers exactly alike; we therefore thus obtain flower beauty of the highest type without that satiating sameness which stereotyped likeness of form and colour invariably produces. One of the reasons why Orchids generally are such favourites is their protean variability, and in the case of *O. crispum* variability of the most beautiful kind seems to be the rule rather than the exception. The ground colour of its blossoms varies from the purest white through all shades of flesh, and in some cases they are heavily flushed with rose or flesh colour. There is also a race of which the ground colour inclines to delicate sulphur yellow, and even where the ground colour is white its variety is very extensive. Some sorts are remarkable for their purity of petal, while others are richly spotted with purple, reddish brown, or ruby. It is a native of the mountains of New Granada, and was formerly very abundant near Bogota, at an altitude of from 5000 ft. to 8000 ft. By cultivating this species in quantity, it may be had in blossom all the year round, each individual inflorescence lasting in perfection for a month or six weeks in a cool house. When well grown no other Orchid surpasses it in beauty and usefulness, so far as cut flowers for decorative purposes are concerned. The coloured plate in last week's GARDEN gives one an excellent idea of the beauty of the plant.

F. W. B.

**Orchid Culture.**—I have read and re-read "J. C.'s" remarks on this subject (p. 656, Vol. XIX.), and I cannot see how he can mistake bulb or leaf growth for flower-spikes. True, the leaf growth in the case of *Cœlogyne cristata* is not much unlike a strong flower-spike, but anyone acquainted with a *Cœlogyne* would soon discover whether it was making growth or flower-spikes, or resting. Orchids are easy enough to grow when one knows how to treat them; and if "J. C." has a good collection of them, his best and cheapest way is to get a man who understands their culture.—A YOUNG GROWER, *Birkdale*.

An "Orchid Album."—Under this name Mr. B. S. Williams proposes to publish in monthly parts a series of illustrations of Orchids, drawn by Mr. N. Petch, with a descriptive text from the pen of Mr. Thomas Moore, and notes on cultivation by Mr. Williams. Each part will contain four plates.

**Wanted, an English Name.**—Will any kind friend tell us how to christen harmoniously *Funkia*? A gentleman who sometimes assists us with a little shorthand writing occasionally spells it "Phunkia." Neither will do. On referring to "Hardy Flowers" we find we have met the difficulty in no brave way by saying in one case the "white-margined" *Funkia*, and in the other the blue *Funkia*, neither of which are happy. The question is really an important one, because, apart from the flowers of *F. japonica*, which are beautiful and fragrant, other species have some beauty of flower, and several are precious from their grace of foliage and habit; moreover, they have a quality which is rare in foliage. Some leaves sent us by Miss Jekyll, thrown carelessly into a jar, maintained their freshness and rigidity more than a week, being at the same time the perfection of form, of grace, and leaf. Mr. Burbidge has sent some leaves of Siebold's *Funkia*

13 in. long and 10 in. wide, counting the blade only. Some of our readers who can place them fresh from the garden in water might be able to test their endurance in a room, and in any case will learn their great value as room plants. Any one who finds a happy and appropriate English name for *Funkia* will receive a collection of the cultivated species at the expense of a well-known bulb grower, in contrition for his having inflicted more barbarous names on the horticultural community than any other person.

## THE KITCHEN GARDEN.

### NOTES ON LETTUCES.

IN winter when Lettuces are not much in use except in salads, their merits are not thought much of so long as they can be had fairly good; but in summer it is very different, as then everybody who can get Lettuces eats them readily without any accompaniment, and when thus used it is easy enough to tell a good Lettuce from a bad one. Lettuces may be regarded as one of our chief kitchen garden crops in summer, and although their cultivation is most simple, rich ground being about all they require in order to insure perfect development, yet the selection of variety is of much more importance, some running into flower before little or any firm crispy centre is formed, while others do not do this until long after they are well hearted. In *Cos* varieties the old Paris green and white have long been favourites, and no new kinds of recent introduction have fairly taken their place as summer Lettuces. Under ordinary culture they attain a fair size, but not so large as some. In this respect *Kingsholm Cos* was at one time thought to be unsurpassed, but it is now beaten by Sutton's Superb White. We have had them side by side, and the Superb always kept the lead in size and quality of tender centre.

Of new, distinct, and improved Lettuces we have four from Reading this season. We have had many new Lettuces on trial, but never any equal to them. One is named Golden Ball. It grows larger than that good little Cabbage Lettuce Wheeler's Tom Thumb, folds in equally well and compactly, and is all that could be desired as regards flavour and crispness. It catches the eye of every stranger, and has been much praised for its beautiful colour and firm, well swelled heads. Quite different from this in colour, but identical in quality, is another Cabbage variety named Marvel. When small the colour of this one is very dark purple; as it becomes older this becomes a little paler, but to the end it remains an attractive purple colour. Both these are sure to become favourite summer Lettuces. The other two are *Cos* kinds, the Mammoth promising to be a weighty rival to the Superb White already referred to; but the new one is green in colour, the only difference perceptible between them. The other is more of a winter Lettuce, and may be noticed at that season.

Amongst winter Lettuces, Carter's Northern King is a promising new sort. Of old kinds which will not be easily driven out of cultivation are the Black-seeded Bath, Stanstead Park, Hammersmith, and All the Year Round.

**Fine Asparagus at Midsummer.**—Mr. J. R. Simpson, St. Botolph's, Colchester, sent us a wonderfully fine sample of Asparagus on the first day of July. It is the same bundle that took the prize at the Essex show a day or two previously. This Asparagus was good and regular throughout, and blanched nearly to the tops, as all the Asparagus grown by the best market gardeners in this country is. But the 5 in. or 6 in. of white blanched stem was perfectly tender to the bottom when well cooked, as all fresh Asparagus is.

**Prong Hoes.**—For earthing up Potatoes or any other garden crop, these are preferable to either flat or swan-necked hoes, as they pulverise the soil and earth up at the same time; in fact, they are a combination of a fork and hoe, and in

counties where they are not so much in use as here, they would be well worth a trial. They are useful for a variety of purposes, but especially for breaking down ground that has been roughly dug up, and for separating weeds, such as Docks or Couch Grass, from it, as well as for purposes attending summer fallowing or cleaning of land.—J. G. L.

**New Peas.**—I have found American Wonder and Day's Early Sunrise to be two first-rate kinds. I sowed both under the same conditions in the open ground on February 5. The pods of American Wonder were full and quite ready for picking on June 6, and Sunrise on June 10. Another sowing of Sunrise made on March 3 was just a week behind the first sown as above. Both kinds have given great satisfaction indoors at table. As regards crop, Sunrise is especially good, being covered with pods hanging in pairs mostly. Since the late rains American Wonder is throwing out fresh growth and buds, looking like giving another good picking. I have for two or three years given up growing the early white round kinds of Peas, as they are not nearly so good in flavour, nor do they give such satisfaction indoors as other kinds, such as Sunrise, &c., and as for the four or five days they may perhaps come in earlier, we do not think that worth attention.—J. H., *Mid-Sussex*.

**Hybrid Tomatoes.**—How considerably the outdoor crop of these may be accelerated is evident when plants turned out of 6-in. pots at the end of May, 12 in. or 14 in. in height and very robust, are compared with the tiny things in 3-in. pots with which some are content. The larger plants have a good month's start, and have great advantages, being enabled to ripen the larger portion of their crop during August. If there is no sparing of the knife to keep out all superfluous shoots, few plants improve faster under the influence of liquid manure than does the Tomato. Through the past spell of dry weather I have given my plants liberal doses from a cesspool, and they like it immensely. A mulching of long manure about the roots is also of great service, for the roots, when well fed from the surface, will come up in search of food. I am looking with much interest for the result of a cross made last year with pollen of the Green Gage Tomato upon the large red Stamfordian. All the plants resemble each other so much in foliage and habit that I fear I have made no change; yet one feature always before found in the Stamfordian is wanting. Previously I had always noted that the first expanded flower upon a truss was larger than the rest, and of course always produced the largest fruit. There are no such large blooms now to be found on any of the plants. We have such good kinds of Tomatoes and some so handsome and prolific, that it will be difficult to excel them in these particulars, while I do not think the yellow kind very desirable as regards colour. Certainly it is not so acceptable as is the bright red hue. It is in the direction of flavour and aroma that the hybridist should work; and if we could get a Tomato that had lost the usual mawkish sweetness and possessed instead thereof a piquant flavour even pungent or acid, we might find it to be a useful dessert fruit. No one can tell what may result from inter-crossing, but we have few allied plants that can help in the direction in which we would like the Tomato to go.—A. D.

### SEASONABLE WORK.

WITH a good supply of manure, and a breadth of ground under rather than over his actual requirements, the thrifty gardener will now have every spot fully occupied with advancing crops. As early crops of Peas and Cauliflowers, which generally occupy warm borders, are cleared, the order of the succeeding crop may be reversed by planting Veitch's Autumn Giant Cauliflower and a good dwarf Pea for coming in late in the autumn. All kinds of winter greens and spring Broccoli must be planted out as they become strong, and if a north or west border is available a good breadth of Walcheren or Stadtholder Cauliflower put out now will do good service. An early kind of French Bean should be planted out on a warm sheltered border for giving a late supply, but without means for protecting from autumn frosts the crop is a precarious one. The dry harsh spring having favoured the rapid spread of one of our most lively enemies, the Turnip-fly, crops of this use-



ful vegetable are by no means plentiful, but, patience, perseverance, and wood-ashes must be steadily applied. In this locality all the Brassica tribe, Seakale and young Lettuce plants, have been devoured, and now Horseradish, by way of change, is likely to share the same fate. The last sowing of Ma row Peas should be got in at once, either in trenches prepared as for celery, or on deeply trenched ground. The term "sowing" of Peas is an anomaly, as all Peas should be planted in flat-bottomed drills, 9 in. wide, and the Peas should be placed 2 in. apart. Attend well to mulching after rain in preference to giving dribbles of water, and keep the hoe constantly at work, as nothing adds more to the beauty of a place than a well kept kitchen garden.—W. COLEMAN, *Eastnor Castle*.

## THE GARDEN IN THE HOUSE.

### HOW TO MAKE A BOUQUET.

BY AN ARTIST.

TAKE first a mass of white, it may be a truss of white Geranium, a double white Stock or a Clematis, or for a small bouquet a bunch of the small double Pyrethrum; then scarlet, which to an artist means orange, as, for instance, a double scarlet Geranium, Tom Thumb Nasturtium, or any brilliant orange, though that colour is not so abundant as it ought to be; put any of these next the white on one side of it. Then take red, a bright rose, and the brighter the red the nearer it should be to the white, so that other duller reds may be beyond it (by red is meant all colours of crimson, but red is the true designation); place these on the other side of the white. Some very dark, almost black, flower may be also brought near the white, but only a very little of that colour, and beyond the scarlet a very little bit of blue, such as that of an Emperor William Pansy or a little sprig of Lobelia. Beyond the red have purple and yellow brought together, and on the other side Picotees, which, although rich in colour, are not prominent, though any flowers that have broken colours will do; beyond these again bring in blue in some mass and your taller flowers, as Pentstemons (the blue kind makes an admirable background) are always to be had, dark-coloured Fuchsias (some flowers or leaves of a brownish hue should interpose beyond the blue), and the last to introduce should be the Maiden-hair Fern, which certainly makes at all times a very pretty background. Make this bouquet up in your hand, and avoid too much formality, as the colours will generally arrange themselves with sufficient effect and force, though they may intermix a little. A bouquet has generally only one view, in which case it should slope gently upwards, then the white should come near the bottom. If it is to be seen all round the white should be in the centre, with the above arrangement of colours in masses round the white. When your bouquet is large enough tie it round in the middle of the stems, cut them off evenly, and drop it into a vase of water. Two principles may be followed in making up a bouquet—one harmony and contrast of colour, the other force of light and shade; whichever is chosen to begin with, pure white is absolutely necessary; even if only composed of a single white flower it should be the largest mass of the whole.

**Yellow Flowers at Night.**—Is yellow a useful colour for table decoration?—*ETA*. [Some of the best dinner table decorations I remember were of pale yellow Tulips early in the season, later of yellow Day Lilies, or of Eschscholtzia, and the most glorious I have ever seen were made of bold masses of Nasturtium all shades of yellow and orange.—*J*]

**The Best House Plant** is undoubtedly *Aspidistra lurida* well grown. This plant we have seen in various countries tested in the most thorough manner as a house plant, and it never fails to do well. Last autumn we introduced two plants to a London room, one of these and one of the best of the *Dracenas*; the latter perished from gas or other evils in about six weeks; the *Aspidistra* has been ever since a picture of health, and a

most picturesque object too; far better in form than any *Dracena*, because when well grown its leaves are so free and bold presented to the eye at many different positions, and not regular repetitions of the same as in the case of the *Dracena*. Our plants came from Herbst, of Richmond, who grows it well for the London market. The long bold stalks and fine dark green glossy leaves are superb. It seems to require no care whatever in culture; and oddly enough, if forgotten for six weeks or so in the matter of water, it does not seem to mind it much. This happened to our own plant several times, but when placed in a bucket of water, and allowed to have a good drink it seemed to get all right again.—*Field*.

### A GARDEN INDEX EXPURGATORIUS.

WE seriously meditate the making of an index, after the Roman method, of all the plants unworthy of cultivation. It is very well to say these things are a matter of taste, but we do not believe in that way of settling questions. Scores of plants are under cultivation, taking up much room and eating fine silky loam, which should give place to really beautiful and distinct ones. Our botanic gardens are a case in point. Of course they ought to represent the greatest variety of vegetation possible, but we think that even they might do that while helping us to a more beautiful garden flora. We could mention many weedy plants grown in botanic gardens that are not a whit more useful illustrating an Order or Class to which they belong than the more beautiful plants would be. Indeed, in many of our nurseries of late years, where plants are only grown for commercial purposes, one might often illustrate an Order better than in any botanic garden. Whatever excuse there may be for a botanic garden growing weedy types of plants, and perhaps having masses of things that grow in the hedges or fields around, there can be little for a private garden in which we expect to find plants grown for their beauty, and not representations of things we see in the hedges or ditches around, or subjects otherwise valueless for cultivation. The subject has many aspects. Sometimes plants are objectionable, not only from the short period during which they flower, and the great space they take up, but also from the danger there is of their over-running precious space and exhausting precious soil. This is true of a second or third rate Aster and many a Golden Rod. Sometimes a plant, not objectionable in itself, may be quite unworthy of a place in consequence of the greater beauty of an allied plant. For instance, numbers of *Silenes* are in cultivation where one or two of the very best would amply satisfy. Even in a botanic garden we should not grow more than three or four of the perennial Catchflies. Sometimes we come to a genus that might be said to be all beautiful, like the *Speedwells*, but what a lot of weak, poor, short-lived things are these! No plants are more in want of selection. One hint our readers might take, that is, that it would be well to place all new comers not known to them on their trial in a nursery plot or border to test their value or fitness for their garden, and to increase them if they are worth it at the same time. One of the commonest sights is a "rock garden" overrun by certain rubbishy plants that never ought to have been allowed to grow near it. How often, alas, does one see the growth of a Dead Nettle or St. John's Wort or Willow Herb, or even worse things, which have driven the souvenir of the beauty of a true alpine plant from what might be properly called an alpine garden. No one can even in any possible way connect the brilliancy and the exquisite forms of the higher mountain plants with the weedy subjects in question.

## GARDEN DESTROYERS.

### OAK CATERPILLARS.

THESE are so numerous this season that scores, aye, hundreds, of Oak trees are just now almost quite denuded of leaves. I enclose a few specimens of these Oak leaf-devouring pests for identification. One of them I believe to be *Tortrix viridana*, which is very common some seasons; it is a leaf roller. I have seen extensive tracts of woods in the north of England and in the midland counties at this time of the year almost bare of foliage through the ravages of this Oak-leaf eating caterpillar. I do not remember the Oak trees here ever presenting so miserable an appearance. The Oak woods proper on the clay lands are those so attacked; the Oak trees in the upper woods on the greensand are almost free from the caterpillar. Probably we have had these Oak-eating species in the woods as numerous other seasons. The reason I attribute to their playing such havoc this season is on account of the scarcity of starlings, through so many dying last winter from hunger. In former seasons the Oak woods at this time of year during the day were all alive with flocks of starlings flitting from tree to tree, keeping up a regular chatter, but at the same time hard at work eating caterpillars; whereas the woods are perfectly quiet this year, and hardly a starling to be seen. The caterpillars therefore seem to have it all their own way, there being no natural enemy to keep them in check. The little copses in the hangings of the downs are the favourite roosting-places of the starling. Thousands of them used to congregate in the summer evenings in the high trees around here before taking their flight to the downs. This season I have not seen any in their usual places of resort. I hope the few that are spared will have a good breeding season and soon become plentiful again, for I believe it to be the most valuable bird that we have as an insect destroyer, and one that does the least harm to garden or field produce.

*Longleaf.*

GEORGE PERRY.

[The long brown looper caterpillar which you forwarded is *Biston hirtaria*; the shorter brown ones with paler heads, *Cerastis vaccini*. The others I am unable to give the name of, most of them were dead and decomposing. In future do not pack caterpillars with damp Moss. Probably some were *Tortrix viridana*, the larvæ of which do most injury to the foliage of Oaks. Some of the caterpillars were affected with white thread-like parasitic worms (one of the *Gordii*), some of which were nearly 6 in. long.—G. S. S.]

### THE AMERICAN BLIGHT.

(*CHIZONEURA LANIGERA*.)

THIS well-known pest is one of the worst foes which cultivators of Apple trees have to contend with. When once this insect becomes established in an orchard it is very difficult, if not impossible, to completely eradicate it, and the damage it does to the trees is very considerable; at times trees have been entirely killed by these little insects, so that measures should be at once taken for their destruction as soon as any are discovered on a tree, for they spread very quickly, the eggs and quite young larvæ being easily blown, with small pieces of the cottony substance with which the colony is covered, from one tree to another. The best means of destroying this insect appears to be by scraping off the loose rough bark from the stems and branches and removing the earth from the base of the stems and roots. Before the scraping process is commenced, a sheet or cloth should be laid on the ground, so that everything which is scraped from the tree can be collected and burnt. The tree should then be well scrubbed with a hard brush and one of the following recipes which are much recommended by various persons: Coarse petroleum oil;  $\frac{1}{2}$  ammoniacal liquor to  $\frac{3}{4}$  water; strong brine; soap-suds; Tobacco water (1 lb. tobacco to 4 gallons of water), or the trees may be painted with  $\frac{1}{2}$  peck quicklime,  $\frac{1}{2}$  lb. flowers of sulphur,  $\frac{1}{4}$  lb. of lampblack, mixed with hot water till of the thickness of paint and used when warm;



or 7 lb. of soft soap to 1 lb. of train oil, two or three handfuls of soot and flowers of sulphur, mixed with a pailful of lime water; then add sufficient clay till it is about as thick as butter. When the compound dries it will very probably crack; the cracks should be filled up with clay. Syringe the trees, using a fine rose, with 1 lb. of soda dissolved in a gallon of rain water and well mixed with 1 pint of spirits of turpentine; then add 9 gallons of water. A small brush dipped in turpentine and brushed over the insects is a very effectual way of killing them if they have not spread much on a tree. Whichever of the above methods are used, care should be taken that the insecticide is well worked into the crevices and rough places in the bark, for it is in such places that the eggs and young are likely to escape if this operation is not properly performed.

This insect usually selects some part of the tree where there is an inequality in the bark, and there forms a regular colony, which may be easily detected by the white cottony down with which these insects cover themselves. These white patches make the trees look as if they were covered with mildew in those parts. The insects, by constantly puncturing the bark with their probosces and drawing off the sap, bring the tree into an unhealthy condition, and cause the parts attacked to swell and form warts and knobs. It has been a matter of much discussion whether this insect has been imported from America or not. Mr. Buckton, in his work on "British Aphides," says that Dr. Asa Gray, the eminent American naturalist, entirely denies that we received this unwelcome visitor from the United States, but that Sir Joseph Banks traced its origin in this country to a nursery garden in the neighbourhood of London where some Apple trees had just been received from the other side of the Atlantic. The ravages of this insect were confined at first to the vicinity of London, but it soon spread into Devonshire, where it did so much damage that the destruction of the cider orchards was threatened. It has since spread into Germany, France, and Italy. At present there seems to be no chance of this insect becoming rare. The severest weather of our winters does not appear to kill the American blight, for I found them alive on the branch of an Apple tree towards the end of January, 1880, just after the intense frost of that month; and Mr. Buckton mentions that he has found them in December when snow was on the ground, and the thermometer was standing at 21° Fahrenheit. It is supposed by many that they usually pass the winter beneath the surface of the soil, feeding on the roots of the trees, and no doubt they occasionally do so, but it seems very doubtful if this be their ordinary habit. Probably what more usually takes place to insure this insect from becoming extinct is, that a few females in each colony survive the winter on the stems or branches of the trees, and commence to propagate their species as soon as the sap begins to rise in the trees, and, eggs laid the previous autumn hatching about the same time, fresh specimens are produced. As before mentioned, this insect soon spreads from tree to tree when once it is introduced into an orchard, for the eggs and young larvæ are easily wafted about by the wind attached to small pieces of the cottony substance, and some of the females are winged and able to fly from one tree to another. These winged females are far from common in this country, and I have not been able to obtain a specimen to make a drawing from, but as they very closely resemble the common winged green fly in general appearance, this omission in the woodcut is not of much importance.

The American blight belongs to the same family (the Aphididæ) as the common Rose aphid and the Peach aphid, and, like them, will breed for several generations without the intervention of the male. The genus *Schizoneura* contains six species. The females in the apterous or wingless state of *S. lanigera* (fig. 1), the species now under consideration, are, when full grown, about one-tenth of an inch long and tolerably plump, with the joints of the body well defined; they are

of a slaty or leaden black, or dark brown colour; the front portion of the body is sparingly covered with small short tufts of a cottony-like material, but the after part is thickly covered with it, and it forms a long train behind the insect of about its own length. This peculiar substance is secreted by glandular organs on the abdomen. According to Mr. G. Buckton, this secretion is not of a waxy nature, as one might at first imagine, but it is more like silk; it is insoluble in water, alcohol, or a solution of potash: it scorches into a brown mass without melting, and smells like burnt feathers. This covering is doubtless a great protection to the insect against unfavourable weather and the attacks of parasitic insects and carnivorous grubs. The young larvæ are pale yellow in colour, and they gradually attain the colour of the adult insect. Their probosces or beaks are at first very long in proportion to their size; in fact, they are so long that they protrude beyond their bodies, so that the larvæ look as if they had tails (figs. 2 and 3). As they increase in size their beaks become smaller, so that when they have attained their full size their beaks are comparatively very short. The larvæ

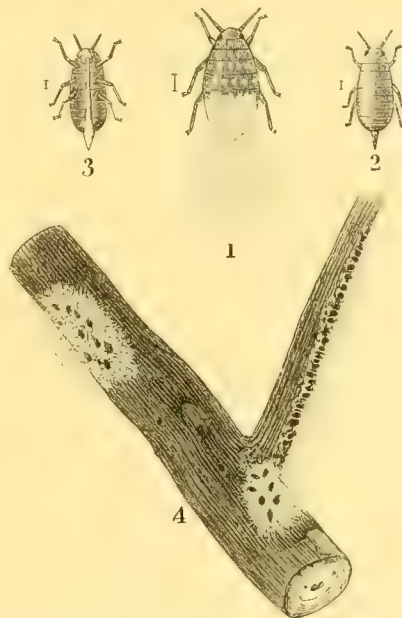


Fig. 1, Wingless Female (magnified); figs. 2 and 3, Larvæ (magnified); fig. 4, Apple branch with American Blight (natural size).

change their skins several times, after each moulting becoming more and more like the perfect insect. G. S. S.

**Wasps.**—J. D.—The wasps are all queens; had they lived each would have formed a nest.—G. S. S.

**Beetles.**—J. D.—The beetles attacking your Cauliflower and Cabbage plants are a kind of weevil (*Centorhynchus contractus*) and a Turnip fly (*Phyllotreta undulata*). The latter are those with a pale stripe down each wing-case. They may be caught by drawing a strip of canvas nailed lengthwise to a lath (newly painted, tarred, or covered with birdlime) over the plants, sprinkling the plants with an infusion of Wormwood or Quassia chips, which makes the leaves distasteful to them. Burning weeds to windward of the Cabbages, so that the latter get well smoked, is also a useful remedy if quite young plants are attacked. Push them into rapid growth as quickly as possible.—G. S. S.

**Gooseberry Caterpillar.**—Thinking that the Gooseberry bushes of your readers may this year be afflicted with the destructive larvæ of the Gooseberry sawfly, which last season played such havoc, I send you an account of my experiences in my efforts to destroy this plague. Some six weeks back my trees were revisited by their old enemies of last year. Acting on the advice of a friendly miller, who was the only fortunate preserver of his crop last season in these parts, I made my gardener sprinkle the trees with "middlings." In a few hours the trees were entirely free from their enemies. Last week they

reappeared, but a repetition of the dose had a like effect. Can any of your readers tell me of any remedy for the Hollyhock disease? Last year I lost all my plants just as they were coming into bloom, and now I find that some of the young seedlings planted in another part of the garden are just beginning to show signs of the same malady.—ARTHUR H. LANCASTER, *Waltham*.

**Fir-tree Oil Insecticide.**—We, *Journal of Forestry*, have freely tested this insecticide on all manner of insect-vermin, and it has proved more than equal to our expectations. Applied according to the directions furnished with each sample, it is generally effective and safe in its use. Fir-tree oil mixes freely with water, while petroleum and other oils do not. For plants and trees it may be used with a garden engine, syringe, or brush, or by dipping; in fact, it is of the easiest application, and possesses neither poisonous properties nor a disagreeable smell.

**Insect Pests and Forest Trees.**—A correspondent of the *Journal of Forestry*, writing from the West Highlands, says: The Alder trees in this part of the country are quite smothered with a white blight, similar to that which appeared on the Larch trees here last season. Both Alder and Beech have to support an insect plague as well as the Larch. The appearance of these trees is affected by the myriads of insects, whose cottony-like surroundings whiten the foliage. A serious blight of caterpillars is seen on the Oaks in many parts of England. In Windsor Forest we have seen hundreds of acres of almost leafless trees. In the latter place we are informed that, while the *Quercus pedunculata* are without exception stripped and bare, the *Q. sessiliflora* or Durmast Oak is quite untouched. In the Forest of Dean, too, complaints are general of the wide extension of blight in the forest Oaks this season, caused by the larvæ of a small green moth. Many of the trees are almost bare. The pest is aggravated in that district by the scarcity of birds, particularly starlings and rooks, which formerly preyed upon the insects.

## MARKET GARDEN NOTES.

**Manure.**—Dr. Lawes tells the readers of the *Rural New Yorker* that his experiments at Rothamsted lead him to the conclusion that the influence of one dressing of manure may not be entirely at an end for twenty or thirty years, or, perhaps, even a longer period. "On the whole," he says, "as regards the question of economy, I am therefore inclined to advise that the manure should be carted from the yards to the field, and there be left in a heap until required for application, or that it should be applied direct from the yards. All labour expended upon manure adds certainly to the cost, but does not add with the same certainty to its value."

**Market Ferns.**—The varieties which are in demand in the market may be taken as representing a group of considerable value for general furnishing and decorating purposes. Of these we may make special mention of *Pteris serrulata*, *serrulata cristata*, and its fine variety *grandiflora* (a very desirable one), *P. argyrea*, *cretica*, and *cretica albo-lineata*, *Nephrodium molle corymbiferum*, *Adiantum cuneatum*, *scutum*, *trapeziforme*, *formosum*, and *gracillimum*, *Lomaria gibba*, *Phlebodium aureum*, *Blechnum brasiliense* and *corcovadense*, and *Nephrolepis exaltata*. This does not exhaust the list, but it suffices to intimate the leading Ferns in demand. All the foregoing are raised from seed, and in enormous quantities. The seed is sown in September and October, in fine light soil and plenty of heat, and, as might be expected, the pots are well supplied with drainage. The seed is laid on the top of the soil, and bell-glasses are then placed over the pots, as it is found the seed germinates better when covered in this way, and it keeps the soil moist without the necessity of sprinkling the seeds. When there are signs of germination taking place



and the plants become large enough, the tiny plants are pricked out into other pots in little clumps, so as to give them more room to grow, and these again are potted off singly into small pots, and grown on into size. Some of the *Gymnogrammas* are also grown for market, but they do not succeed in winter, and require to be managed with great care in the seedling state. A great many are sent to market in 2½-in. pots about the month of April, when the plants are about 3 in. in height, and the remainder are grown on into size and sent to market now well established in 5-in. pots. That truly regal Maiden-hair Fern, *Adiantum farleyense*, not being a fertile plant, does not produce seeds, and the plants are increased by division, breaking up a large plant into as many pieces likely to make plants as possible. This work of division is done at the end of the winter and in spring, as the pieces grow much better then. This fine Fern is marketed almost all through the year, so long as the stock is available for this purpose, and the plants always have a ready sale.—R. D.

### NOTES AND READINGS.

The editor has almost anticipated my reply to Mr. Thomson in regard to gardening on the Grass. I would just add, among other things, that I had no desire to accuse Mr. Thomson of saying things that were "untrue," and I think he had no occasion to interpret my words in that light. In saying I was not aware that examples of gardening on the Grass "such as have been suggested in *THE GARDEN* from time to time" (a qualification which Mr. Thomson suppresses in quoting me, thus making an answer on his part possible) "abounded in Scotland," I meant what I said and nothing more, and I beg to assure your correspondent of this. What these examples are the editor in his note has pointed out, and the readers of *THE GARDEN* know what they are very well. Of such examples Mr. Thomson records none. His list comprises *Snowdrops*, *Narcissus*, *Crocus*, *Primroses*, *Lily of the Valley*, and *Tulips*, the last in one instance only—not an extensive list surely from all Scotland, and all spring flowers only. Far be it from me to disparage attempts at park or garden decoration, even with these; but, as I said before, something better is contemplated, and such examples as those of which I spoke are exceedingly rare in Scotland or anywhere else in this country. I send you a letter from a correspondent—a well-known man both in Scotland and England—in which he says, "The kind of gardening on the Grass alluded to by Mr. Thomson in *THE GARDEN* is not the kind of thing which the author of the 'Wild Garden' contemplates, I am afraid; I never saw this in Scotland. Sometimes when the hardy borders were thinned out the thinnings were wheeled under the nearest trees, and so grew, but that was all." This testimony, I may say, was unsolicited.

That this particular style of flower gardening has not occupied the attention of gardeners much—hardly ever been thought of, in fact—is patent from the flower-gardening literature of the past thirty years. I cannot remember an instance in which any of our foremost practitioners or writers on the special subject of flower gardening has seen so much as alluded to gardening on the Grass. I have just been scanning the contents of some of the horticultural journals for years back, some of them papers to which Mr. Thomson contributed extensively at one time, but as yet have been unable to find a single allusion to the subject. It would appear, therefore, that the references to the matter in *THE GARDEN* have been timely, and have not

come sooner than needed, for Mr. Thomson's examples read like the records of a past age, most of them dating far back.

Mr. Thomson desires me to name the "important gardens" in Scotland referred to by me where gardening on the Grass was not thought of or attempted. It would be invidious to do that, and I think Mr. Thomson's list renders such a course unnecessary, for most of the noted flower gardens of present and recent years are conspicuous by their absence, and do not need naming. In speaking of flower gardens, I may add that I mean flower gardens of the present day generally.

The *Gardeners' Chronicle*, taking up the subject of a too floriferous habit in some cultivated fruit trees, suggested in these notes about three weeks ago, and re-echoing my words and opinions, thinks the time opportune to press the question a step further, and asks if anything can be done to moderate or check excessive flowering. A few weeks ago, while as yet the possibility of creating a too floriferous disposition had not suggested itself, certain pyramids, furnished with fruiting spurs to their very base, one of them a sheet of bloom and nothing else, were a source of much gratification to your contemporary, and one regrets to hear that the fine show of flower is gone and left but a sorry crop behind it. This excessive and useless flower-bearing, it appears, is due to artificial culture, root pruning, surface planting, the use of dwarfing stocks, double working, and semi-starvation practices generally.

I have not the least doubt that this explanation is the right one. It is rather a sad reflection, however, that the truth should only be dawning upon cultivators now, for there cannot be any doubt that hitherto the most floriferous fruit tree has been always regarded as the best, and the man who could discover a stock or a system of treatment that would produce the best example of this kind, has been regarded in the same light as the man who makes two blades of Grass grow where only one grew before.

The path of horticultural enquiry and practice seems to be beset with greater difficulties and obstructions than almost any other. No sooner are we embarked upon the one and seemingly right course, and fairly under weigh, than some one calls a halt, and brings us all to a dead and sudden standstill, and the next move is a retrogressive one, and much lost ground has to be recovered. It would be easy to recount numbers of mistakes made of this kind, but the less said about them the better, as events march so fast now-a-days that mistakes are discovered before the originators of them have had time to discover their error themselves. The truth of the matter is horticultural investigation is not conducted methodically enough, nor upon sure foundations, and the number of investigators are all too many and too irresponsible; they have no connection with each other, and stand upon no common ground, but every man says and does whatever seemeth right in his own eyes, and in nine cases in ten draws rash and erroneous conclusions from his own practice and that of others.

This is shown in the matter of fruit tree culture more than in anything else almost. All the operations of pruning, root pruning, grafting, &c., have been conducted with the object of securing what the gardener calls a balance between the roots and the branches. This balance, which, under our preconceived notions of culture, is as unattainable as perpetual motion,

is supposed to be a happy mean state of things in which the roots and branches of an Apple tree, for example, will exactly counterpoise each other, resulting in a permanent state of health and fertility. It is to be brought about in the first instance by the application of the spade and the knife, the one applied to the roots and the other to the branches, in conjunction with stocks of a certain description. But hitherto, cultivators, like the ancient philosopher who wanted a fulcrum whereon to rest the lever with which he proposed to move the earth, have been ever seeking the balance without finding it, save by a continual alteration of the weights of the scale.

There is only one way of permanently ensuring a permanent balance between the roots and the tops and the right degree of fertility, and that is by limiting the rooting area of the tree, not by cutting the roots off periodically, but by preventing their unlimited extension. Effect this, and you control your subject at once and entirely. Far too much stress has hitherto been laid upon the repression of the growth of the tree as an aid to fertility. Without root restriction curtailment of the branches is almost *nil* in its effects, although some noted authors and cultivators have carried the idea to such a fine issue as to advise that the leaves of strong shoots of Plums and other subjects should be reduced in dimensions during the season of growth by means of the scissors, just as if tailoring operations of that nature were an every-day part of a gardener's duty. There is still plenty to be said on this subject.

In the interests of gardening it would hardly be right to suffer that reference to heating at Hatfield in *THE GARDEN* of June 25 to pass in silence—the lime-kiln system of heating "was practised on a somewhat extensive scale there, but now it is entirely abandoned, and the only traces of it are the deep excavations which the system necessitated." What a commentary on the "glorious success" of the Hatfield kiln, and on its advocates who guaranteed it, and did so much to persuade the public that it was a system that would certainly supersede any other, leading not a few to expend large sums of money to no good purpose. The history of the Hatfield lime-kiln is the history of not a few others that were erected about the same period.

I have been reading an "Epitome of Gardening" lately, and have been much struck with the marvellous discrimination required in the production of such a work in order that nothing may be omitted and everything receive that degree of attention which its importance demands, and nothing more. That this rule has been observed in the epitome I am speaking of is evident to the most casual reader. Flower-pots, for example, are unfamiliar objects, and it is not everyone who knows that they are made with a hole in the bottom, or that some pots have also holes at the side, near the bottom; but all this is made clear now. For the first time in horticultural literature it is explained what a crock is. It is "a broadish piece of potsherd made from a piece of a broken garden pot," and its use is to cover the aforesaid hole in the bottom of the flower-pot. On the other hand, such subjects as the flower garden and its arrangements are disposed of with courageous brevity, on the presumption, no doubt, that particulars were unnecessary. The pots and crocks occupy nearly a page, and are illustrated by an engraving as well, but the ornamental water of the pleasure garden becomes "a small pool of water for the culture of aquatics." The rock garden should consist of variously



grouped masses of stone. A Rosery is a separate compartment laid out on some regular plan and set apart for Roses. The American spring and winter gardens are all equally succinctly described, occupying together about as little space as the pot and the crock. Equally judicious discrimination has been exercised on the subject of garden appliances. Reckoned by the illustrations and the space devoted, the most important of these are a fork, a hack, a dibble, and a pair of bellows, and those who want to know what a transplanting machine is like are informed that it "will be found figured and described in the various horticultural and arboricultural publications." An epitome, we are told in the preface, is more acceptable than a ponderous and exhaustive volume, but to comprehend this epitome, I find, by its numerous references to ponderous volumes, that I would require a small library. Such books, it appears to me, are sometimes written by people who misunderstand their object, and published for the benefit of those who do not need them.

PEREGRINE.

## THE FLOWER GARDEN.

### WILD GARDENING.

AMONGST the numerous species of strong and hardy herbaceous plants that are suitable for naturalising in woods or other semi-wild places, the following are a few that have been found to thrive well, regardless of rabbits or the encroachment of rank and wild vegetation. The plan adopted in some cases has been (and I think it is the best one) to plant bold colonies of distinct species in separate groups, while in others a mixture of herbaceous and bulbous plants has been tried, whilst a single specimen of such a rampant grower as *Polygonum cuspidatum* is quite effective enough in itself; it succeeds in almost any kind of soil or situation, and after planting out a single plant it will in a few seasons develop into a large spreading bush, and when in full bloom is highly ornamental. Perhaps it is seen to best advantage and is most effective on a Grassy bank or rocky steep; it is infinitely more at home and beautiful in such a site than when crammed into a formal herbaceous border, where this truly wild ornamental plant may too often be seen kept a prisoner and restricted in growth by a constant application of the spade about its roots, instead of allowing its stoloniferous habit of growth unlimited freedom to ramify at its will.

*Bocconia cordata* is a vigorous grower, but does not succeed so well on thin poor ground as the *Polygonum*; it seems to prefer a deep and fairly good soil. It is a plant well worth the trouble of preparing a place for its reception by means of turning and enriching the soil. When seen in vigorous growth its tall stalks of large, uncommon, and curiously cut leaves of a peculiar hue render it an exceedingly attractive and conspicuous plant amongst native vegetation.

The different sorts of Comfrey, although strong growing subjects, are suitable plants for distributing on the sides of wood rides or other rough spots, and a very pretty contrast they give at a little distance when exhibiting their drooping flowers of many colours, obtained by planting groups of different kinds together of half-a-dozen or more plants, composed of the white, blue, and purple varieties with a plant or two of *Anchusa italica* amongst them, this being a near relation of the Comfrey. They are planted in an informal group, some rather close together, others 3 ft. or more apart, thus allowing them ample room to increase in size every time they are cut down after blooming.

When forming these groups I have in some cases filled up the bare spaces between the plants with *Pulmonaria* (common Lungwort), so as to get the ground quickly covered, which I think answers better than waiting until covered by natural herbage, as rabbits are so mischievous wherever soil is exposed on the surface; and, moreover, the *Pulmonaria*'s spotted leaves and pinkish-blue flowers produced in early spring are doubly welcome at that season. If the groups appear to the eye somewhat stiff in outline, which newly formed clumps invariably do, in spite of care, to give a natural appearance at once a few strong roots of Ferns are dropped in here and there, as it were, at various and irregular distances from the Comfrey, a plan I think worth doing, as the Ferns give an easy and more natural finish to a group than any other plants I have tried. Monkshood (*Aconitum tauricum*) has succeeded well in the woodlands; although not so robust as the preceding ones to fight against rough growing neighbours, it will, however, if liberally treated by giving it a good start in rich soil, be easy to establish in colonies where its dark blue flower-spikes pushed up into prominent view at this season of the year cannot escape notice. Of course the rabbits do not deign to taste its poisonous juices; it therefore may be freely planted where rabbits—the worst enemies we have in the case of wild gardening—are plentiful.

*White Foxgloves* and improved varieties of the common wild plant are very desirable additions to the wild garden; a group of the white variety of from a dozen to a score of plants growing near the stem of an Oak tree a little distance from one of the principal rides in the ornamental woods is just now a pretty sight—not a bold, staring, conspicuous-looking colony, but half hid by surrounding subjects. Right in front of the group is a spreading bush, and on either side of the Foxgloves and close to them are some strong vigorous hardy Ferns, their fresh green fronds half hiding the tall stalks of the Foxgloves, and giving a soft and refreshing contrast to the erect group of pure white flower-spikes. The beauty of a group of flowers may, I think, be much enhanced by its surroundings; in this case the grey Lichen-covered stem of the burly Oak and the Ferns, &c., lend a soft and modest look to the smart, showy Foxgloves. A good sight had obliquely in passing either way is, to my thinking, more pleasing to the eye than when fully exposed to the gaze on every side, and in the semi-shade of the Oak tree the pure whiteness of the Foxgloves and the refreshing greenness of the Ferns seem more strikingly intensified.

*Mulgedium Plumieri*, a big hardy plant with huge leaves, doubtless flourishes best in a deep, rich, light soil; single specimens of it having been out in the woods about three or four years, I can vouch that it can be planted in the rougher parts of a wild garden and left to take care of itself, as nothing seems to interfere with its rapid and vigorous growth. As an isolated plant on Grass it presents a bold and uncommon appearance, and when growing among other plants its remarkable leafage forms a strong contrast, and at once arrests observation; its blue and comparatively small flowers are not particularly attractive.

The *Campanula latifolia* is one of the best of the species for the fringes of wood rides and drives. Only given a fair start in well stirred ground with the addition of some light rich soil, and it will soon develop into compact, vigorous, showy clumps, throwing up strong gross stalks laden with flowers. Too well known to need description, suffice it to say that no wild garden should be without this *Campanula*; there are many other varieties varying from 6 in. to 3 ft. high, all desirable flowers for naturalising in woods and pleasure grounds; the dwarfer kinds,

of course, should only be planted on rockeries or other places clear of rough and tall vegetation.

The *Spirea*, or Meadow Sweet, is quite at home in the woods on the sides of lakes and ponds. *S. Aruncus* and *S. Gmelini* are just now in full bloom; their numerous white plumes waving to and fro in an exposed open glade of the woods are conspicuous ornaments at a great distance off, and even when under close inspection they are none the less graceful and beautiful. The rosy broad corymbs of *S. venusta* form a fine contrast to the white varieties. It is, however, hardly so vigorous a grower, and should be planted in strong clumps or roots, and where it is not likely to be overgrown by rougher plants. These *Spireas* are gross feeders, and thrive best in deep rich, moist soils. If the situation is dry and inclined to poverty, a mulching of manure in autumn is of great service until they become thoroughly established in their permanent quarters; indeed, small weakly plants of any kind should not be used for wild garden planting, but should be grown on in a nursery or trial ground for several years preparatory to planting out in rough places.

*Hemerocallis disticha* and *flava* are a success in woods; solitary plants of the former variety underneath old Thorn bushes where herbage is short and bare thrive wonderfully well, and rabbits do not seem to interfere with them. *H. flava* is planted in a colony, with the *Poet's Narcissus* between. Being a very prominent site, it was thought desirable to decorate it with flowers as long as possible. The bloom of the *Hemerocallis* quickly succeeds that of the *Narcissus*, and keeps up a succession of flowers well nigh through the summer. The *Hemerocallis* does well in almost any kind of soil; even in a wet site on a heavy clay a clump of *H. disticha* flourishes and increases in size yearly.

The Broad leaved *Saxifrage*, with pinkish flowers, is an excellent plant for the wild garden. It has been growing in the woods about 4 years underneath an old Thorn tree, and blooms beautifully; nothing appears to molest it or check its development. It is one of the best of the procumbent class of plants for woods or wild gardens. The broad glossy leaves and spikes of pinkish flowers are distinct and pretty, and contrast strongly amongst native plants.

*Iris* (Spanish or narrow-leaved).—A blue variety of this has been tried in the woods here with partial success. Where planted in bare ground rabbits have nibbled and more or less damaged many of them, but where the herbage was moderately strong they have grown on and multiplied. When scattered about indiscriminately in small groups in a green glade, they are both natural looking and effective. The kind to which I allude is a dark blue variety with a white eye in the centre of the falls, a very common sort in cottage gardens about here. It grows freely in almost any kind of soil and increases rapidly when once established. Doubtless the majority or the *Iris* family, both broad and narrow-leaved, are most desirable plants for the wild garden, either for planting on Grass or for decorating the fringe of a lake or pond. Judging from the appearance of a collection of *Irises* in the trial ground in our nursery, each having formed strong roots, one can form some idea of the beautiful effect which they will present when transferred to grassy glades or other wild and suitable spots.

*Omphalodes verna* has been established several years in various sites alongside the wood rides. Although it grows well enough and soon spreads about where the Grass or herbage is not too rank and strong, I have found that it will not flower freely unless it is planted in a warm corner and fully exposed to the sun; indeed, if the position be a shady one no flowers appear. Near one of the wood rides there is a good mass of this prospering, intermixed with *Camassia esculenta*, which is well shown off on a sparkling blue carpet of flowers in spring, and no sooner have the charmingly Forget-me-not-like flowers of the *Omphalodes* passed away than they are succeeded by the none less



beautiful blue star-clad spikes of the *Camassia*. After the latter has done blooming, and its foliage has withered, the *Omphalodes* forms a secure sheltering rug for the bulbs, keeping them secure from all enemies and out of harm's way. The *Omphalodes* should be planted where the natural growth is not too strong, and if the ground be thin and poor, a top dressing of rich light soil spread thinly over all in the autumn will be very beneficial, as the *Omphalodes*, after extracting the goodness out of the soil, is inclined to wander off in search of fresh food, and will attempt to establish a new colony elsewhere; in the woods, however, the rank growth of weeds very often proves too much for it, and eventually it loses itself amongst strong-growing natives.

Longleat

GEORGE BERRY.

### THE CLOUDED IRIS.

THE handsome bulbous Iris, of which, during the last few weeks, mention has been frequently made under the name of Thunderbolt, and of which a most excellent woodcut appears with this note, is a very old inhabitant of our gardens. I first made its acquaintance many years ago when I found it growing in huge clumps in an old-fashioned border. The owner of the garden spoke of it as the Clouded Iris, a name which as an English name still seems to me far better than the irrational one of Thunderbolt. It appears to have also received the title of *I. sordida*, or *Xiphion sordidum*, but there can I think be no doubt that this is a mistake. Salisbury (Trans. Hort. Soc., vol. i., p. 303), as far as I know, first used the name *I. sordida*, but he applied it to a variety of *I. Xiphion* (*Xiphion vulgare*) var. *lusitanica*, figured in *Botanical Magazine*, pl. 679. The typical colour of the Lusitanian variety is a pure yellow, but the particular plant figured in the plate in question is yellow, flecked with purple or violet, and not only does Salisbury, in speaking of his *sordida*, refer to this plate, but Gawler, in the description of the plate, distinctly says, "This is the *sordida* of Salisbury." This being the case, it is very clear that the Clouded Iris, or Thunderbolt, ought not to be called *sordida*, for it does not possess any of the features which Gawler gives as differentiating the variety *lusitanica* from the type. In fact, it differs very little from the typical Spanish Iris (*Iris Xiphion*, *Xiphion vulgare*), except in size and colouring. On the other hand, it answers very largely; in fact, with the exception of what appear to me minor features, almost completely to the description which Spach gives of a variety of *Iris Xiphion*, called by him *I. spectabilis*. Spach gives no figure, nor do I know of any authentic specimens of his *spectabilis*. There is much danger in identifying a plant by a mere description, though Spach's descriptions are admirable; still, I am very much inclined to think that the so-called Thunderbolt is Spach's *spectabilis*, which he says is a garden variety of unknown origin. The one fact which makes one hesitate is that Spach himself suggests that it may be a hybrid between the typical *I. Xiphion* and the variety *lusitanica*. Now, I cannot see any blood other than that of the type in the plant under consideration. It seems to me not a hybrid, but a mere sport; but Spach only suggests its hybrid nature, gives no reasons for doing so; and, moreover, I feel much uncertainty as to the justice of distinguishing a separate variety as *lusitanica*. Hence, till I see reasons to the contrary, I feel decidedly inclined to regard Thunderbolt as Spach's *spectabilis*.

One thing there can be no doubt about; the plant is a handsome, showy thing, of far stronger nature and stouter habit than the type. It will grow apparently anywhere, in the dry as well as in damp, and will thrive luxuriantly where

the type dwindles. It increases by offsets very rapidly, comes, I am told, true from seed, and should be grown by all lovers of Irises. It does not take long to get a clump 3 ft. wide, and such a clump, with an appropriate setting, is worth looking on. I may add that Mr. Baker, who has done so much for the study of Irises, is also of the opinion that Thunderbolt is not *sordida*, but he is not prepared to identify it with Spach's *spectabilis*.

F.

**Senecio absinthifolius.** Can any of your readers tell me whether this plant mentioned as now in flower at Southwood is distinct from

spicuous example of what is technically known as a "centrifugal inflorescence," the terminal flower being the first to open, the lateral ones expanding in succession from the top of the stem downwards. Can you tell me where this species comes from?

R. C., Kensington.

**Iris foetidissima.**—Has any reader of THE GARDEN come across an *Iris foetidissima* with a cream coloured flower? In an old number of the *Phytologist* years ago some one records having found it, I think, somewhere near Swanage. I cannot find it in any collection or catalogue, but am anxious to acquire by purchase or exchange a living root of it. I should similarly like to get hold of a specimen of *I. foetidissima* with double



The Clouded Iris.

*S. artemisifolius*, a plant sold by Mr. Ware, and now very ornamental in my garden and other gardens I have lately visited, not being a very new plant?—C. WOLLEY DOD. [As we can find no authority for the name *S. absinthifolius*, we presume that the plant is the same as *S. artemisifolius* (Pers.), which is synonymous with *S. abrotanifolius* (Gouan).—ED.]

**The Spiked Poppy** (*Papaver spicatum*).—In the notices which have appeared lately in THE GARDEN of the perennial Poppies, I do not observe this species alluded to. It is now in bloom with me, and though not so showy as many of its congeners, it is a distinct and interesting kind. The flowers are of a pale salmon colour with white anthers, and are borne along the stems from the axils of the downy leaves—the latter coarsely toothed, but otherwise entire. It affords a con-

flowers. Such a plant once grew wild near Torquay. M. FOSTER, Shaftford, Cambs.

**Moonwort** (*Botrychium Lunaria*). This has been more than usually abundant this year in Sutherland. It has been plentiful on Golspie Links, and there are at least a dozen other spots in this neighbourhood where it is growing. To-day, within a few hundred yards of the castle, I came upon a bit of it, and on making careful search among the Grass round the place, I counted over 70 plants in a space of 10 yards square. Has this Fern been noted as being beautiful in other localities this season?—D. MELVILLE, Dunrobin Castle.

**Iris and Golden Periwinkle.**—We noticed the other day a pretty combination formed by the common blue Iris growing out of a carpet of the golden variegated Periwinkle. It



was quite a simple and accidental arrangement, yet the effect was singularly good. Such arrangements may be without end, and if carried out around the fringes of our shrubberies and in mixed borders, would tend to make them much more interesting than they are. Only note that when any arrangement is found pretty it should not be repeated everywhere, as that is the true and too common way of neutralising any good it has; our garden pictures should be different in each place, season, or spot.

### ROCKERIES AND ALPINE FLOWERS.

I WOULD recommend every one who is thinking of making an inexpensive rockery for growing alpine flowers to see that of Mr. Ware at Tottenham. It is close to the railway station, and can be seen at any time. The formation is most simple and such as can be made by any ordinary gardener with the assistance of eight or nine cartloads of burrs and stones and twenty loads of good soil. I found it measured 25 yards by 30 yards; a number of winding paths run in miniature gorges between rocky hills, and also here and there over the little hills which are nowhere more than 5 ft. or 6 ft. above the level of the surrounding garden. They, however, appear much higher, as the centre of the rockery and many of the paths and valleys are sunk 3 ft. or more and the earth is thrown up from them to form the hills. Here and there on the tops of the hillocks are planted dwarf Conifers and a few graceful trees and shrubs, while the sides of the hills are clothed with dwarf alpine flowers, which from early spring to late autumn are a perpetual feast to the lover of flowers. On Saturday I spent a most enjoyable afternoon in this small spot in company with a friend, who like myself prefers a good garden to the finest sight in the world, and among the many good things we saw we were particularly struck with the following, both on account of their apparently being quite at home, and also for their distinct character. The white and the blue Tufted Hairbell (*Campanula cæspitosa*), little bright green cushions waving with tiny blue or white bells hung on slender stalks; *Thymus Serpyllum* and *T. micans*, which covered the ground as with snow; also the Downy Thyme (*T. lanuginosus*), *Veronica rupestris*, *Achillea Clavennæ*, *Primula capitata*, a gem, with silver leaves and purple flowers; Maiden Pink (*Dianthus deltoides*), Cheddar Pink (*D. cæsius*), *Gentiana gelida*, *Armeria cephalotes rubra* (a large crimson Thrift), *Cyclamen europæum*; which is rather difficult to grow, but was doing well in a shady spot covered with Moss; *Juniperus sabinioides*, a beautiful silver shrub which covers the ground like a mat. We also noticed the following dwarf Campanulas: *C. pulla*, *C. Barrelieri*, *C. turbinata floribunda*, *C. rupestris*, *C. Raineri*. In different parts of the garden were little nooks where large pots filled with water, and water plants were sunk in peat, which, owing to the constant over-flowing of the pots was a miniature bog, where some lovely hardy Orchises and several varieties of the *Osmunda Fern* were growing to perfection. *Saxifraga longifolia*, was also growing well in the crevices of perpendicular rockwork. By-the-by, I ought to mention that no more rock is used than is sufficient to keep up the sides of the mounds and to prevent the water washing away the soil, except where small pieces were scattered over the surface in a few spots where plants were growing which need a stony bed. I must not forget a very good effect which was produced in one of the paths ascending from the lower ground, where flat pieces of rock had been placed to form steps, and all between was

planted with Mossy Saxifrage, which is so much like Moss itself that only those in the secret know that it is not the accumulation of ages. When I visited the same garden in the spring the best things I saw were alpine Wallflower, white, rose, and purple Phloxes, *Aubrietias*, variegated *Alyssum*, *Arabis* and *Thyme*, perennial Candytuft, London Pride, Golden Stonecrop, *Gentianella*, alpine Auriculas, and *Saponaria ocymoides*, all of which are dazzling when in flower and form neat carpets of verdure the rest of the year; and I shall be much obliged to any of your readers who can add to this list of alpine flowers, which are worth growing for their flowers and remain neat tufts when the flowering season is over, as in my opinion these are the sort of plants which we require for the rock garden.

Glengall, Woodford.

F. C. B.

### HARDY CACTI.

It is to be hoped that some of the hardy species of Cactus mentioned in THE GARDEN (p. 638) will get a trial in English gardens. Our wet winters are against them. Place them on the rock garden, or on raised sunny banks. M. Max Leichtlin once remarked, "It is your moist English winter that kills these hardy Cacti. They pass the winter in colder Germany. They should be placed where they get roasted by the sun and dried by the wind."

My experience of the hardy Cacti has been confined to the *Opuntias*, principally *O. Rafinesquiniana*, but I should imagine that the treatment found best for this species or family of hardy succulents will also suit other hardy members of this curious tribe of plants. Some have told me that *O. Rafinesquiniana* is not hardy in the true sense of the word, and that in exceptionally hard winters it succumbs. Well, all I can say is that in the south of Germany, where the winters are, as a rule, marked by great severity, this Cactus grows like a weed, and retains its vigour unimpaired through many years. I have seen large spreading tufts of it some feet square the appearance of which was at all times interesting, but when these vigorous specimens were studded with large golden-yellow blooms, the effect was really very good. They occupied a sloping bank, which terminated in a terrace wall, and they were exposed to the influence of sun and air in the most direct manner. At the same time moisture could not find a place round the plants in winter, the incline guarding them against this. High and dry on a mound rising quite 3 ft. above the ground level the plants should be set, and the position should be the most sun-scorched and wind-blown in the place. Let the soil be free, and of the two rather be on the side of poverty. Luxuriance may be ensured by means of an annual top-dressing. I had a Cactus which lived ten years. It was planted in a wire basket, and the same was fixed on to a stump, where it resisted some of the hardest frosts.

Byfleet, Surrey.

J. CORNHILL.

### THE SWEET WILLIAM.

THAT most beautiful, and certainly most popular, of all the family of *Dianthus*, the Sweet William, is now in the height of its annual bloom, and where a good and varied strain is possessed, there will be no lack of gaiety. As to its culture, there is literally nothing new to be said, for all that there is to tell has been told scores of times. Moreover, it is a plant that has about it no mysteries. A common labourer has often as good a display of it as is to be found in the best of gardens. I find so much variety in the opening flowers of several hundreds of plants, that until every truss is fully bloomed there is found new excitement almost every day; and then how the beauty of the flowers grows with the development of the truss! A pip or two when expanded pre-

sents, perhaps, no very noticeable features, but when the whole of the pips are open the character of the variety becomes apparent. On some trusses even the individual pips vary so much as to lead to the supposition that they belong to distinct plants, although that is not possible. Markings of the flowers simply defy description. I rather tire of the monotonous ringed flowers. These are most largely found in what is known as Hunt's strain. Some, of course, are very handsome, the pips large, rounded, and strikingly marked; but no one wants a strain that consists of this style of flower alone, let the quality be ever so fine, but any strain would lack merit if it did not possess some of these flowers. Then it is a common fact that fine form and size in the Sweet William is most generally found allied to light flowers, and if these points only are favoured, the strain would soon be wanting one of the greatest charms, viz., rich deep colours. These are more fully found in the so-called Auricula-eyed strain, for the fine Auricula-eyed flowers must have a clear white eye in a setting of red or purple, or some other dark hue. The term Auricula-eyed is not a very appropriate one, as the eye of the Auricula is usually esteemed chiefly for its golden tint. I have been since the earliest blooms expanded going over my flowers every few days, and marking all those from which I purpose saving seed. I have already marked eighty or more trusses, and have selected all that possessed rich colours. Smooth-edged flowers have their admirers, and the peculiar property for which they are noted well deserves perpetuity. Fine, even-rounded trusses are always found in a good strain, but size is generally allied to high culture. Except for show purposes, however, very large trusses are not to be desired, as these usually need some support.

A. D.

### PHYTEUMAS.

A CORRESPONDENT of THE GARDEN in a recent number challenged the correctness of the illustration of *Phyteuma comosum* given at p. 419 of your number for April 23, and asked for further information.

*Phyteuma comosum* is now in flower here, on plants supplied by Messrs. Frœbel, of Zurich, last autumn, and there can be no doubt about the true character, as it exactly agrees with the plant figured in their catalogue of "Plantes Alpines," p. 55. It is a very different plant from that figured by you, which, however, agrees exactly with *Phyteuma Scheuchzeri*, now also in flower here. The name should be altered accordingly.

*P. comosum* is an exceedingly interesting plant of a very dwarf habit, but I disagree entirely with your correspondent "D. T.," p. 419, who says there is not much beauty about it. I call it exceedingly pretty and most interesting. It has very dark green leaves, the outer ones cordate, and those which form the rosette around each flower more acute. The corolla is of a very pale purple, almost white at the base, where it is broadest. It then narrows rapidly, at the same time becoming more deeply tinged with colour exactly like in shape to a Florence flask with a dark neck, so that at the point where the corolla ends the tube is so narrow as only just to afford room for the pistil to come through; it is then dark purple, and the pistil, which continues for nearly  $\frac{1}{2}$  in. further, becomes nearly black. A number of these flowers of from 14 to 20 forms the tuft, and they are arranged symmetrically around a central flower in a most elegant cluster. When masses of these flower tufts are seen in their native habitat, set off by the dark green foliage, and hanging aloft on some rocky precipice, their appearance must be very lovely. I know of no alpine plant which has interested us so much, as it developed these singular flowers. Surely "D. T." could not have seen it when he penned his description.

We have both P. Charmelli and P. Scheuchzeri also in flower, and I can see no difference between them except in size, the latter being the smaller plant both in stalk and flower. In both the outer leaves are cordate, and those on the flower



stalks more lanceolate, as is generally the case with the Campanulaceæ.

**P. orbiculare**, also referred to by "D. T.," is of much larger habit than that described by him. One large clump of it in the open border has 40 to 50 flower-stalks, some fully 2 ft. high, each bearing a single flower of deep indigo blue. It is a very interesting plant, and there is a very strong family likeness throughout the group, the quaint sessile flowers of the *P. comosum* being exactly like those of this tall variety in construction.

BROCKHURST.

Didsbury.

**Trollius europæus**.—Many years ago I found this plant in flower up the edge of a moist wood skirting the tramroad from Trumlin to the Ebbw Vale Ironworks, in Monmouthshire, and in "The Flora for Monmouthshire" it is mentioned as growing in a moist wood near the Vartey Ironworks. Probably it might be found in similar situations throughout that district.—C. B.

**Hardy Pentstemons**.—Among the hardy kinds of these, according to Mr. A. Perry's experience, may be grouped *P. glaber* and *P. heterophyllus*, some forms of the last being of as good a blue as that of *P. Jaffrayanus*, which is tender. Those who have paid any attention to Pentstemons are probably aware of the numbers that are tender. Other exceptions are *P. procerus* and *Scouleri*, but *P. gentianoides*, the parent of our common varieties, will not survive the winter in many districts, though it seems fairly hardy in others. The first two are now in flower.

**Enothera Fraseri**.—Where an attractive mass of yellow is desired through the summer, I can conceive of no plant that is hardy and needing little care in its cultivation, which will give this so effectively as *Fraser's Enothera*. In the case of large rockwork a few plants here and there would furnish colour. The yellow hue is a most pleasing one, and by no means glaring. The plants bloom so profusely and so long, that they will vie with, if not excel, even the *Calceolarias* in the production of a bright mass of colour.—A. D.

**Carnations Drooping**.—I must dissent from Miss Jekyll's idea, as expressed in your last number (p. 7), of allowing Carnations to droop in the way she mentions, and as she saw them in Italy. On the point of beauty she must yield, I fear, to the taste of Milton, who describes Eve (*P. L.*, ix., 430) as tying up the spicy blossom. Milton, be it remembered, had travelled much in Italy. Of course, the more inconspicuous the stake the better; but thus propped the blossom will still droop a little, suggestive of that melancholy which Mendelssohn always ascribed to his favourite flower.—F. R. MORRISON, *Lewisham*.

**Campanula urticæfolia fl. pl.**—"Brockhurst" does not mention this fine border Campanula in the list which he gives in *THE GARDEN* (p. 5). With me, owing to the soil being excessively dry, it does not exceed 2 ft. in height, but I can well imagine that in a cool place and moist soil it will grow much taller and produce finer blooms than I have. The flowers, which are semi-double, consist of two bells, one within the other, pure white, and borne in profusion upon the stems. It is a striking plant, and would be conspicuous in a collection of perennials in pots at this time of the year. It is most useful for furnishing cut flowers for large vases. It is known, as its specific name indicates, as Nettle-leaved Bell-flower.—A. D.

**Campanulas**.—"Brockhurst," in his remarks upon Campanulas (p. 5), refers *C. Raineri* to *C. turbinata*, regarding them as one and the same plant. Certainly *Raineri* resembles some of the varieties of *turbinata*, but the colour is very distinct from that of the typical form. The divisions of the corolla are deeper and more acute, and there is a great difference in the peduncle, which in *Raineri* is short and clothed with leaves up to the base of the calyx, whereas in *turbinata* it is all but naked. The two plants are also distinct as regards foliage. *C. turbinata alba* is

a charming companion to the type of which "Brockhurst" speaks so highly. *C. carpatica pelviformis* is also a handsome variety, with large open flowers of a pale blue colour, and a first-rate border plant, being very floriferous, while *C. lactiflora cœrulea* is equally pleasing; the latter is now in full flower.—A. S.

**Staking Plants**.—Do not allow Larkspurs, Hollyhocks, and other support-needing plants to grow up and topple over before you stake them, else they will not look so handsome as if staked early. If perennial Asters, Larkspurs, herbaceous Clematises, and the like come up in a thick bunch of stems, pluck away all the weakest shoots, and so reduce the clumps that every shoot will have plenty of room for full development. You will have stronger plants and larger flowers for it. In staking, do not huddle the shoots tightly together around the stake; on the contrary, tie them firmly, but loosely, and if there are several of them, tie them in little bunches, rather than all in one. For Dahlias and other heavy plants use one strong stake for each. They may not be easily inserted deep enough in dry weather, but when the ground is wet you can put them in as deeply as you please. Stakes for Gladioli and wand-like flower-spikes like those of Pentstemons, should be slender, but strong, not nearly so long as the spikes, and introduced in almost indiscernible fashion. It is a common thing when stakes are wanted to take some switches from the shrubbery or neighbouring underbush for immediate use. These are not half as serviceable as they would be if they had been cut last year. Green stakes are too yielding, and unless divested of their buds many of them will sprout and grow.—*Country Gentleman*.

**Campanula nobilis**.—You rightly remark (p. 645, Vol. XIX.) that the Noble Hairbell is not a popular flower in gardens, but I think this is not so much owing to want of merit in the flower—for the pure white variety is decidedly a good flower—as to untidiness of habit. It is one of the most inveterate of underground runners. Plants which run visibly on the surface, like Strawberries, are not difficult to manage; when the runners begin to root they may be turned back so as to make one compact clump with the parent plant, and a good mass of flower may in this way be secured. But plants which are underground, like some of the Campanulas, especially *C. nobilis*, and some of the *Lysimachias*, especially *L. clethroides*, and many other genera, are most insidious and difficult to manage. All who grow *Helianthus rigidus* know its habit of coming up in the middle of its neighbour more than 3 ft. distant, but this plant may be cut round from time to time with a spade, and the suckers cut off without injury to their parent; but *Campanula nobilis* is so erratic in its habit that if continually cut round it soon disappears. The best way to deal with such plants is to plant them inside a hoop of wood, or zinc, or earthenware, of about 1 ft. in diameter and 4 in. deep, sunk to the rim in the ground, I am not sure what is the best material, and suggestions on this point from those who have tried the plant would be interesting.—C. WOLLEY DOD, *Elgar Hall, Malpas*.

**Bedding Plants at Rathronan**.—In reference to herbaceous bedding, to which I drew attention (p. 570, Vol. XIX.), I said I considered those who would commend greater variety in our flower gardens would do well to occasionally state what they have observed or found so effective as to deserve to take the place of the ordinary endless Geraniums, Lobelias, *Calceolarias*, *Iresines*, *Alternantheras*, and the various other half-hardy combinations, of which so many are growing tired. If the question arises with either gardeners or their employers in this transition state of mind, you are usually asked, "But what are we to have instead of the former bedding plants?" From this forward as those so interested will be observing, the effect of their own arrangements as well as others, and coming to a conclusion as to their garden occupants for next year, I submit *THE GARDEN* would do good service by encouraging observations on the subject, though all admit it has done yeoman service in this direction for a

considerable time past, and no doubt to it is due in a great measure the revival of that great variety and that demand for good old hardy things which many nurserymen were unprepared to meet. There were some things deserving notice from this point of view, as there always are in the beds in the flower and Rose ground, attached to this finely situated old country mansion. Among the rest conspicuous lately were two large beds of *Campanula pyramidalis* of several varieties and colours. Much depends on the method of growing perennials or biennials towards ensuring success. These had their sides—rectangular beds—supported by firm stakes and strong twine, not readily noticeable, and were as straight as a line. Had this not been done, as I have seen elsewhere, the last storms would have sent them flying in all directions, as all the tall growing Campanulas are very brittle. This staking and tying is the great item of effectiveness in dealing with many tall herbaceous plants. Here, too, were eight large beds of tuberous Begonias in variety already finely in bloom when some parties are only thinking of putting theirs out, or perhaps nursing them under glass. The late storms and rain have left them perfectly unscathed. Other noticeable new and showy bedding features were beds of all the newer varieties of Columbines, including *A. cœrulea*, *A. chrysanthia*, *A. Skinneri*, &c. A very showy bed shortly, too, will be one of single Dahlias (varieties lately figured in *THE GARDEN*); and there too will be a prominent feature—Cannell's new *Pyrethrums* bedded out. With such materials one may look forward to something new and something good—there are fifty others such here—while they may remember that the catalogue to select from is almost endless.—W. J. M., *Clonmel*.

#### SEASONABLE WORK.

ALL planting having been brought to a close, the great points to be observed are neatness, order, and attention to pegging, training, and staking, and last, but not least, frequent stirring of the surface of the ground. The fine rain we had in June started the plants into a free growth, and already beds are well furnished, but in order to keep them trim and true to the pattern, the subjects used for carpet beds must have timely attention to the everlasting process of pegging and pinching, and then even some over vigorous leaf or growth will elbow its way into the space allotted to its neighbour. Fortunately, where carpet bedding is insisted upon or persisted in, a great stride has been made by the introduction of the hardy succulents and dwarf growing plants, which do not soon get out of order, and further they look well until the frost breaks up the order of the garden. In the hardy herbaceous or what may be termed the cutting garden, the most important work is staking and tying to prevent injury by wind and rain. At the present time we have *Delphiniums* 8 ft. high, and *Ponies* that we can cut with 4-ft. stems, a class of flowers which now go largely into the dress and decoration of all the best houses in London. It must, however, be borne in mind that it is not always convenient or agreeable to go into the "dress" garden to fill a 6-ft. hamper at least once a week. Every London mansion should, therefore, have a good cutting garden in the country, sheltered, but open to sun and light, well drained and deeply trenched, and if possible no great distance from the packing room.

*Eastnor Castle.*

W. COLEMAN.

#### Deep Cultivation and the Drought.

At no time are the beneficial effects of deep cultivation and ample manuring so visible as during a drought such as we have had this season. In spring the weather was extremely dry and the winds cold and parching, and now we have a trying drought, accompanied by tropical heat. Crops flag and come to maturity more or less prematurely, according as they find depth of friable soil and soluble food within reach of their roots. Those, therefore, in charge of old kitchen gardens, the soil of which is permeated and impoverished by the roots of fruit trees whereby it is impossible to carry out deep cultivation, are bewailing the loss of crops from the effects of drought, while those with open quarters devoted solely to vegetable culture are able to defy any ordinary drought, for although much may be done by watering or irrigating, there is a vast difference between watering crops on poor shallow soil that is full of roots below the first spit and the same means applied to deeply, well-enriched soil in open situations. I have for several years



noticed that our Onion crop that generally follows Celery will keep tolerably level all over the piece in moist showery seasons, but during a drought the rows exactly over where the Celery stood the preceding year, and where the soil was more enriched and deeply stirred than elsewhere, will grow right away from those intervening, and many other instances might be cited, but any one can easily put this question to the test themselves by noticing how crops compare should the drought continue on lands that are merely dug over and such as were trenched in winter and had the manure buried deeply as a reserve of food for drought and for succeeding crops.—J. G. L.

## SOCIETIES.

### NATIONAL ROSE SOCIETY. JULY 2.

THIS society held its annual London exhibition in the Crystal Palace on Saturday last. It was quite as successful as any show that has preceded it as regards the numbers of exhibits, though there seemed to be a falling off of exhibitors in the principal classes, whilst the smaller classes, particularly those for amateurs, were considerably augmented. Except in a few instances, the quality of the blooms was not remarkably high, a circumstance doubtless attributable to the fact that the date was somewhat early for most of the exhibitors, as the blooms from their maiden plants were not in their best condition, and those who were fortunate in having their standards uninjured by the late winter reaped the benefit on this occasion. There were nearly 4000 blooms exhibited exclusive of those shown in the non-competitive classes.

**Nurserymen's Classes.**—It is a singular fact, and one that strikingly shows the peculiarities of the Rose with regard to local circumstances, that those exhibitors who last year were so successful as to head the prize list in almost every class they competed were scarcely represented in the prize list on the present occasion. The most prominent exhibitor among nurserymen this year was Mr. B. R. Cant, of Colchester, whose Roses seemed to be at their best—at least, those from standards. He headed the list in the classes for seventy-two single, 48 and 24 treble trusses; and, singularly enough, Mr. C. Turner, who won all the first prizes at the Royal Horticultural Society's Rose show last week in the principal nurserymen's classes, was second on this occasion in the first three classes. Mr. Cant's collection of seventy-two for the Challenge Cup and £6 was wonderfully fine and attractive withal, as the stands were varied in colour by the copious introduction of Teas and Noisettes, which obviated the monotony of the majority of the collections. The most conspicuous sorts and those shown the finest were A. K. Williams, General Jacqueminot, Edouard Morren, Reynolds Hole, Maréchal Niel, Abel Carrière, Abel Grand, Marie Van Houtte, Constantine Fretiakoff, Mad. Caroline Kuster, La France, Sénateur Vaisse, Charles Darwin, Horace Vernet, Rubens, Devoniensis, Mad. Gabriel Luizet, Hippolyte Jamain, Dupuy Jamain, Duke of Edinburgh, Mad. Bravy, Comtesse d'Oxford, Emily Laxton, Comtesse de Serenye, Camille Bernardin, Mlle. Prosper Laugier, Mons. E. Y. Teas, Niphotos, Ferdinand de Lesseps, Mrs. Baker, Marquise de Castellane, and Marie Rady. These were all in a beautiful stage of expansion, and the majority showed well the characteristics of the various sorts. Mr. Turner's collection was also fine, but the blooms were more expanded and the colours were not so much varied. Messrs. Curtis had a good collection from their Torquay Nurseries for the third place, and the Piltown Nurseries secured the other. There was one other collection shown.

The next class for forty-eight treble trusses was also a fine one, and Mr. Cant again showed remarkably well for the premier prize. Etienne Levet, Mad. C. Wood, Alfred Colomb, Marie Baumann, Eugène Verdier, Marquise de Cas-

tellane, Annie Laxton, Horace Vernet, Le Havre, Devoniensis, all among the cream of exhibition Roses, were shown superbly in these boxes. The other prizes were taken by the same exhibitors as the foregoing, except the fourth, which went to Cheshunt. Five collections of twenty-four treble trusses.—Besides other sorts mentioned the Colchester collection contained splendid blooms of Duke of Wellington, Elie Morel, Fisher Holmes, Captain Christy, Magna Charta, and Duchesse de Vallombrosa. The other prize-takers were the same as in the last class, and were similarly placed.

The next class was for twenty-four single trusses of Tea or Noisette varieties, of which there were four collections shown. The best came from Mr. Prince, of Oxford, who grows the Rose on the Seeding Brier better than most cultivators. His Roses on this occasion certainly confirms the high opinion he entertains of this particular stock, for they were by far the finest Teas in the show. Among the sorts shown were Homer, Innocenti Pirola, Perle des Jardins, Catherine Mermet, Mad. Willermoz, Alba Rosea, Souvenir d'un Ami, Belle Lyonnaise, Maréchal Niel, Comtesse Riza du Parc, Comtesse de Nadaillac, Bouquet d'Or, Souvenir de Paul Néron, Jean Ducher, Marie Sisley, and Jean Pernet. Three other collections were shown.

The second division in the schedule was for exhibitors not competing in the above classes. There were six collections shown in the class for forty-eight single trusses, and the best of these—from Messrs. Cranston & Co., Hereford—were very fine, containing, besides sorts previously mentioned, superb examples of Auguste Rigotard, Exposition de Brie, Thomas Mills, Mons. Fillion, Mad. Gabriel Tournier, and Mons. Boncenne. Four exhibitors shown in the class for eighteen treble trusses, three in twenty-four single trusses, most of which contained some fine blooms. Twelve Tea or Noisette varieties were shown best by Messrs. Cranston, who had, among other fine blooms Niphotos, Gloire de Dijon, Perle des Jardins, Souvenir d'Elise Vardon, Jean Pernet, Mad. Bravy, Mad. Willermoz, Mad. Caroline Kuster, Souvenir de Paul Néron, and Catherine Mermet.

**Amateurs.**—The Roses from amateurs were not so good as usual, though more numerous in the less important classes. There was a poor competition for the silver challenge cup and £6 presented by nurserymen as first prize for forty-eight single trusses, as there were but three collections. One of these collections came from Mr. R. N. G. Baker, Heavitree, Devon, and, it is needless to add, were a long way ahead of the others in point of quality; in fact, every bloom in the stand was superb, notwithstanding their long journey and the hot dry weather. The most conspicuous sorts in this grand collection were Marie Baumann, Dr. Andry, Marquise de Castellane, Mons. E. Y. Teas, Victor Verdier, Mad. Gabriel Luizet, Mad. A. Lavallée, Duke of Edinburgh (very fine), La France, Mrs. Laxton, Penelope Mayo (a fine new Hybrid Perpetual), Le Havre, Thomas Mills, Pauline Talabot, Marie Cointet, Sir Garnet Wolsley, Alfred Colomb (very fine), Charles Darwin, Ferdinand de Lesseps, Etienne Levet, A. K. Williams, Dupuy Jamain, John Bright, Camille Bernardin, Louis Van Houtte, François Michelin, Sénateur Vaisse, Mad. V. Verdier, Duchesse de Caylus, Marguerite Brassac, Beauty of Waltham, Mons. Fournier, Mrs. Baker, and Duke of Connaught. The second collection contained some fair blooms, but the third was below the average.

In the next class for twenty-four single trusses there were only four exhibitors. Mr. Baker and Mr. C. Davies, Banbury, showed well for the first and second prizes, but the Devon collection was superior in every respect. It contained, besides those already examined, fine blooms of Marie Rady, Charles Lefebvre, J. S. Mill. In Mr. Davies' boxes were splendid blooms of Catherine Mermet, Jean Liabaud, J. S. Mill, Marguerite de St. Amand, Xavier Olibo, Le Havre, Maréchal Niel, and some other Teas and Noisettes that

apparently thrive uncommonly well with the exhibitor. In the next class for twelve single trusses Mr. Baker was again first, and all the trusses, which consisted of sorts mentioned, were superb examples of skilful culture, and contrasted strongly with the only other collection in the class, which was poor.

The class for twelve Tea or Noisette varieties was well represented, and the first collection, from Mr. Davies, contained some remarkable examples, particularly one of Catherine Mermet, which was singled out as being the finest Tea Rose in the whole exhibition; it was perfect in form, of large size, and high colour for the sort, the crimson-purple tinge of the outer overlapping petals being a beautiful contrast to the soft creamy yellow of the interior. The other kinds in the collection were Mons. Furtado, Belle Lyonnaise, Maréchal Niel, Marie Van Houtte, Mad. Caroline Kuster, Jean Ducher, Bouquet d'Or, Souvenir d'un Ami, Souvenir de Paul Néron, Niphotos, and Comtesse de Nadaillac.

The fourth division of the schedule was for exhibitors not competing in the foregoing classes. The first class in it was for thirty-six single trusses. Six exhibitors competed; the best collection came from Mr. Jowitt, Hereford, who generally shows finely. He had an excellent collection, La France being particularly fine. Of eighteen blooms there were a dozen exhibitors, and a score of collections were shown in the class for twelve single trusses, the majority of which were good, particularly that from Mr. Ridout, of Reigate, who grows the Rose remarkably well. Ten exhibitors showed collections of six treble trusses, none of which were below the average quality, and the three first were particularly fine. Of nine Tea or Noisettes, seven collections were shown, and the first, from Mr. Pemberton, contained several fine blooms. The sixth division consisted of four classes for exhibitors not competing in previous classes. The numbers were twelve, nine, and six blooms, and being such a small number all the boxes contained fair blooms of fair quality. Suburban-grown Roses were more numerous shown this year than last, there being no fewer than twenty-eight exhibitors in the two classes for six single trusses. The best came from the neighbourhood of Wimbledon and Streatham, some eight miles south-west of London. There was only one collection of six Tea or Noisette kinds.

**Open Classes.**—The best twelve blooms of any yellow Rose were shown by Mr. Prince, Oxford, who had some splendid examples of Maréchal Niel, one of which was awarded the silver medal, as being the best Noisette variety in the whole exhibition. For the second place, Mr. Davies showed some fine Marie Van Houtte; and Maréchal Niel took the third. The best dozen pink or rose-coloured Roses were some splendid blooms of François Michelin from Messrs. Curtis. The same variety from Mr. Cant took the third, and Mr. Baker the second with superb Etienne Levet blooms. Baroness Rothschild, Madame Gabriel Luizet, Marie Verdier, and Marquise de Castellane were also shown in this class. The best dozen of a crimson variety were from Mr. Cant, who showed A. K. Williams in fine condition. Some very fine Duke of Edinburghs from Mr. Baker took the second, and General Jacqueminot the third. The class for six blooms of any variety was represented by numerous exhibitors. Belle Lyonnaise took the first, Captain Christy the second, and Marquise de Castellane the third prize. Dr. Andry, Maréchal Niel, Mons. E. Y. Teas, Alfred Colomb, Marie Baumann were also shown in this class.

**New Roses.**—These were not very numerous shown. The amateurs' class for six new Roses put in commerce since 1878 was represented by some three or four collections, none of which were very remarkable for high quality. In the first, from Mr. Pemberton, were Harrison Weir, Charles Darwin, Duchess of Bedford, Barthelemy Joubert, A. K. Williams, and Countess of Rosebery. The second, from Mr. Jowitt, comprised Mabel Morrison, Mrs. Jowitt, Mad. Gabriel Luizet,



Mad. Alfred Dumesnil, Mad. Julia Dymonier, and a fine seedling in the way of Alfred Colomb. Other kinds shown in this class were Mrs. H. Turner, Richard Laxton, Beauty of Stapleford, Mad. Lambert, Jules Finger, and George Bennett. The open class for twelve new Roses sent out since 1878 was represented exclusively by nurserymen. Equal first prizes were awarded to Mr. Turner and Messrs. Paul, Cheshunt. The former had Harrison Weir, Duchess of Bedford, Egeria, Mad. Marane, Barthelemy Levett, Mrs. H. Turner, Dr. Sewell, Jules Finger, Charles Darwin, Countess of Rosebery, Mad. E. Verdier, and Charles Darwin.

Messrs. Paul's collection comprised Paul Jamain, Mad. Julia Dymonier, Mad. Ducher, Charles Darwin, Comtesse de Choiseul, Dr. Hogg, Egeria, Mabel Morrison, Catherine Souper, Harrison Weir, Wilhelm Kœlle, and Countess of Rosebery. Messrs. Curtis was third with Leon Renault, Mad. Eugène Verdier, Jean Ducher, Duke of Teck, Jules Finger, Duchess of Bedford, Mad. Marane, Countess of Rosebery, Ferdinand Chaffolte, Souvenir de Mad. Robe, Mad. Etienne Levett, and Comtesse de Choiseul. Messrs. Cranston showed the other collection, which consisted of Mad. Marguerite Manoin, Mons. A. Dumesnil, A. K. Williams, Mad. Gabriel Luizet, Comtesse de Camonda, Boildieu, Eliza Taissou, Mad. Julia Dymonier, Mad. Ducher, Mad. Marie Verdier, Mrs. Jowitt, and Edouard Pynaert.

Mr. Turner was the only exhibitor of three trusses of a very new seedling Rose not yet in commerce or announced. The kind shown was named General Roberts. It is a large full flower of fine form, particularly in the half-open state, with good substance of petal. The colour is a deep rich velvety crimson, shaded with a brighter hue, embodying all the characteristics of a fine exhibition variety, and, judging by the ground plant shown with the flowers, it is a robust grower and promises to be a fine garden Rose as well.

The society's silver medal for the best Hybrid Perpetual was awarded to a wonderfully fine Marie Rady of exquisite form and colour. It was shown by Mr. Brown, Reigate. The best Tea was Catherine Souper, shown by Mr. Davies, and the best Noisette, Maréchal Niel, from Mr. Prince, as we before mentioned.

A list of awards will be found in our advertising columns.

#### ROYAL BOTANIC SOCIETY, REGENT'S PARK. JULY 2.

THIS, the second summer exhibition held by this Society, was of the usual extensive character. The exhibits were more numerous than at the May show, and, being supplemented by an exhibition of fruit and cut flowers, the display, on the whole, was most satisfactory.

**New Plants** were, as usual at these exhibitions, shown in large numbers. From Messrs. Veitch & Son came Philodendron radula, Cattleya Macmorlandi, C. dolosa, Lælia Dominiana rosea, Anthurium Kalbreyeri, a new species of Astilbe, Utricularia Endressi, Adiantum fissum, Dendrobium Guiberti, Sarracenia melanorhoda, Aletris fragrans aureo variegatus, Saccolabium Hendersoni, Phalenopsis sumatrana, P. violacea, Caladium Princess Beatrice, Impatiens Mariana, Spargelia pilifera aurea, Davallia Mariesi cristata, Begonia alba fl.-pl., Ixora Burbidgei, Sarracenia formosa, Asparagus plumosus nanus, Globba coccinea, Croton aureo marmoratus, C. Sinitzianus, C. recurvifolius, C. chrysophyllus, C. Cronstadii, C. Fordi, C. rutro lineatus, Lilium medeoloides, Begonia Miss Constance Veitch.

Mr. B. S. Williams showed Ixora Pilgrimi, Cycas undulata, Gymnogramma Alstoni, Asplenium Veillardii fidele, Dieffenbachia Imperator, Imantophyllum concinnum, Aralia spinulosa, Trichopilia hymenantha, Aralia monstrosa.

From the General Horticultural Company came Croton President Chereau, C. Baron Frank Selliere, C. superbiens, C. Massangeanus, C. Bergmani, C. Macfarlanei, and Gloxinia Countess Renard.

Mr. Bull exhibited Crossandra infundibuliformis, Aphelandra punctata, Schismatoglottis longispatha,

Davallia Lorrainei, Illicium religiosum variegatum, Odontoglossum vexillarium rubrum, Sarracenia flava erythropus, S. flava limbata, Lilium Martagon dalmaticum, L. Parryi, Masdevallia Harryana atrosanguinea, M. Shuttleworthi, Antigramma brasiliensis, Selaginella granatensis, Kämpferia Gilberti.

Mr. Wiggins, gardener to Mr. Little, Uxbridge, exhibited Pelargoniums Lucie Lemoine, Beat Upon, Triomphe de St. Mandé, Olivette, Annie Hemsley, Mad. Thibaut, Formosa, Magnet, Christobel, Britomart, Aurora, Hermit, La Grande.

Messrs. Hugh Low, Clapton, showed Dendrobium heterocarpum philippinense and D. Treacheri. Mr. James, Norwood Nursery, sent Odontoglossum cordatum sulphureum. Mr. Croucher, Sudbury House, Hammersmith, contributed Odontoglossum vexillarium atroseum. From Mr. Butler came Amaryllis Miss Edith. Mr. Rundell, Kentish Town, seedling Fuchsia Louise Rundell. Mr. Rutter, Richmond, exhibited Gloxinias Mrs. Morrel, G. Mrs. Cotton, G. Ben's Beauty, and G. Miss Rutter.

Of these the following were awarded botanical certificates of merit:

To Messrs. J. Veitch and Sons, Chelsea, for—

**Globba coccinea.**—A highly attractive and elegant plant of the Gingerwort family, having slender stems, rising about 1½ ft. high, furnished with deep green shining leaves, and terminated by a cluster of deep red flowers of singular shape.

**Anthurium Kalbreyeri.**—A noble Aroid remarkable for its bold ample roundish leaves, which measure upwards of 1 ft. across, of leathery texture, and divided into from four to nine segments.

**Lælia Dominiana rosea.**—A hybrid variety of surpassing beauty, obtained by crossing C. Dowiana and C. exoniensis. The parentage is very marked, as the flowers have a large shallow lip like Dowiana, but of a rich purple-crimson hue, beautifully crisped at the margins. The sepals are a pale lilac hue, lighter than in the original L. Dominiana, hence the varietal name.

**Cattleya MacMorlandi.**—A lovely species having flowers of the size and shape of C. labiata. The sepals are a delicate pale rose, while the lip is a pale sulphur yellow hue.

**Saccolabium Hendersoni.**—A pretty little species having short erect spikes of flowers of a colour similar to that of Mesospidium vulcanicum.

**Utricularia Endressi.**—A Bladderwort similar to U. montana, but with smaller flowers of a pleasing deep mauve tint. It is very floriferous, and well adapted for growing in baskets.

**Phalenopsis violacea.**—A pretty species with a habit of growth similar to P. Luddemania; the flowers are about 1 in. across, of a bright violet-purple hue, broadly edged with pale green, a striking contrast in colour.

**Cattleya dolosa.**—A beautiful species of dwarf growth, having large flowers of a deep rosy pink hue, rendering it highly attractive.

**Davallia Mariesi cristata.**—A tasselfroned variety of an elegant Hare's-foot Fern described in our columns a short time ago.

**Croton rubro-lineatus.**—A noble variety having long and broad leaves beautifully marbled and streaked in yellow on a green ground, and with crimson veins and markings over the whole surface of the leaves.

Mr. Bull, Chelsea, for—

**Lilium Parryi.**—A new Californian Lily with bright yellow flowers of medium size, spotted copiously with chocolate. It was figured in THE GARDEN, Vol. XVIII, p. 652.

**Masdevallia Harryana atrosanguinea.**—A variety remarkable for the exceptionally deep rich colour of the blossoms, as well as their large size.

**Sarracenia limbata.**—A variety of S. flava, having the lid of the pitchers margined with a broad ring of a deep reddish tint on a green

ground. S. erythropus, another variety having the neck of the lid of a deep red hue.

**Aphelandra punctata.**—A species with the medium-sized leaves prettily variegated with silvery markings on a deep green ground.

**Odontoglossum vexillarium rubrum.**—One of the deepest tinted varieties ever exhibited, the colour being a dark rose hue.

**Davallia Lorrainei.**—An elegant Malayan Hare's Foot Fern, with finely cut frond; about 1 ft. in length.

**Kämpferia Gilberti.**—An attractive plant, having large, broad leaves of a deep green, with a broad margin of white.

**Antigramma brasiliensis.**—A plant of dwarf growth, with narrow leaves having a band of white running through the centre of each.

The General Horticultural Company for—

**Croton Bergmani.**—A handsome variety of robust, yet compact growth, having broad leaves elegantly marbled with green and golden-yellow. C. Baron Frank Selliere, also a highly attractive plant, with broader leaves than the last, but variegated in a similar manner.

Messrs. J. Laing & Co., Forest Hill, for—

**Croton Laingi.**—A long narrow-leaved variety, with the leaves of a bright golden-yellow, in their lower halves suffused with crimson, while the upper parts are a deep bronzy-green.

**Caladium Mithridate.** J. R. Box, Candidum, and Comtesse de Condeixa, all superb varieties, described in our columns a short time ago. They are all decided improvements upon older kinds, and, without exception, are extremely handsome.

Mr. Croucher, gardener to Mr. Peacock, Sudbury House, Hammersmith, for

**Odontoglossum vexillarium atroseum.**—A splendid variety, remarkable for the exceptionally fine blooms, which are of a deep rose-pink colour; one of the finest yet exhibited.

**Floral Certificates** were awarded to—

Mr. Turner, Slough, for—

**Pelargonium Sunbeam** (Foster).—One of the large-flowered type, with intensely brilliant crimson flowers of fine form.

Messrs. H. Cannell & Sons, Swanley, for—

**Heliotrope White Lady.**—A very fine variety with fine clusters of flowers of a pure white. The habit of growth appears to be vigorous, and the plant a free flowerer.

Mr. Wiggins, gardener to Mr. Little, Hillingdon Place, Uxbridge, for—

**Pelargoniums Britomart, Formosa, Christobel,** large or show-flowered varieties; **Lucie Lemoine, Annie Hemsley, Mad. Thibaut,** decorative varieties; and an unnamed Ivy-leaved, with double flowers, raised by M. Lemoine. As we have so recently alluded to these kinds, further comment is unnecessary, save that they are all very beautiful, and well deserve the distinction accorded them.

Messrs. Veitch, for—

**Carnation Gloire de Nancy.**—A variety of the Glove having large pure white flowers finely doubled and deliciously scented.

**Orchids.**—Though not so fine as at the May show, these made a highly attractive group. There were only two collections of twelve plants from amateurs, that from Sir Trevor Lawrence's garden, Burford Lodge, Dorking, being the finest. It comprised fine examples of Epidendrum nemorale, a magnificent plant, 4 ft. through, with two or three dozen spikes; Masdevallia Harryana violacea, very fine plant; Cypripedium Parishii, with four spikes; Renanthera Lowi, with a spike 5 ft. long, bearing 30 flowers; Dendrobium McCarthiae, a fine plant; Acides affine, Lælia purpurata, Cypripedium Veitchi, C. niveum, Oncidium unifolium, Vanda suavis, Dendrobium filiforme; the other collection, from Mr. Dorman, Sydenham, containing fine plants of Cypripedium Stonei, Odontoglossum vexillarium, O. Roezli, and Dendrobium suavissimum. In the nurserymen's class Mr. B. S. Williams took the first prize in both the classes for twelve and six plants. In the for-



merwere grand plants of *Brassia verrucosa*, *Aerides odoratum majus*, *Cattleya Mossie* and *Mendelli*, *Cypripedium barbatum superbum*, *C. superbienis*, *Vanda tricolor*, and *Odontoglossum vexillarium*. Among the six were *Lælia purpurata*, *Epidendrum vitellinum majus*, *Cypripedium superbienis*, *Saccolabium Holfordi*, *Cattleya Mossie superba*, and *Anguloa Clowesi*, all in fine condition. The other collection, of twelve plants were from Mr. James and Messrs. Jackson, who took the second and third prizes. Among the former were fine plants of *Epidendrum vitellinum majus*, *Oncidium crispum grandiflorum*, and *Cypripedium barbatum*, while a fine plant of *Calanthe veratrifolia* was conspicuous in the Kingston collection.

There were two collections of six plants in the amateurs' class; the finest came from Mr. Coningsby, Mr. Dorman's gardener, who had splendid plants of *Odontoglossum vexillarium*, *O. cordatum*, *Oncidium curtum*, *Dendrochilum filiforme*, *Cattleya Mendelli*, and *Odontoglossum citrosum*. A fine plant of *Aerides odoratum majus* was shown in the other collection.

**Stove and Greenhouse Plants** were not nearly so fine as usual, neither were they so numerous, as only six collections were shown. In the open class for twelve, Messrs. Jackson showed for the finest collection; the best plants were *Kalosanthes coccinea*, M. Duphemis, a very bright coloured variety, *Hedera fuchsoides*, *Pimelea mirabilis*, and *Dracophyllum gracile*. In the other two collections shown were *Rondeletia speciosa*, *Medinilla magnifica* in fair condition, but the other plants were below the average quality. The best six plants from nurserymen came also from the Kingston Nursery. It comprised fine plants of *Kalosanthes coccinea* Dr. E. Regel, *Erica ventricosa Bothwelliana*, and *Statice Butcheri*. In the other collection were fair plants of *Erica affinis*, *Rondeletia speciosa*, and *Ixora Prince of Orange*. The amateurs' class for six plants was only represented by two collections; the best of these, from Mr. Donald, comprised fine examples of *Statice profusa*, *Bougainvillea glabra*, *Ixora Fraseri*, and *Dracophyllum gracile*; also *Hedera fuchsoides* and *Dipladenia amabilis*. In the other collection was a well flowered plant of *Erica depressa*.

**Fine-foliage Plants.**—The classes for these were not so well represented as usual, but some of the collections were very fine, particularly that from Mr. Rann, Handcross Park, Crawley, who was first in the amateurs' class for six plants. They comprised *Cycas revoluta*, *Areca sapida*, *Latania borbonica*, *Croton variegatum*, *C. angustifolium*, and *Gleichenia rupestris glaucescens*, all of which were remarkably fine specimens. In the second collection were *Dicksonia antarctica*, *Seaforthia elegans*, *Chamærops humilis*, in fair examples. One other group was shown among nurserymen; Mr. B. S. Williams was first with a fine group of six plants, consisting of *Croton angustifolium*, *C. majesticum*, *Geonoma Seemannii*, *Kentia australis*, *Eucephalartos Caffra*, and *Dasylirocn acrotrichum*. Messrs. Hooper were next in the class; their best plants being *Thrinax argentea*, *Anthurium crystallinum*, *Pritchardia macrocarpa*, and *Phyllotanium Lindenii*. In the other group were fair examples of *Croton interruptum*, *Theophrasta imperialis*, *Cocos Weddelliana*, and *Dracæna Mooreana*.

**Ferns.**—These were numerous and finely shown. The best six from amateurs came from Mr. Brown, Streatham, who had grand plants of *Davallia Tyermanii* 4 ft. across; *Gleichenia microphylla* 6 ft. or 7 ft. through; *Davallia Mooreana* nearly as large; *Adiantum farleyense*, *Microlepia hirta cristata*, and a fine specimen of *Adiantum Williamsii*. The second collection was also good, consisting of grand specimens of *Gleichenia glaucophylla*, G. Mendelli, G. rupestris glaucescens, *Dicksonia squarrosa* and *antarctica*, and *Cyathea dealbata*. These were shown by Mr. Rann. In the third collection were fine plants of *Davallia Mooreana*, *Phlebodium aureum*, *Gleichenia Mendelli*, *Microlepia hirta cristata*, *Adiantum farleyense*. In the other group, awarded

an extra prize, were some fine tree Ferns. The nurserymen were poorly represented as regards numbers, there being but two collections of six. Mr. Williams was first with *Cibotium regale* and *prumatum*, *C. dealbata*, *Asplenium Nidus*, *Gleichenia circinata*, and *G. flabellata*. The second prize was withheld, and the third awarded to a poor collection.

**Pelargoniums.**—Nine plants of the zonal type were shown by three exhibitors. The finest, from Mr. Catlin, comprised grand plants of *Fanny Catlin*, M. Thibaut, Devotion, Lively, Gorgeous, F. V. Raspail, Fanny Thorpe. The other two collections were inferior. The large-flowered or show type was not nearly so large or fine as usual. The best six and only one in the nurserymen's class, from Mr. Turner, comprised the sorts *Modesty*, *Claribel*, *Victory*, *Cicely*, *Illuminator*, *Quadroon*, and *Digby Grand*. The only collection in the amateurs' class was from Mr. Wiggins, who had moderate-sized plants of *Setting Sun*, *Magnificent*, *Madame Favart*, *Illuminator*, *Morning Star*, and *Decorator*. The fancy or small-flowered class likewise was represented only by two collections. In Mr. Turner's six were *Duchess of Edinburgh*, *Sarah Bernhardt*, *Fanny Gair*, *Jewess*, *Mrs. Pope*, *Mr. Hart*; and the other group, from Mr. Wiggins, was similar, but both were inferior in point of size and quality.

**Begonias.**—Both of the collections of six plants were fine, particularly that in the amateurs' class for six plants. These were from Mr. Child, the varieties being *Reine Blanche*, 3 ft. through, J. W. Farrand, *Kallista*, *Lælia*, *Miss Bertha*, and *Monarch*. Mr. Coppin's group consisted of fine plants of *Sir Bartle Frere*, *Venus*, *Mrs. C. Goschen*, *Olympus*, *Mrs. H. Coppin*, and *Marie*.

**Heaths.**—These were far finer than usual, especially those from the Kingston Nursery, which comprised *Erica ventricosa Bothwelliana*, *E. tricolor rosea*, *E. Parmenteri rosea*, *E. Vernoni*, and *E. Kingstonensis*. The second collection was also fine, consisting of large examples of *E. Easoniana*, *gemmifera elegans*, *tricolor Holfordiana*, and *Paxtoni*.

**Cut Flowers, Roses.**—These were not numerous, but very fine. In the nurserymen's class for forty-eight single trusses, Mr. Cant had a very fine collection, all in first-rate condition; and scarcely inferior were those from Mr. Turner for the second place; but this exhibitor secured the first prize for twenty-four treble trusses, while Mr. Cant was second, and Messrs. Paul, Cheshunt, the third. Three other collections were shown. The amateurs' class was not well represented; Messrs. Moorman, Hawtrej, and Hollingworth were the only exhibitors who were placed in the order named. The best dozen Roses of any variety were some fine *Marie Baumanns* from Mr. Cant, who also showed *Devoniensis* for the best white, while Mr. Rann was the only exhibitor of a yellow variety, showing *Gloire de Dijon*.

**Stove and Greenhouse Flowers.**—The finest 24 trusses of these came from Mr. Morse, Epsom, who had a fine collection, among which were *Anthuriums*, *Allamandas*, *Orchids*, *Passion-flowers*, &c. The other collection from Mr. Rann was also good. The only exhibitor of twelve cut trusses of *Orchids* was Mr. Douglas, who had some fine blooms, among which were *Vanda teres*, *Odontoglossum vexillarium*, *Roelzi*, *hastilabium*, and *crispum* in fine condition.

**Hardy Herbaceous Flowers** were shown well by Messrs. Hooper, and Mr. Douglas, and Mr. Bolton who were placed in the order named. In the first collection were some fine *Larkspurs*, *Foxgloves*, *Irises*, *Kämpfer's Iris*, *Spiræa palmata*, *Scarlet Larkspur*, *Carnations*, *Alstroemeria aurea*.

**Miscellaneous Class.**—This constituted a most important feature, for without it the large tent would have been but scantily furnished. The central mounds in the tents were occupied by four miscellaneous groups of plants all arranged in a tasteful manner. Messrs. Veitch exhibited one which consisted, besides the plants before mentioned, many other new and rare kinds, either of

an ornamental-leaved character or flowering. Opposite to this was one from Messrs. Laing, in which some grand specimens of *Begonias* formed a conspicuous feature. Mr. Williams' group of new and rare ornamental foliaged and flowering plants was another fine object, while opposite was a similarly large one from the General Horticultural Company, in which Mr. Wills produced a fine effect with a collection of *Crotons*, *Dracænas* interspersed with other fine foliaged and flowering plants. Near to this group Messrs. Carter & Co. had a large display of *Petunias* and *Coleus*, the former in large numbers, and arranged so as to produce a striking effect. A bright collection of *Pelargoniums* from Messrs. Cannell & Son were highly attractive, as were also other miscellaneous groups, arranged in a tasteful manner.

**Fruit.**—There was an excellent display of fruits, which were on the whole of fine quality. Collections of six kinds were shown by eight exhibitors. The finest came from Mr. Wildsmith, gardener to Viscount Eversley, Heckfield Place, Winchfield, which consisted of *Black Hamburg* and *Muscat of Alexandria*, *Royal George Peaches*, *Elrue Nectarine*, *Queen Pine*, and *Heckfield Hybrid Melon*, all in fine condition. The next, from Mr. Coleman, Eastnor Castle, contained fine examples of *Black Hamburg Grapes*, *Queen Pine*, *Lord Napier Nectarine*, *Bellegarde Peach*, and *Colston Bassett Melon*. The third collection, from Mr. Miles, Wycombe Abbey, contained fine *Foster's Seedling* and *Black Hamburg Grape*, *Royal George Peach*, and *Elrue Nectarine*. In the other collections were some very fine *Dr. Hogg Strawberries*, *Violette Hative Peach*, and *Black Hamburg Grapes*. The latter, from Mr. Pratt, Hawstone, Shrewsbury, were particularly fine.

**Pine-apples.**—About a score of these were shown, and some were very fine. Nine Queens were shown. The best, from Mr. Bailey, Shardeoles, was a splendid fruit. In the class for any variety there were ten fruits shown. A *Smooth Cayenne* from Mr. McIndoe took the first, a fair sized fruit of *Lord Cardington*, from Mr. Miller, for the second, and a fine *Montserrat* from Mr. Wilkinson was equal second.

**Grapes.**—These were fairly well shown and rather numerous. There were thirteen collections of three bunches of *Black Hamburg*, and those which took the three prizes were very fine in every point. Four collections of any variety were shown. Some fine *Black Hamburgs* from Mr. P. Edwards were first, *Madresfield Court* second, and *Black Prince* third. The four collections of *Muscat of Alexandria* were poor, the date being too early, as were also the white *Grapes* of any other kind. The baskets of black *Grapes* were very good, particularly those from Messrs. Edwards, Wildsmith, and Coleman, who were the prize-takers. Eight other baskets were shown. The baskets of white *Grapes* were six in number, but none of the bunches were thoroughly ripe.

**Peaches and Nectarines.**—Twenty dishes of the former were shown. A fine half-dozen of *Chancellor*, from Mr. Edmonds, were first; *Bellegarde* was next, and *Gros Mignonne* third. A similar number of dishes represented the *Nectarines*. Mr. Edmonds was again first with fine fruits of *Lord Napier*, while the same variety obtained the second and third prizes.

**Strawberries.**—There were twenty-four dishes of these shown. Mr. Miles showed a fine dish of *James Veitch* and *Sir J. Paxton* for the first; *Mr. Allan, Sir Harry and President* for the second; and *Mr. Douglas, Unser Fritz* and *Loxford Hall Seedling* for the third.

**Melons.**—The class for two sorts was represented by a dozen pairs of fruits. Mr. Carmichael, Bury St. Edmunds, was awarded the first prize for *Semper Fidelis*, a large netted red-fleshed sort, and *Newton Court*, a green firm green flesh. Mr. Coleman for the second had *Dickson's Exquisite* and *Hendre's Seedling*; and Mr. Allan took the third with *Benham Park* and *Ne Plus Ultra*. *Heckfield Hybrid*, *Blenheim Orange*, *Eastnor Castle*, *Hero* of



Lockinge were also shown well. Besides these a collection of twenty kinds was shown by Mr. Robins, Aylesbury, which was awarded a large bronze medal. Mr. Crump, of Blenheim, also showed five fine fruits of Blenheim Orange.

**Cherries**, of two dishes each were shown by eight exhibitors. Mr. Bailey took the first prize with Bigarreau and Black Circassian; Mr. Mills the second with the same varieties, and Bigarreau Napoleon and May Duke took the third from Mr. Douglas. Figs were only shown by three exhibitors. Mr. Coleman took the first prize with fine fruits of Brown Turkey.

**Fruiterers' Company's Prizes.**—On this occasion the valuable prizes (ten and five guineas) offered by the Fruiterers' Company for the best collection of fruit, and also a prize of a piece of plate, valued at ten guineas, for the exhibitor who should take the highest amount in prize money at the Royal Botanic Society's Fruit Exhibition, took place. There were but two collections shown, one from Mr. Coleman, gardener to Earl Somers, Eastnor Castle, the other from Mr. Wildsmith, gardener to Viscount Eversley, Heckfield Place; these exhibitors took the first and second prizes respectively. Mr. Coleman's collection numbered about twenty-five dishes, consisting of five of Grapes (three bunches in each), four Pines, four Melons, two of Peaches, two Nectarines, three of Strawberries, two of Figs, three of Cherries. These fruits were all of high-class quality, and the sorts were of the best.

Mr. Wildsmith's collection was more numerous, there being nearly forty dishes in all, consisting of five sets of Grapes, two Pines, seven Melons, three of Figs, six of Strawberries, six of Cherries, eight of Peaches, and three of Nectarines. These were all likewise fine examples of skilful culture. The same exhibitor also won the piece of plate as the highest prizetaker in the fruit show.

A list of awards will be found in our advertising columns.

#### CARDIFF ROSE SHOW.

THE impression is not uncommon that England, the proverbial home of the Rose, is the only part of our island in which the queen of flowers is grown, shown and cherished as she ought to be; but although this idea might be true at one time, it cannot be proved to be so at present. Scotland, I know, is proud of her Roses, and Wales looks on them with the greatest admiration, and in our beloved principality the cultivation of the Rose is carried on as extensively and to as great a state of perfection as is to be found in the most Rosy counties in England. True, against some of the large ironworks, where the most hardy vegetation has much difficulty in existing, Roses cannot be found in a condition to equal Canon Hole's wonderful collections about Nottingham, but far up in the rugged hills and low down in the fertile valleys, in the gardens of the well-to-do, and against the walls of the cottages, Roses are grown with much success. At high elevations, where dwellings are frequently built, as much forethought is exercised to secure a sheltered nook for Roses as there is for the choicest vegetables. That this feeling should exist and be extending in Wales will surprise no one who knows the kindly feeling and poetic character of her people. A taste for flowers they most undoubtedly possess, and if Roses are not connected with every habitation, it is simply from want of a perfect knowledge of how to set about getting and keeping them. For some reason or other most of our Roses are standards, but that dwarfs are the best type to grow is now generally admitted, and to all Rose growers in Wales and elsewhere this fact cannot be too well known.

As a rule, the climate and soil of Wales suit Roses well, as we generally see them growing with as much luxuriance in all our counties as we have ever observed them in England. The winters, too, although severe, are not so very injurious to them, and, altogether, those beginning Rose culture in Wales have everything to encourage them and nothing to fear. Rich soil, dwarf plants, plenty

of moisture, and a genial climate are a few of the main conditions necessary to ensure an abundant supply of superb blooms, and most of these are naturally at hand. As further proof that Roses will do well in Wales when almost a failure elsewhere, I may say that this year the Rose crop in Wales is unusually fine, and the blooms in numbers and quality excellent. A special Rose Society has lately been formed in Cardiff, and its first show was held there on Wednesday last. Although open to the United Kingdom, all the finest Roses shown were Welsh—a gratifying fact, as far as the principality is concerned.

The classes numbered some 29. In the nurserymen's class for 48 distinct varieties, the first prize was gained by Messrs. Cranston, of Hereford, whose blooms were in fine condition, particularly Boildieu, Souvenir d'Elise, Mrs. Baker, Monsieur E. Y. Teas, Marquise de Castellane, and Senateur Vaisse. The second prize in this class was won by Mr. Stephen Treseder, Ely Road Nurseries, Cardiff, whose blooms were little if any inferior to those from Hereford. For twenty-four distinct varieties £5 and the silver medal of the National Rose Society were offered, and this much coveted prize was won by Mr. R. Crossling, gardener to Lord Windsor, St. Fagan's Castle, Cardiff. His blooms were well shown, and excellent in quality. Mr. Pettigrew, gardener to Lord Bute, was a close second, his blooms being uniformly good, but rather wanting in size. In the class for twelve distinct varieties three trusses of each were shown. Mr. Pettigrew was first. For twelve distinct Teas Mr. Crossling secured the first prize with Letty Coles, Niphotos, President, Catherine Mermet, and Marie Van Houtte, and other equally fine blooms. In addition to the prizes offered by the Society, Lord Bute gave £5 and £3 for the best box of the old York and Lancaster Rose, and the first of these prizes was easily secured by Mr. Pettigrew, with a really magnificent boxful. Mrs. Lee, The Mount, Dinas Powis, was second. Other special prizes were given by the Mayor and others in the neighbourhood of Cardiff; and the first show of the Cardiff Rose Society may well be considered a success.

CAMBRIAN.

#### LATE NOTES AND QUESTIONS.

**Diseased Datura Leaves.**—*D.*—Round the small holes with corroded edges on the leaves sent there are a number of extremely small brownish insects (or a larval form of some insect) about 1-80th in. long. Wash them well with soap and water.

**Diseased Vine Leaves.**—*W. G., Liffon.*—The leaves are covered with the mycelium of a superficial fungus. The spawm will probably give rise to *Oidium Tuckeri*—the Vine mildew. Sulphur fumes are effectual in destroying this, but they must be employed with care.

**Gardening in the Channel Islands.**—Will any of the readers of THE GARDEN oblige me by saying whether Jersey or Guernsey are suitable for gardening—I mean economical gardening, whether the thermometer ever falls below the freezing point, whether water for gardening purposes is easily procured, and which of the two islands is to be preferred for growing plants of all sorts? Are there any books on the Channel Islands describing the climate, mode of living, &c.?—*E. B.*

**Grapes not Setting.**—*A. Bover.*—A very bad case of imperfect fertilisation. The Black Alicante variety, though not a bad setter in the strict sense of that term, produces, unless artificial aid is afforded, a larger percentage of stoneless berries than any other variety with which I am acquainted; the remedy, therefore, is obvious, namely, when in flower to aid fertilisation by distributing the pollen from one bunch to another with a camel's-hair pencil, and if the pollen can be collected from the varieties that may be in flower at the same time good results will be more certain. The conditions as to the successful distribution of pollen are a moderately dry and buoyant atmosphere.—*W. W.*

**Names of Plants.**—*R. G. G.*—1. *Polemonium ceruleum album*; 2. *Epilobium angustifolium album*; 3. *Niphon vulgare sordidum*; 4. *Astrantia major*.—*W. H.*—1. *Kerria japonica fl. pl.*; 2. *Thalictrum aquilegifolium*; 3. *Hieracium aurantiacum*; 4. *Centranthus ruber*.—*Miss Farrer.*—*Aristolochia Siphon*—*H. P. M.*—Probably a kind of Poplar, but we cannot name accurately from leaves only.—*S. G. B.*—*Lilium Martagon album* (not common).—*F. R. M.*—1. *Campanula pusilla alba*; 2. *C. muralis*; 3. species of *Viola*, not in condition to name; 4. *Lamium Galeobdolon*.—*Mac.*—1. *Centranthus ruber*; 2. *Galega persica* var.—*A. P.*—*Muscari monstrosum*.—*W. E. G.*—*Aristolochia Clematidis*, *Achillea Millefolium rosea*.—*E. Molyneux*.—1. *Veronica longi-*

*folia variegata*; 2. *Delphinium* (garden variety); 3. *Eriogonum fruticosum*; 4. *Campanula persicifolia*; 5. *Epilobium angustifolium*; 6. *Veronica Teucrium* var.—*J. G. K.*—*Francia sonchifolia*.—*J. Read.*—Next week.

**London and International Horticultural Directory.**—We should be greatly obliged by nurserymen and others aiding us in the compilation of this directory by furnishing lists of those occupied in the business of horticulture within their respective districts, and in all cases under the towns or places, and including important agricultural houses also.

**The Dominy Presentation.**—Mr. Dominy well deserves some reward for the services he has rendered to horticulture. He was the first hybridist who was successful in producing hybrid Orchids and Nepenthes, to say nothing of other plants; and when we realise the fact that to him we owe *Calanthe Veitchii* and *Cattleya exoniensis*, the first one of the most useful, and the second one of the most beautiful of all Orchidaceous plants, it will be seen how deeply we are indebted to him. If it be true that "a man's life's work is his most telling monument," then is Mr. Dominy honoured above most men in his own sphere, and it behoves horticulturists to be jealous of the honour due to their original workers, since through them only will she be remembered in the days when present-day practice shall become future history.—*DUBLINENSIS.*

**Mulching v. Top-dressing.**—The value of mulching is only fully apparent in seasons like the present of protracted drought; and, although frequently confounded with top-dressing or manuring, it is really quite distinct. Yet when the two can be combined it is a decided gain, as, for instance, in mulching Strawberries with litter more or less impregnated with manurial properties, it is a decided gain to have the rain or water that is artificially applied passing through it, and while it cleanses the mulching, it at the same time carries down stimulants for the ripening crop. But, lacking the means of supplying all the crops that would be benefited by such a mulching, there are many things that might be utilised for keeping the roots of fruit and vegetable crops moist that might in themselves have but little manurial value, but which, by checking evaporation and warding off the scorching rays of the sun, greatly help whatever crop they are applied to. In mulching wall trees, for instance, we only do what they, to a great extent, do for themselves under more natural conditions; for, whether as bush or standard trees, the tops shade the roots to a great extent, and with all deciduous trees the falling leaves of winter make an effective mulch against the winter's colds and the summer's heat and drought; I find, indeed, that even the thinnest coating of short grass make a vast difference in retaining moisture in the soil. In fact, when wall trees really stand in need of artificial applications of water, it is always labour saved to mulch the surface soil with some kind of material to check evaporation; and if the trees are bearing a heavy crop, and not over luxuriant, there is nothing like good farmyard manure. Watering through it carries its manurial properties down to the roots; but if the trees be strong, we find some non-stimulating material the best, as over-luxuriance is quite as likely to end in infertility as debility. In watering fruit trees it is useless to adopt half measures; they require thoroughly saturating. Vegetable crops, such as Peas, Scarlet Runners, Vegetable Marrows, and similar subjects, should have some covering over the surface of the soil as far as the roots extend; and in the pleasure grounds short grass from lawns may be utilised for mulching trees and shrubs, for, if evenly spread over the soil under the branches, it will be no means unsightly, and will gradually become absorbed. In the flower garden a mulching of cocoa fibre over the surface of the beds is a great saving as regards the use of the watering-pot, and a decided benefit to the plants; and where the supply of water is limited it will be found not only the best, but the cheapest method in the end.—*J. GROOM.*



"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare*.

## HOUSES FOR GREEN VEGETABLES IN WINTER AND SPRING.

I AM desirous of making an experiment on which I should like the opinion of some of your experienced readers, the more so as I never saw what I am thinking of well carried out, or even attempted. I wish to make a series of houses to afford the greatest possible amount of green tender vegetables in winter and spring—Kidney Beans, Peas, herbs, and also Tomatoes and Strawberries if the house can be made suitable for these, bearing in mind that the essential object is plenty of tender green vegetables. Asparagus and Seakale would be desirable also. A main object of the plan I have in view, however, would be the preservation of the best vegetables of the open garden, which have so often perished during recent winters; and therefore, of the three or four sized houses I propose to erect, a considerable portion should, I suppose, be used as a store to save and keep in fresh condition the choicest portion of the outdoor crops, such as Celery, Broccoli, &c. Should I have lean-to or half-span houses facing south, or a span roof facing north and south? Would the open garden vegetables, taken indoors, not do better in a north light and not directly exposed to sunshine? To what extent should I heat the house for forcing Beans, &c.? What green vegetables are most desirable to grow indoors in winter or spring? or are there any worth growing after the French Bean? I am willing to carry out any experiment in the best manner as regards building, and will be greatly obliged to any of the readers of THE GARDEN for any hints or for any note as to any good practice of the kind I allude to that has come within their observation. I can find plenty of well constructed plant and fruit and propagating houses, but in my own neighbourhood little that is suggestive of the plan I have in view.—H. [We shall be glad if any of our readers who have had similar wants to supply will kindly answer this interesting question.—Ed.]

## COOL HOUSES PROFITABLE.

**Roses.**—No houses are so profitable as unheated ones, as in that case one escapes the coal bill, which takes such a quantity of produce to pay. The best paying things in cool houses consist of *Maréchal Niel* Roses, white *Camellias*, *Mushrooms*, and *Mignonette*. Strawberries also pay, but they should be confined to Sir Charles Napier. Beginning with the two grand Roses, *Maréchal Niel* and *Lamarque*, the great drawback is their being often on wrong stocks. They should be on the common Brier, but young Briers. Hide-bound stocks never swell in unison with the scion, but by using them young, say the thickness of one's thumb, with all the spines on, stocks and scions swell together and flourish—no dying off at the collar; in fact, all is well balanced and success becomes a certainty. These stocks should be the height of the front of the house, planted 6 ft. apart. Remove every bud but two, and encourage these to grow. I have this year grown them 22 ft. in length. Let them reach the top of the house, then stop them. A very good way to fill the house quickly is to train one shoot of each plant horizontally, and so have a couple of shoots all along the bottom. After flowering, cut back those shoots that have run up the roof, say the end of May, and then begin by disbudding those along the front, leaving plenty to pick from, and begin to fill your house the second year. These

young shoots should be trained 15 in. from the glass, and 15 in. will be wide enough apart. Large bright yellow Roses are the things to sell. The shade of the leaves gives the colour, and the robustness of growth the size. Therefore, cut the Roses down to the bottom wire every year, and train the young shoots as before said. Good heavy loam, enriched with rotten cow manure, is the best compost for them. Well drain the border, and when young water freely. If I were going to plant any quantity I should plant the stocks inside the house, bud them in June, and break them the same season. I have here five rafters covered with Roses (*Maréchal Niel*), and this season, besides supplying them by the two dozen at a time for private purposes, they have realised £12. If the houses are lean-tos, plant *Camellias*, and nail them to the back wall, but they must be all whites; these and the fimbriated sell best. Good yellow loam alone with plenty of water is all that is required. If the houses are span-roofed, grow the Roses up each way, to meet at the top, and dispense with *Camellias*.

**Mushrooms.**—From my Mushroom bed, outside 39 yds. long, I have gathered on an average 100 lbs. a week, and sold them from 1s. 4d. to 1s. 6d. per lb., but not in London; there they do not fetch so much money. The secret in making Mushrooms a paying crop lies in well working the manure; generally four times turning is enough. If dry it must be watered and so turned that it becomes short, but not rotten, and the time to begin is September; work all outside, and when ready wheel the material into the house and proceed as follows: Mark out the site of the bed 4 ft. wide and the length of the house; pile the manure up into a ridge, insert sticks to ascertain the temperature, and spawn at new milk warmth; cover in with soil, well beating and treading all firmly.

**Successional Crops.**—Cool houses, to be profitable, must be so arranged that something must be always ready for market. Beginning with Mushrooms in September, and having plenty of glass, one ought to gather Mushrooms by the middle of November and continue doing so until June. The succession will therefore be as follows: first crop, Mushrooms, then *Camellias*, and then Roses, which will all be over by the 1st of June. When the Roses are cut down shut up and box in the sun heat, syringing freely before the Roses get to the top. The *Camellias* must have a bit of tiffany put over them to keep the young shoots from being burned. The Mushroom manure being all wheeled out, dig up the border and plant Tomatoes, which should be 3½ ft. high, supported with stakes. Moderately good ground grows Tomatoes well, but if richly manured, leaves only are the result; so do not use too much manure. If Tomatoes are not thought worth growing, Cucumbers and Melons cannot be substituted, because the Tomatoes will grow in the shade while Melons and Cucumbers must be near the glass. Peaches take four years before they get established, and then the foliage is so dense, nothing grows under it. The last crop of the season should be *Chrysanthemums*, but none but white ones sell well. Presuming there are some old plants in pots, prepare a piece of land outside in May, say the 10th, pull the old stools to pieces, leaving bits of roots to them, plant them with a dibble and sprinkle them with water if the weather is dry three times a week. Stop them the first week in June, and again in the first week in July, but no more. When the Tomatoes are removed in the latter part of October lift the *Chrysanthemums* and put them into their places. The succession will therefore stand thus: November to May, Mushrooms; December to April, *Camellias*; April to May, *Maréchal Niel* Roses; August to October, Tomatoes; and lastly, *Chrysanthemums* up to Christmas.

**Mignonette.**—I have not named *Mignonette* but unless there are stages near the glass it does not succeed. If so, however, nothing pays better. It must never be over 8 in. in height. To grow this plant well obtain 5-in. pots, put one crock at the bottom and a few smaller ones round it, and on the crocks a bit of real good manure. Fill

up the pots with pure loam, and ram them down firmly up to ½ in. of the rim, then put a sprinkling of sand, and on this sow the seed evenly. Cover it, and, with a round bit of wood the size of the top of the pot, press all down level; set them thickly together and cover up with old newspapers, keeping all quite dark until the seedlings appear; thin out, leaving 12 of the strongest, and give all the air you can in order to grow them bushy and dwarf. R. G.

## SUMMER NOTES.

Now that midsummer is past, everything begins to look big and untidy; so it becomes a constant fight to keep the borders trim, the plants properly tied in, and when the bloom is over, cut back. We have filled up the gaps with *Pentstemons*, *Asters*, *African* and *French Marigolds*, and other autumn-bloomers from the reserves, so we shall now be gay for the rest of the season. Irises now come in very useful, especially *Iris anglica*, which is a grand flower. I often wonder why it is not more generally cultivated. We have it here in large quantities, and in solid clumps, showing from ten to twenty flower-stalks, and of every shade of white and grey, blue and purple, and many of the variegated sorts which the Dutch growers send us. They increase from year to year, a single bulb soon becoming a clump. All the Irises are useful, but this is the best. *Violas* now make a pretty display. I think our gardens are made the brightest by them, because of the lively masses of bloom they carry,—wet or fine, especially such sorts as *Picturata*, *Lady Matheson*, and the purple, blue, white, and mulberry-coloured. These now fringe our borders, and are backed up by *Roses*, *Delphiniums*, *Campanulas*, *Pyrethrums*, *Irises*, and other tall-growing plants, forming a very gay mass of bloom.

There are many interesting plants to be noted in the special corners and on the rockeries. *Inula viscosa* and *grandiflora* are useful yellows, the latter resembling a small Sunflower. Two of the late flowering *Forget-me-nots*, the dark blue *Impératrice Elizabeth*, and the light blue *azurea grandiflora* are now one mass of bloom; and we have a good many *Cistus*, of which the best is *C. lusitanica*, with very large white flowers, fully 3 in. across, each of the five petals having a deep crimson spot near its base, and a rich golden centre of feathered anthers. Its only fault is its frailness, for you cannot handle it at all. The latest of the *Primulas* is now at its best—*P. capitata*, and I still think it the loveliest of all, its deep violet flowers and powdered foliage being very beautiful. It also lasts for a much longer time in flower than any other *Primula*, as well as continuing to bloom over a much longer period. It commenced with us in June, and will probably continue blooming till October.

A good many of the yellow *Sedums* are now in flower, such as *kamtschaticum*, and the rockeries are very gay with the *Dianthus*. The best of these are *deltoidea* and *cæsius*, pink; *Balbisi*, white with a pink spot; *Garnerius*, very dark crimson; and *Mons Peliclus*, a curious feathered sort, pure white. *Mule Pinks* do very well on rockeries, and are now very gay indeed. *Veronicas* are just commencing to bloom; of these the most interesting one is *corymbosa*, which carries its flowers very curiously, as its name implies. *Erodium Manescavi* is a capital rockery plant, showing to much greater advantage when perched aloft than in the borders. Another of the *Cranesbills*, *E. hymenoides*, is a very interesting plant, like a miniature fancy *Pelargonium*, having white petals spotted with crimson. The *Tradescantias* are very useful plants in blue, white, and purple, and there are double flowered forms now which are



good. *Arnebia echioides*, which flowers thrice a year, is now coming into bloom for the second time; it has bright yellow flowers, with a deep brown spot on each petal, but these spots fade away, and the flower becomes a self-yellow. This is a very curious fact, and lends additional interest to a plant already peculiar. We have several other rare plants in flower kindly sent last year by Mr. Max Leichtlin, amongst which are *Linaria pallida*, an excellent rock plant of close habit, with grey-green bright foliage and very pretty lilac flowers, like our English Toad-flax, but larger. It remains in bloom a long time, which is a great point. *Prunella pyrenaica*, like a dwarf-growing Betony; *Scutellaria Wrightii*, with pale lavender flowers; and, lastly, *Dracocephalum Ruprechtii*, a very beautiful plant, with long whorls of pale lilac flowers, somewhat like the *Pentstemons*.

*Didsbury.*

BROOKHURST.

### WILD GARDENING.

To the plants recently recommended by Mr. Berry, of Longleat, for wild gardening (p. 41) you should add *Dictamnus Fraxinella*, especially the white form. Last week I had the pleasure of seeing the garden at Crowsley Park, Oxfordshire, where many plants are grown in the long grass. Among these none surprised me so much as the white *Fraxinella*—usually this is not an easy plant to grow, and so slow of increase that "instances are known where the *Fraxinella* has outlived father, son, and grandson on the same spot without increase, all attempts at multiplying it having failed." Yet in the long grass at Crowsley Park it seems to revel singly, but very striking in the mass. It is perfectly hardy. The other plant is *Oreocome Candollei*, one of Max Leichtlin's good introductions. This too stands about 6 ft. high, strong and erect. The leaves are as finely cut as a *Todea*, and the flower-stems end in one large umbel divided into many small umbels, the flowers white, and the pedicels also white and transparent. In the sunshine, when seen with the light shining through, the appearance is very beautiful and peculiar. It is quite hardy, but I do not know its native country. I shall let both these plants form seed, which I shall be glad to give to any who would like to try them. — HENRY N. ELLACOMBE, *Bitton Vicarage*.

### THOUGHTS ABOUT ROSES.

UTTERED AT SHEFFIELD, JULY, 1881,  
BY S. REYNOLDS HOLE.

MANY years ago, in the palmy days of the Garrick Club, when Dickens, and Thackeray, and John Leach, and A'Beckett, and Douglas Jerrold, and Shirley Brooks, and many other bright stars no longer visible in this firmament were its constant inmates, I was engaged there one evening, like a good gardener, in the act of fumigation—I was destroying a weed. I had two companions, and a conversation arose between them concerning a work which had been recently published, and had created a great interest—Buckle's "History of Civilisation in England." The dialogue ultimately resolved itself into an argument as to the future achievements of science and philosophy; one of the speakers, who was then among the most brilliant writers of the *Times* newspaper, prophesying unlimited power and happiness from the victorious march of intellect; the other expressing far less confidence in the capacities of human reason, maintaining, with Newton, that it always had been, as it was and would be, but as a little child picking pebbles on the great sea's shore, and that for himself, the chief result of his knowledge was to show him how little he knew. My humble sympathies were all with

him who expressed these latter views of the question—his name was William Makepeace Thackeray—and my humble sympathies are with him now, when, after thirty-five years of enthusiastic love among the Roses—thirty-five years of daily observation, anxious inquiry, careful culture—I come to communicate results.

I feel much as I felt when, travelling one day on the underground rail, I misunderstood directions, and, crossing the wrong bridge, found myself, after forty minutes' absence, at the station from which I started. I go back thirty-five years—nay, to a yet more distant period, for there is a tradition in my family that my love of the Rose began with babyhood, and that I made a clutch at an artificial specimen which adorned my nurse's cap (I can't say whether the Rose was a monthly Rose, but I have a strong idea the nurse was), and tried to devour it, and so to die of a Rose, without the aromatic pain—and I recall the same unsatisfied craving for the Rose in its perfection which I feel to-day; and though since that distant date I have grown Roses by the thousand, and instituted Rose shows, and won silver cups by the score, and walked through miles of Roses as a judge, and written a book about Roses, I am here after all to confess that my knowledge, as compared with my ignorance, is as a penny squib to a comet, as an unfledged tomtit to a flying eagle; that I have made mistakes innumerable; that I have planted too deep and too shallow, pruned too long and too short, too early and too late, manured too much and too little, exhibited flowers which were superannuated, and flowers which had not arrived at Rosehood; that I have succeeded where I expected to fail, and failed where I hoped to succeed.

The explanation is, that the Rose, like the only object of our admiration which excels her in beauty, that *Flora*, like the rest of the fair sex, is delightfully mysterious and difficult to understand. From the variableness of our climate, from differences of soil, from delicacy of constitution, lovely Roses, like lovely ladies, are by no means easy of cultivation. In both cases you may be too attentive, and then the objects of your affection exalt themselves unduly, or, as we gardeners term it, "run to leaf." On the other hand, if you have been neglectful or indifferent, when you go to gather Roses you will find—thorns. You must be devoted, but not too demonstrative—hopeful, but not presumptuous; and then, when your loyalty and love are proved, you may win the smile of beauty; even then uncertain and capricious, coming sometimes when we least expect it, and suddenly changing into a frown, without a glimpse of explanation. Ah, my brothers, don't you remember how graciously and beautifully that Marie Baumann came out on the eve of the show, when you had given up hope, and how, on the contrary, that Marie Finger (will any one inform me whether Marry Finger means the third of the left hand?) on whom we relied so confidently, shut herself up, and remained motionless, as though in a swoon, despite every effort which was made to rouse her, by blowing into her face, and putting her feet in hot water?

But you will begin to murmur internally, "Surely this man is not come all the way to Sheffield to tell us that he knows nothing," if not to express your remonstrance, as when the blue ox of Artemus Ward rubbed some of his paint off against the central pole of the exhibition tent, and the spectators openly declared that "that sort of thing would not go down in their enlightened district." I hear you say, "Let us have the results of your experience, however small they may be;" as when an Oxford examiner, being told by an under graduate who

had failed dismally, that he had not been questioned upon the subjects which he knew the best, tore off a tiny scrap from the paper before him, and handed it to the plaintiff, saying, "Be so good as to write what you know on that."

Gladly and unreservedly I offer you the result of my experience with regard to the cultivation of the Rose. In the first place, as I have already intimated, your heart must be in your enterprise. There is a good deal of "mere verbiage"—frothy effervescence, humbug—in some of those gushing expressions of delight and admiration which we hear so often. "Oh, Canon Hole, what a heavenly duck of a Rose!" "Well, it's not quite in its best form as you see it there." "No; but isn't it too awfully jollily not quite?" Misled on one occasion by these professions of adoration, I presented a lady with a lovely Rose, and, not long after, when she became intense upon some other topic, she began to pick off the petals! I stood astounded, like Launcelot when

the Queen  
Broke from the vast, oriel-embowering vine  
Leaf after leaf, and tore, and cast them off,  
Till all the place she stood whereon was green:

and then I remembered I had business in another direction, and I went to it, a sadder and a wiser man.

Then there are not a few professed admirers of Roses who only want them to show, or to cut, or to make their neighbours jealous. They have no true appreciation of the flower as a thing of beauty and a joy for ever, but regard it as ornamental furniture, and the sort of thing one likes to have, you know. They come into your garden, and you show them some specimen of perfect loveliness, and they turn away, saying disdainfully, "We have heaps of those" (as if they were coals or Potatoes); or, should it happen to be something which they do not possess, they condescend to take a note of the name, and they seem to think that they are conferring a great honour, not upon you, but upon the whole vegetable kingdom, when they make the announcement, "We must have that."

Supposing the love to be sincere and the intentions hearty, what next? Pure air. And with a most unaffected sorrowful sympathy I speak those words, because to hundreds who love the Rose as well as I do they mean no hope. Every year, and many and many a time in that year, "when the bloom is on the Rye," and on the Rose, I wish from my heart, as I wander in my peaceful pleasant gardens, that my brothers—born and bred, some of them 'mid gardens and green fields, but now toiling in dusky lane and wrangling mart, and having only caged birds and window plants to remind them of the past—could share my happiness. I have seen good Roses, it is true, which were grown within three miles and a half of St. Paul's Cathedral, and were exhibited at the first Crystal Palace Rose Show by the grower, my friend Mr. Shirley Hibberd. But the disappointments are so many, and the successes so few, that I should say to all persons proposing to grow Roses within six miles of a smoky manufacturing town or city, as *Punch* said to all persons about to marry—"Don't."

This pure air must nimbly and sweetly recommend itself to the Rose, but must not visit her cheek too roughly. Roses must have shelter, but not shade—free trade in sunshine, but protection from storms. They should have a screen of shrubs or of walls, but they must not be placed too near it. They dislike wind; and, as all things else which are fresh and clean, from a fair reputation to a leg of mutton, they must not be blown upon. Let your Rose trees have



all the sun (it is not much) which can be had in this cloudy clime.

As to soil, I have seen Roses growing, and have grown them, in all kinds of earth, from a heavy moist red clay to a light marly loam—in everything except gravel. If you have not a good soil naturally you must have it artificially; if it is too heavy, make it light with lime, ashes, burnt earth; if it is weak, strengthen it with turf, leaf-mould, &c. Unbounded nonsense is emitted concerning soil. If Roses were good to eat we should have no more of it, but as it is, you will hear persons who grow delicious Asparagus, the mealiest of Potatoes, and the biggest of Strawberries maintaining that it is simply impossible to grow Roses in such a soil as theirs. The best soil which I have ever possessed was a rich old pasture, broken up some six years ago. It was "double dug," and having been well manured and manipulated ever since it is now most friable, mellow, and nutritious—good enough for pot Roses without any addition, except the crocks for drainage.

What form of Rose tree shall we grow? Our fathers were in ecstasies when Mr. Lee, of Hammersmith, and Mr. Rivers, of Sawbridgeworth, introduced from Belgium (I think) the tall standards, and they bought them at a guinea apiece. Their children denounce them as mops and broomsticks—unnatural, and therefore unsightly, they are gradually disappearing, but a few old fogies, including yours sincerely, will plant a few standard Briers each year, and bud them in some quiet corner, because when there is a genial frostless May—a phenomenon which occurs in this country about twice in a long lifetime—those buds will produce the loveliest Roses which the rosarian can hope to see. With us (the fogies) they will perish, until—like single Dahlias, stage coaches, short waists, and cracked china—they are reproduced by fashion as delectable novelties, and Vox Populi shouts, "Bravo! Beautiful!"

The bush is beyond a doubt the prettiest form in which we can grow the Rose, and this we obtain by grafting, or budding, or by striking cuttings from the parent plant. You have all beauty of flower, foliage, and form under your eye, with this additional and supreme advantage over the standard tree, that, when you have placed a thick blanket—that is a good covering of straw manure—over your sleeping beauties towards the end of November, you may go to bed with the thermometer at zero and dream of Rose shows. A bed of these dwarf Roses, with the long laterals pegged down one year, and blooming from laterals of their own the next, is one of the most charming sights in a garden. The bed should be round or oval, raised in the centre, and with a large surrounding of well-kept Grass.

On what foundations shall we build? This depends much upon the soil. Make experiment. Procure Rose trees on the Brier, on the Manetti, and on their own roots from the nurseries, and also Brier and Manetti stocks for budding in due season. Try your hand at striking also, and note results. In my own case, the foreigner (it takes its name from Signor Manetti, who raised it from seed at Monza, gave it to Signor Crivelli, of Como, and he sent it to my beloved friend—the beloved friend of all rosarians—Thomas Rivers, of Sawbridgeworth, about the year 1833), the Manetti in my strong soil is worthless; the indigenous Brier, the English Dog Rose, is always a success. Nevertheless, I am more inclined by my experience to the belief that the favourite Rose tree of the future will be the Rose tree on its own roots. Meanwhile, give me the Brier, whether it be grown from seed, struck from cuttings, or taken from the hedge-row or the wood.

What sorts, what varieties of Roses shall we

grow? All sorts. Single and double, large and small. And in all forms—trailing along banks or towering on walls; making fountains, arches, and aisles; glimmering in plantations like "stars which in earth's firmament do shine;" rising from beds of shrubs, or circling them, as we saw the old China Rose the other day in the gardens of the Crystal Palace. He is no true rosarian who does not love all the Roses; and some of you may have read the public and indignant protest which I have made against an accusation which has been brought against us, that, because we believe those Roses which you have seen to-day to be of all the most beautiful, we are indifferent as to the other varieties, and it has been suggested that, because the National Rose Society proposes to publish a catalogue of Roses most suitable for exhibition, it may be necessary to establish a rival institution to watch over the interests of Roses for the garden only. I think—and it is such a happy thought as even Burnand himself never excogitated—that I know more rosarians, and more of the rosarian mind, than any other living man, and what I know most surely is this, that he who loves one Rose loves them all. Only the other day, when I had left in the garden some of the loveliest Roses I ever grew, and was on my way to the station, that I might adjudicate next day at the Crystal Palace aforesaid, I surprised a servant who was with me by stopping my dogcart to gaze at a garland of Dog Roses drooping down the roadside hedge, and I believe that most of my brethren would have been as charmed as I was. Where is the exhibitor of Roses who does not grow Roses which are not available for exhibition? Name the writer on Roses who writes about show Roses only. Thomas Rivers gives us half-a-dozen pages in his "Rose Amateur's Guide" as to the exhibition of Roses in pots. William Paul, in "The Rose Garden," the same quantity on cut Roses for show, the remainder of the 300 pages being devoted to garden Roses. Shirley Hibberd, in "The Amateur's Rose Book" gives a similar space to the subject of exhibition, and even he, who wrote specially upon it, How to Show the Rose, occupies not less than two-thirds of his book in discoursing upon the garden Rose.

In fact, and in fine, it seems to me (though I must whisper this quite *sub rosa*) that some of our friends, who, from soil, situation, or want of zeal, do not grow the most perfect Roses in their most perfect form, are at times a little invidious ("we are the sons of women, Master Page"), and that when they declaim against our "huge, fat, overgrown Roses, which anybody can have who will pluck off all the buds but one, and put on tons of manure;" and when they go into ecstasies about "the darling old Cabbage, and the exquisite York and Lancaster, and the dear old Tuscan, and the rich velvety Damask, and the little gem Rose de Meaux"—this, in most cases, means to me, "You won't find a Rose in my garden which anyone would look at at a Rose show;" it has the same significance as when short girls call long girls gawky maypoles, or as when gentlemen who are not at their ease on horseback disparage the pleasures of the chase. Give me the sight that is clear enough, and the heart large enough, to see and to admire beauty wherever, and in whatever form, it is found. I don't believe in musicians who chatter when others sing or play. I condemn the critic who gloats upon a flaw (just as that clumsy rider of whom I spoke will go a mile out of his way to find a weak place in a fence), who, if he praises, nullifies his praise: "Ah, yes, she's pretty, but, my dear fellow, she has the fist of a pugilist;" "bats nicely, but a mere dummy in the field;" "fair at feathers, but a muff at fur" (this I once heard from a third-rate shot of one

of the best gunners of the day, who had missed an invisible rabbit); "undoubtedly a nice little horse, but I hope you have not given much for him, for those hooks will never carry your weight."

I am constrained to confess that H. M. the Queen of Flowers is not refined in the matter of diet. She is a gross feeder, and when I think of the quality and quantity of her favourite food, I recall a passage in the letters of Charles Kirkpatrick Sharpe: "I met Mrs. Siddons at dinner just before the death of her spouse. It was at Walter Scott's, and you cannot imagine how it annoyed me to behold Belvidera guzzle boiled beef and mustard, swirl porter, take huge pinches of snuff, and laugh till she made the whole room shake again." So does the prima donna of our stage; so does the Rose rejoice in strong sustenance, solid and fluid, with occasional pinches of tobacco powder and lac sulphuris; but, as with Mrs. Siddons, they who had dined with her forgot the beef, and the beer, and "the pungent grains of titillating dust" when she appeared in all her power as an artist. So when we see the Rose in her beauty, we forget the midden and the tank. I go further than this in my devotion to the lady of my love, and her likes are mine also. However unsightly to the eye, or unsavoury to the nose, they seem to say, like the Earth in the Persian fable, "I am not the Rose; but cherish me, for we have dwelt together;" and they do not appeal in vain.

Ever since I lost my heart to the Rose I have been trying to discover the esculent which she most prizes, and at this present time her menu in my garden consists of eight different kinds of (if I may be allowed the expression) manure. These were applied some weeks ago, so that they have been well washed in by the rains, and in every case part of the bed was left without any addition, so that a comparison of results could readily be made. These confections are: 1 cwt. of Peruvian guano; 1 cwt. of pure dissolved bones; 1 cwt. of these two in combination,  $\frac{1}{2}$  cwt. of each; 1 cwt. fine bone-dust; 1 cwt. ammonia phosphate; 1 cwt. mineral phosphate; a small bag of Clay's Fertiliser; an unmeasured quantity of liquid manure from a farmyard tank.

Three of these have signalised themselves by a special success—the farmyard liquor, the Peruvian guano, and Clay's Fertiliser. Pure dissolved bones is second after an interval, closely followed by mineral phosphate. Ammonia phosphate a bad fourth. The rest nowhere. I was prepared for the success of Clay's Fertiliser, having seen a grand collect on of standard Rose trees in pots at the April Show of the Royal Horticultural Society at Kensington, grown by Messrs. Veitch, of Chelsea, and assisted by the reverend—I beg pardon—assisted by the tonic aforesaid. I do not, of course, regard this report as final, and shall note carefully, *pro bono publico*, the future influence of my applications; nor must I forget to remind our younger brethren of other vic-tuals which are wholesome for the Rose, and which they will find in the sheep-fold, in the hen-roost, and the dovecote. Malt-dust, the sweepings of the kilns, or better still, but costlier of course, malt-culms, are also nutritious food. Mr. Rivers's prescription of malt-dust and contributions from the stable, mixed and fermented with liquid manure, is probably the most powerful stimulant which can be given; and I have recorded how, many years ago, I took off my coat and barrowed a large heap of it to a lot of budded standard Rose trees, just before a very heavy thunderstorm, and how some six weeks afterwards this adroit manoeuvre in manures achieved for me the highest honours



of the year—the first prize for forty-eight Roses at our National Show in London. But that victory annihilated the army who won it: not one of these soldiers ever fought again.

What is the main result of my long and varied experience in this matter? It is that I find myself, as upon the Metropolitan Railway, at the place from whence I came. The system which I followed thirty years ago I propose to follow so long as I am attached to this machine, and have the happiness of growing Roses—namely, to give them a liberal supply of farmyard manure about the third week in November, which will act both as food and clothing also; to dig this in early in March, and afterwards to apply occasionally liquid from the tank or some other of the refreshments to which I have referred. From bird or beast, bovine, ovine, porcine, equine, animal or vegetable dust of bone or Barley, I recommend all to your experiment, and leave to you the selection of the fittest.

But the young rosarian must not place his main reliance on these enrichments, indispensable as they are admitted to be; he must not believe in the manure heap, but must regard his soil and its cultivation as of primary and perpetual importance. Success in Rose culture can only be obtained in accordance with the universal and eternal law—you must work to win. There must be draining and digging, hoeing and weeding, and a watchful loving patience, which defends the Rose from its enemies, as well as surrounds it with friends. Hence the paucity of rosarians worthy of the title. There are numbers who gush at shows, take down names, give orders, plant Rose trees, but who never stoop to pull up a weed, and as for extracting the grub from his leafy bower and handling him somewhat severely between finger and thumb, why that is “simply disgusting!” These are the sort of people who think when they have signed a cheque that Roses should immediately spring up around them about the size of punch-bowls, and that thankful nightingales should sing in them night and day. Somehow this firework won't go off. “O, yer don't want to go into business, don't yer?” said an angry father to his lazy and loutish son. “Yer want an appointment in the Post Office, do yer? Post Office indeed! Why, all you're fit for is to stand outside with your tongue out for people to wet their stamp against!” He who would grow Roses must not be afraid of dirtying his fingers—of resembling that clergyman of whom Sidney Smith said, that he “seemed to have a good deal of his glebe on his own hands;” or of a likeness to Martin Barney, to whom Charles Lamb remarked over a rubber, “Oh, Martin, Martin, if dirt were trumps, what a hand you'd have!”

Where shall we buy our Rose trees? From any extensive Rose nursery which is nearest to you, and has a soil most like your own, or from any of those professional rosarians who have shown you to-day what the Rose can be. I say can be, because you must not expect to achieve perfection at once, and your first flowers may perhaps disappoint you. Only be not discouraged; work at your model bravely and you shall reproduce it.

And I advise amateurs to visit some of the renowned homes of the Rose. They will find a far more genial welcome than the mere commercial spirit can give to a customer, because the hearts of our Rose merchants, whose friendship I have enjoyed for so many happy years, is with the Rose; and they will have men as pupils, and please themselves more completely as purchasers, than by any amount of reading or correspondence.

And, on behalf of these visitors, may I express the hope that my professional brothers

will take into consideration whether, in addition to their standard and dwarf Rose trees, they might not exhibit the Queen of Flowers in some other form of beauty, showing us, for example, the best varieties of climbing and pillar Roses, Roses for a shrubbery, Roses for beds, uniform or in contrast, Roses for edging, Roses for bouquets, &c.

But I forget that this is the overture, not the opera, and I hear a bugle-call from conscience, “Let the cannon cease firing.”

It only remains for me, as President of the National Rose Society, to thank you heartily for the pleasant reception which you have given to our brotherhood to-day, and to solicit those who sympathise with us in our desire to extend the love and successful culture of Roses, and therewith, as many who hear me can testify, the happiness of human life, “the purest of human pleasures,” to ask those who are inclined to help us to signify their wish to me or to our secretaries, that their names may be enrolled upon our lists.

## EDITOR'S TABLE.

**Rhododendron cinnabarinum.**—This curious orange-crimson kind comes from Highclere, where it is hardy. It has been figured in THE GARDEN.

A hybrid between the Azalea and Rhododendron—soft bunches of peach-coloured flowers, very freely borne among grassy leaves, glaucous beneath—seems to be a valuable bush as grown at Highclere. Has a delicate scent.

**White Azaleas**, in cool looking bunches, in the middle of July, are welcome among the annuals, which are very showy and numerous just now. A hill garden has many charms in hot weather.

**A Late Rhododendron.**—A fine dark purplish-crimson kind comes from Highclere, one of the seedlings raised in the garden there, and one which we hope will get into general cultivation. It is not often we see one in fresh flower in the middle of July.

**The Californian Buckeye** (*Æsculus californica*).—A valuable tree and rare, flowering long after the common Horse Chestnut. A low, quaint looking shrub on the Californian plains, but in the valleys attaining a height of 40 ft. From Highclere come the best specimens we have seen in this country. Mr. Ross says the head of the tree is 30 ft. in diameter. This proves its hardiness and fitness for our country, as Highclere is far from being very warm, and has a very different climate from the foot-hills of the sierras.

**Yellow Wood in Flower** (*Virgilia lutea*).—Some fine flowering branches of this handsome North American tree come from Highclere, where it evidently thrives better than in most places. The soft green of the pinnate leaves and the pure white pea-shaped blossoms, borne in long racemes, should cause it to be planted more frequently, and it is not only in summer that it is attractive, but again in autumn, when the foliage changes to bright yellow and crimson.

**Scarlet-berried Elder** (*Sambucus racemosa*).—At this season this shrub is a most attractive object on account of its showy clusters of bright red fruits borne in profusion. In others respects it resembles the common Elder, and grows freely, yet how seldom is it seen in gardens or, we might almost say, in nurseries. From Highclere, where it thrives, it is a native of the mountains in middle and south of Europe, growing from 6 ft. to 12 ft. high. In the time of Pinks and Carnations, Lilies, and annuals, and long after the great flowering time of the trees and shrubs, it is pleasant to find oneself surrounded by a little arboretum of tree and shrub blossoms grown on the Hampshire hills, from that noble tree-garden Highclere.

**Double Dyer's Weed** (*Genista tinctoria* fl.-pl.).—A neat low bush, a cultivated form of a native plant, worth a place on sunny bank or rough rock garden; full of flowers.

**Red Souvenir de Malmaison Carnation.**—Good specimens of a variety of the old Carnation of this name. The colour is a rose-pink. From Messrs. Kelway, of Langport.

**Spiræa elegans**, or *S. palmata elegans*, is really very pretty when well grown, as it is by Mr. Wolley Dod. The crowds of little pink stamens give the inflorescence an odd and pretty character.

**Lilium polyphyllum.**—This distinct Lily has a bad scent, a character which we regret to have to give to any flower of so noble a race. Figured in THE GARDEN. Now in bloom in the open air at Colchester.

**Dwarf Chinese Privet.**—Very graceful in foliage, and having a dense spray of white pearl-like buds. Some of the Privets and allied plants deserve a place as flowering shrubs. From Grasmere.

**The Double Sweet William.**—The dwarf double Sweet William, mentioned last week, remains fresh, and is in a cut state placed by itself, and arranged closely and somewhat compactly like a boss of crimson velvet.

**Kramer's Lily.**—From Mr. G. F. Wilson come fine specimens of this Lily grown in a Rhododendron bed; some of the stems bear two, three, and four blossoms, and attain a height of 4 feet.

**Lily Scents.**—In some danger of Lily sickness, so to say; some “powerful” kinds are at once put outside for the benefit of the street. The scent that sweetens a valley or a garden is too much for a room.

**Lilium auratum**, 14 in. in diameter of each bloom, two blooms on the stem. Put outside the window. Brought by Mr. G. F. Wilson along with most graceful and large specimens of Kramer's Lily.

**Parry's Lily.**—Lovely specimens of this, with from three to seven flowers and buds on a spike; habit, form of flower, scent, all good. Buds bold and graceful; over 3 in. long. From the New Plant Co., Colchester.

**Van Houtte's Bell Flower.**—Surprised at seeing this Campanula, a giant from Mr. Wolley Dod; the bells are 3 inches long, and in one sent of a paler colour they are even more. It grows to 5 ft. in length in the “strong soil” at Edge Hall.

**The Glove Pink.**—This delightful border Pink and many others come from Miss Owen, of Gorey. We wish the whole Irish race would take violently to Pink and Pansy culture. The country is loved by flowers; they even grow better than shillelaghs.

**Ceanothus Gloire de Versailles.**—A dense spray of sky-blue flowers from this valuable shrub. Mr. Ross states that it has not suffered at Highclere from recent winters, but whether growing in the open or on a wall is not stated. The Ceanothus on the walls at Arundel have been killed by frost.

**The Brown Daisy.**—Numerous forms, double and single, of this (*Chrysanthemum coronarium*) come from Mr. Balding, of Clapham. Some of the single forms are more striking and valuable than the double ones; the range of colour in *C. tricolor*, from same gentleman, is remarkable.

**July Spiræas.**—Among the shrubby kinds of Spiræa now in flower are *S. callosa* superba, *californica*, *Reeysi*, *semperflorens*, *Billardi*, *carpinifolia*, *ariæfolia*, and *amena*, all graceful and pretty. From Grasmere. Lovely bushes if well grown, well placed, and occasionally and moderately pruned when they get old.

**Mock Oranges** (*Philadelphus*).—How cool and beautiful these are in our hottest weather. Many names, and not so many kinds, but all or



nearly all good. Excellent material for the garden artist of the future. Some old kinds to be rescued from the misery of the shrubbery, and new ones to meet a better fate.

**The First Japan Iris.**—Is evidently of the *Kämpferi* type. It is of the richest puce colour, shaded almost to black, with a beautiful velvety appearance; a few flowers placed in a vase near Parry's Lily have a novel and fine effect. From Colchester, bearing the name *I. violacea* major.

**Flowering Raspberry** (*Rubus odoratus*) is the English name for a free-growing, showy Bramble. It grows well in any copse or wood, and is in flower in July—a good wild garden bush, not uncommon, but not often well placed. The English name is in Gray.

**A Fair White Phlox.**—Lady Napier is the name of a beautiful Phlox sent from Cheshire by Mr. Wolley Dod. It has large flowers of a creamy white, with the little yellow stamens peeping from the centre. How good and well worthy of culture and a suitable place are such Phloxes!

**Mimulus cardinalis** about London is frequently a poor plant; in Mr. Wolley Dod's garden in Cheshire it seems to be fresher. Four forms of it are sent, one a good purple rose with crimson throat. They have a strong musk scent. The varieties of the common *Mimulus* are so much larger and better in habit, that this plant has little claim for general culture.

**Myrtles in Flower** come from Cornwall from Mr. Roberts. Among the "aspects of vegetation" one remembers with pleasure are the Myrtle, Sweet Herb, and Balm-clad copses and knolls of the Mediterranean shore. Where the Myrtle grows in the open air with us, no pains should be spared to give it a fitting place and the soil which it enjoys.

**July Flowering Shrubs.**—Mr. Stevens is strong in these, his later Mock Oranges and *Deutias* being fresh and varied even after the great heats. Mock Oranges, various bushy *Spiræas*, *Viburnum dentatum*, *Cytisus nigricans*, and the sward Chinese Privet are among the best. *Spiræa, arifolia*, with its foam of flowers and buds, is one of the treasures of our gardens, and good in all ways cut or otherwise.

**Beautiful Larkspurs.**—Some ten days ago a superb and numerous series of perennial *Delphiniums* came from Mr. Stevens, so varied and so fine in colour, that no description could do justice to them. He now sends five other kinds that came somewhat later than the others. We hope soon to publish some notes on his collection of these best of hardy mid-summer plants.

**The White Peruvian Lily** (*Alstroemeria Pelegrina alba*) is much like the *Gladiolus*, as it is white, save the greenish spots in the throat. We should like to see a good group of it.

**The Flame Nasturtium** (*Tropæolum speciosum*) in brilliant condition comes from Mr. Kingsmill. One slender shoot of scarlet flowers nearly 6 ft. long.

**The White Musk Mallow** (*Malva moschata alba*).—Very cool and beautiful are bunches of this, one of our most attractive native plants. The perfume is like Musk, but more delicate.

**Pansies.**—The hottest weather we have had for years in London has not dimmed the beauty of these, which come fresh in flower and leaf from Mr. Kingsmill's garden at Eastcote.

**Milla laxa.**—The fine dark purple form of this plant, which we received from Colchester, has surprised us by the length of time it lasts in a cut state in a room. It is so large and bold that it is like a spike of the African Lily (*Agapanthus*).

**Cytisus nigricans.**—A peculiarly pretty broom seen in the cut state. It grows from 3 ft. to 4 ft. high, and about 4 ft. through—a mass of yellow flowers. From Grasmere. More graceful in the racemes of flower than many of its allies.

**Gladiolus The Bride** is chastely beautiful, and a contrast to the brilliant orange-red of *Lilium pulchellum*; both from Mr. Kingsmill. This is a

white variety of *G. Colvillei*, and a useful and graceful plant.

**A most brilliant little Rhododendron** from Mr. Luscombe, of Combe Royal, with leaves not much larger than a Myrtle, and vivid scarlet bells like a bright *Correa* or *Mitraria*. Probably its first visit to London, and the name not yet known to us.

**The Rosy Spiræa** comes in rich and lovely colour from Wales (Mr. Edwin Jackson's). It is one of the best of all the newer hardy flowers; good in foliage as in flower, *Spiræa palmata* deserves our best care; a group filling the whole space between a few select shrubs with plenty of room between is one good way of placing it. Ground not to be dug in winter, only cleared and covered with a dressing of light soil.

**A New Elecampane.**—The "Daisy people" would be delighted to see the flowers of *Inula glandulosa*, an orange-rayed flower, 5 in. across. The ray looks like that of a Japanese *Chrysanthemum*, the divisions being very narrow and somewhat tossed about. So far as can be judged from two cut flowers, this plant is likely to be of more permanent value in our gardens than most plants of the same Order. From Edge Hall.

**Lilium pardalinum from Cheshire.**—This noble Lily seems to do as well in the north-west as in the east of England, judging by specimens from Edge Hall. Let any one look at a well-grown group of this—plants from 6 ft. to 8 ft. high—and he certainly will not remain among those who believe that good colour is only afforded by tender plants. In a garden of hardy plants, properly arranged and well grown, the colour is more brilliant than can be obtained in any other way. We have often said this when everybody laughed at the notion. The day is, however, not far away when it will be clear to all.

**The Hardy Heaths**, varied in form and much varied in colour, are pleasantly suggestive of the airy heaths and hill-sides, the more so to those in the deep hot furrows of London. Apart from the two forms of the Heather, eight kinds of hardy Heaths with pretty little bells, white, pink, crimson, magenta, remind us of Mr. Jackson's garden at Llandegai. They are valuable for cutting for their beauty as well as for what they remind us of in mid-July.

## THE INDOOR GARDEN.

### OLD PLANTS FOR NEW HOUSES.

**Pomegranates** grown as dwarf bushes or low standards are pretty objects in cool houses, their bright scarlet, russet-like flowers producing quite an enlivening effect. They are easily grown in moderately rich loam, and they bloom best if somewhat stinted as regards pot room. For a ladies' head-dress or a button-hole, Pomegranate blooms should become as popular as those of the Carnation. *Punica Granatum nana* is a naturally dwarf kind, and on that account might be preferred by some for small houses.

**Oleanders.**—These pretty flowering shrubs are not nearly so often met with as they deserve to be. The directors of flower shows, especially provincial ones, should, I think, offer special prizes for them. They are poisonous certainly, but so are *Lobelias*, *Petunias*, *Euphorbias*, *Stephanotis*, and *Yew*. If not required large for indoor or outdoor decoration they can be easily grown in small pots, and can be made to bloom abundantly with less care than *Primulas* or *Calceolarias*, and a host of similar material met with in every garden. There are some thirty sorts of Oleander, single and double, in cultivation—*Nerium Maddenii grandiflorum* (double white), *N. flavum duplex*, *N. Delphine*, *N. Madame Baltet*, Professor Planchon, *N. Souvenir de Cazalis Allut* being quite distinct sorts amongst those of recent introduction. They will grow and flower well in a sound loam with

a little manure, sand, and burnt earth or charcoal intermixed. When the plants have got to the size required, annual repotting should give way to biennial partial shaking out and repotting, assistance being given them in the shape of manual waterings in summer. Any place partially lighted and free from frost will suit them in the winter time, and during that period but little water should be given them—say perhaps two or three thorough soakings between November and the beginning of March, depending, of course, on the amount of dryness surrounding them.

**Oranges** are not so often seen in English gardens as they formerly were. I do not mean big plants in tubs which used to be honoured with a house to themselves, and were treated as valuable heirlooms, but handy useful little standards or bushes from 2 ft. to 5 ft. in height. Such plants can be had in bloom during the greater part of the year by treating them successively, and they are always admired for their sweet-smelling flowers and pretty fruits. When once a few plants of certain sorts are obtained, such as *Citrus sinensis*, *C. Daidai*, *C. japonica*, *C. nobilis* (Mandarin), *C. taitensis*, by raising stocks for grafting from seed or cuttings, the various sorts can be easily increased by summer grafting, an interesting and profitable amusement for the amateur.

Nothing is so interesting as a group of such plants in full bloom close to a room window. The lively tender green leaves contrast well with the sweet-smelling blooms and golden fruits (for ripe fruit and blooms are met with together on the same plant). The odour pervades the room directly the window is opened, and is less powerful than when the plants are actually in the room. SYLVESTRIS.

### SEASONABLE WORK.

**Plant Houses.**—Up to the present time stoves and cool houses have been abundantly supplied with flowering plants, but a period is now approaching when choice bloom will not be so plentiful, and on this account steps should be taken for keeping fine specimens which flower as they grow in the best health and vigour by the liberal application of liquid. Such subjects as *Allamandas* and *Clerodendrons* should be top-dressed with rotten manure and kept perfectly clean, as plants grown under high pressure cannot be expected to remain long in beauty where their leaves are disfigured by filth or insects. Large pots of *Eucharis* which have flowered a second time should have a thorough rest by being placed in a dry house before they are again started for the autumn. In course of time the pots become crowded with small roots, but instead of breaking up the plants they may be turned out of the pots, and by a careful manipulation with the fingers on the surface of the ball a general thinning may take place, when they may be repotted with fresh drainage in the pots previously occupied.

Greenhouse or conservatory climbers growing in inside borders will now take large supplies of water of a stimulating nature. In many houses the roots are placed partly beneath the pipes, and when this is the case they should be well surfaced with rich lumpy rotten manure. To have *Tacsonias* and other depending climbers nice the young growths should be well thinned out, so as to keep them quite clear of each other; and, unless the roof is very lofty, each rod should be pruned hard in every winter and dressed exactly the same as a vine. *Azaleas* that were forced early will soon be fit for removal from the house in which they have made their growth to cooler quarters, where they can be sheltered from rain and cold draughts. In days gone by it was the custom to put them out of doors, the first step to another place; but with cheap glass and suitable aspects the *Azalea* is best protected from checks and chills by being kept under cover all the year round. The same treatment applies to *Camellias*, with the exception that they should be kept cooler during the time they are setting their buds. A north house in which they can have plenty of light answers best for *Camellias* either in pots or planted out. The roof may be fixed where economy is an object, but side and top ventilation must be abundantly provided for. Opinions vary as to the best time to pot *Camellias*. My own experience points to the period when the new flower-buds are fairly formed. The plants then have several months before them in which to take possession of the fresh soil. Buds rarely drop and the blooms open fine. W. COLEMAN.

Eastnor Castle.

**Raising Pitcher Plants.**—The finest hybrid *Nepenthes* I ever saw were at Such's Nurseries, South Amboy, N.J., and some of these are sent out by English nurserymen. But in no case



have I seen the credit given to the raiser, viz., Mr. James Taplin, of Maywood, N.J., who was for years manager of Mr. Such's place. — *Gardener's Monthly*.

## THE KITCHEN GARDEN.

**Keeping Onions.**—We always keep our Onions in an old shed close to the roof, and spread thinly on spare boards, never putting anything over or under them. Last winter, when the frost was most severe, I examined them, and found them as hard as stones; one could not cut them. I entertained doubts as to their keeping, but we did not remove them, and, I am pleased to say, scarcely any rotted, for in the first week in June they were as sound as ever they were.—J. C., *Farnborough*.

**Peas**—We have received from Mr. Gilbert, of Burghley, three kinds of Peas, viz., Telegraph, Telephone, and Carter's Pride of the Market, all excellent varieties, large both in Peas and pods. Between Telegraph and Telephone there is little difference, except that the latter is a paler green than the former; both are alike good, each pod containing from eight to ten Peas. In the case of Telephone the contents of 75 pods rather more than filled a pint measure. Pride of the Market is also an excellent Pea. All of them were admirable examples of good culture.—M.

**Autumn v. Spring-sown Peas.**—Opinions differ as to the advantage of sowing Peas in autumn and spring. Last November I determined I would sow some as a trial, which I did about November 20, consisting of Dickson's First and Best. I also made a sowing on the first week in February of the same sort and side by side on a south border. None were protected. We gathered the first dish from the autumn-sown ones on June the 4th and from the February sowing on the 18th, thus giving a fortnight in favour of the former. I used to sow in strips of turf and plant out, but on our light soil I prefer autumn sowing. While on early Peas, I would like to name a good kind to come in about four days after William the First, namely, Wellington Marrow. It is a good cropper, produces from six to eight Peas in a pod, is of good flavour, and grows 4 ft. high.—J. C., *Farnborough*.

**Tomatoes Well Grown.**—We lately saw a method of growing Tomatoes which we think is the best way of growing this now popular vegetable. The Tomatoes in question, which were growing in a span-roofed house 240 ft. long, were planted on narrow wooden stages erected near the glass on each side of the house. On these stages had been placed about 6 in. thick of pure loam, and the plants had been planted in it 9 in. apart. All side shoots are kept pinched off, and the main stems are trained up under the roof, so that in time the two rows of plants will meet at the top. From the axils of the leaves on the main stems are produced large trusses of fruit. The main stems of the plants in question were at the time of our visit 5 ft. long and as thick as a good walking-stick, and from top to bottom were bearing large trusses of fruit or bloom. This plan gives a good succession of ripe fruit, inasmuch as blooms are produced as the main stem advances, and, as the fruit is removed, adds additional strength to the plants. Mr. Hawkins, of Ealing, in whose nurseries we saw the house of Tomatoes referred to, asserts that this is the best plan he has ever tried, as he can get double the weight of crop from a given space than by any other method. When this house of Tomatoes is in full bearing, it will be worth seeing.—*Gardening*.

**Arranging Plants for Effect.**—Offering prizes at flower shows for groups of plants arranged for effect affords many advantages; among others, I may mention the fact that many are able to compete in this way who have not the convenience to grow large specimens. At the flower show in Bagshot Park the other day, I was very pleased to see six groups of plants arranged for effect. The space for each exhibitor was 10 ft. by 10 ft., and amongst the six groups not one could be said to be bad. They were arranged round the tent, leaving the middle open. The first prize group was arranged in a natural and very graceful way. It contained some tall tree Ferns, the trunks of which were covered with leafy vegetation; also a few good Dracenas and other tall fine-foliaged plants. Between these were some

nicely grown flowering plants, and the surface was covered with small Ferns and Mosses, the whole being edged with small growing plants such as the Fruiting Duckweed, Gloxinias, Achimenes, and Billbergias, the latter raised above the smaller undergrowth. This group came from Mr. R. Lloyd, of Brookwood.—J. C., *Farnborough*.

## THE FLOWER GARDEN.

### PETUNIAS FROM SEED.

THESE scarcely come within the definition of bedding plants. They are not as a rule popular in that sense because they do not strictly confine themselves to certain forms and spaces. They rather like to ramble and grow in a style that is pleasing and graceful enough, but altogether too irregular for the bedder out. Therefore Petunias are not nor have for a long time been favourable bedding plants, and the flower garden has rather lost than gained by the comparative exclusion, Mr. Wildsmith uses a few plants of a rich purplish flowered kind at Heckfield, and gets from them a rich bit of colour, but that is almost an exception. There was much that was interesting in the large collections of Petunias which Messrs. Carter have been exhibiting recently at the metropolitan shows. There were to be seen flowers in infinite variety, selfs and stripes, singles and doubles, large and medium sized, and all very striking and doubtless in masses exceedingly effective. Perhaps the prettiest of all was a rosy carmine self named Queen of Roses, and as the habit of the plant was somewhat compact, I can well imagine that a bed of this would indeed produce a charming effect. There is considerable satisfaction attending the fact that these Petunias come freely and true from seed. Some thousands of plants are grown in pots and each bloom is carefully fertilised. Without this trouble the plants would be unproductive.

The double and semi-double kinds present more difficulty because it is necessary to split these flowers with a knife carefully before the seed organs can be properly fertilised. Probably these large flowered sorts are in the best place when grown as pot plants. The habit generally is of an exceedingly robust character, and in the open ground is apt to degenerate too largely to wood. In pots, however, this coarseness is held in check, and by dint of a little pinching a good base is soon formed and a fine showy plant is the result. The great size of the flowers also militates against their general employment out doors, for these suffer much more from wind and heavy rains than single sorts. In fine dry weather, however, there is ample bloom and much effect, although perhaps not so much as is obtained from a good mass of the smaller flowered self and striped kinds, as these have more wiry growths, flower most profusely, and if injured by a heavy storm are soon as bright and gay again as ever. These smaller flowered kinds usually seed freely in the open ground, and need not artificial fertilising. The flowers are varied and striking, and naturally attract bees and other insects.

Seeds of any good kind will usually perpetuate it, and striped flowers will always reproduce their kind largely. The ease and freedom with which the Petunia grows render it peculiarly acceptable for massing in large beds where its bounds are not matters of mathematical precision. It also makes a good basket or vase plant, and mixes well with similar plants. A few scarlet and pink Pelargoniums, rising up above the Petunias, are very pretty; so also are Humeas, Hemps, or Cannas. Petunia seed germinates freely even without artificial heat, but choice kinds do best with warmth. Without heat seeds should be sown in February, but with heat a month later will suffice, as it is not desirable to have the plants too large before turning out of doors. A shilling packet of seed sown in a 12-in. pot will give, perhaps, 200 plants, enough to make any moderate-sized flower garden look gay. It is not at all needful that all these should be potted, if

pricked out into shallow boxes some 2 in. apart, and put in the light with ample air, they will make good robust plants to put out with a garden trowel at the usual bedding period, and will often thrive better than will those whose roots have been confined. A. D.

### NOTES FROM A CHESHIRE GARDEN.

RETURNING after three weeks' absence, I find that the "dripping June" which Cheshire has enjoyed has done its proverbial work, and though I arrived the morning after a heavy thunderstorm, flowers never looked better. Some plants are overgrown owing to the heat which has accompanied the wet, but in most cases the size of the flower is in proportion to the size of the plant. My eyes first caught by masses of the bright pink *Silene armeria*. Why is not this plant grown more? Some biennials are troublesome to rear, but this claims to have established itself as a native plant. Sown last July and transplanted singly to vacant spots in May, the plants, where they have had room enough are now 3 ft. across and 2 ft. high, covered to the ground with sprigs of pretty and durable flowers, produced in the most convenient form possible for mixing in nosegays. *Spiræas* are now in full force. There are the double and the variegated wild Meadow Sweet, almost too large for gardens; dark pink *S. palmata* and its variety *elegans*, with white flowers and pink anthers, said to be a hybrid between the two; there are the Dropworts, double and single, with their pink buds and crisp leaves, and the large *Spiræa Aruncus*, claiming to have a dwarf variety, but this depends on soil and situation more than on nature, for all are gigantic here; there is the tall and fast-spreading *S. venusta*, hardly out yet, with its light rose-coloured plumes of flowers; lastly, there is *S. trifoliata*, now called *Gillenia*, distinct and rare, but not so handsome as the others. *Mimulus cupreus* is a brilliant little ornament in moist spots, and several varieties of *M. cardinalis* last in flower for a long time, the gayest being one called *Crimson King*, introduced last year by Ware. Drought is a greater enemy to these than cold, and on light dry soils they often die after flowering.

Of *Phloxes*, those called by florists "suffruticose" are now out. This class of *Phlox* has the merit of producing its crowns well separated, being to some extent stoloniferous, and the plants are easily divided. The finest white *Phlox* I ever saw was one called *Lady Napier*, but all the class are fine this year. The Spotted Cat's-ear (*Hypochaeris maculata*), which is our finest native composite, though I never saw it wild but on the Orme's Head, produces in cultivation four or five flowers on a stalk, and four or five stalks on the same crown. The flowers are of the colour of pale Australian gold, and the leaves are handsomely spotted with black. *Lychnis chalcidonica*, both double and single, found something ungenial in the spring, and neither are doing well. *Lychnis Haageana*, however, is remarkably fine. Of those sown in the spring of last year, most flowered in the autumn. A sowing planted out indiscriminately will produce some satisfactory results, though many may fail. The foot of the stalk is so little as to be liable at all ages to be snapped by wind if exposed to it, and should be tied. The colour of the flower varies from very dark scarlet to white. It is too soon to say much about Lilies. I can speak well of *Lilium colchicum*, which is past, and *L. pardalinum*, and some others, which are present, but some which are still to flower behaved so badly about this time last year that I will wait before I give them a character. Bellflowers and Speedwells are



flowering without number, and many of them without name, or to a name which they have no right. One of the most useful and free flowering of the Campanulas is sold as *C. alpina*, *C. azurea*, and *C. rotundifolia major*, the last name being, I believe, right, for it seems to pass by imperceptible gradations and various names into the native Harebell, though it is much larger and more robust.

Of border Campanulas, none are handsomer

including pure white; many of them relapse in the direction of *C. carpatica*, which I suppose is the parent. Last spring I gave half-a-crown for a Campanula called Raineri, which I cannot distinguish from a good *turbinata*. Of rockery Campanulas, besides the blue and the white *C. pumila*—good except for their running propensity—there are a large number, of which *C. garganica* may be taken as the type. Most of them have white as well as “hirsute” varieties, the white

The prettiest Stonecrop now out is *Sedum pulchellum*, very free flowering and dividing its flower-heads into five branches like a spread hand. But I have taken enough space and will only add that I never recollect July opening with a better prospect of being a flowery month.

C. WOLLEY DOD.

Edge Hall, Malpas.

### THE WILD GARDEN.

THE illustrated edition of this book is now ready, after being long out of print, owing to the time necessary to obtain drawings and execute engravings, of which there are over ninety. It was felt that the use of illustrations would help to make both the aims and suggestions of the book clearer. It was equally desirable to show by illustration some of the more valuable types of the vast stores of material which may be used in the Wild Garden. Of this term there has been some misunderstanding, and it is thus referred to in the preface.

It is applied essentially to the placing of perfectly hardy exotic plants in places and under conditions where they will become established and take care of themselves. It has nothing to do with the old idea of the “wilderness,” though it may be carried out in connection with that. It does not necessarily mean the picturesque garden, for a garden may be highly picturesque, and yet in every part the result of ceaseless care. What it does mean is best explained by the winter Aconite flowering under a grove of naked trees in February; by the Snowflake growing abundantly in meadows by the Thames side; by the perennial Lupine dyeing an islet with its purple in a Scotch river; and by the Apennine Anemone staining an English wood blue before the blooming of our Blue-bells. Multiply these instances a thousandfold, illustrated by many different types of plants and hardy climbers from countries as cold and colder than our own, and one may get a just idea of the wild garden. Some have erroneously represented it as allowing a garden to run wild, or sowing annuals promiscuously; whereas it studiously avoids meddling with the garden proper at all, except at attempting the improvements of bare shrubbery borders in the London parks and elsewhere; but these are waste spaces, not gardens.

I wish it to be kept distinct in the mind from the various important phrases of hardy plant growth in groups, beds, and borders, in which good culture and good taste may produce many happy effects; distinct from the rock garden or the borders reserved for choice hardy flowers of all kinds; from the best phrase of the sub-tropical garden—that of growing hardy plants of fine form; from the ordinary type of spring garden; and from the gardens, so to say, of our beautiful native flowers in our woods and wilds. How far the wild garden may be carried out as an aid to, or in connection with, any of the above in the smaller class of gardens, can be best decided on the spot in each case. In the larger gardens, where, on the outer fringe of the lawn, in grove, park, copse, or by woodland walks or drives, there is often ample room, fair gardens and wholly new and beautiful aspects of vegetation may be created by its means.

**The Pinks** at Pilrig Park Nurseries, Edinburgh, to-day were so beautiful (scenting the air everywhere near them) that I asked for some flowers. Ascott, Hercules, Derby Day, and robustus, which I send you, are tied together; the others are seedlings raised by Mr. Grieve, one of the largest being a hybrid between Anne Boleyn and multiflorus. Plants of it, as well as of all the other seedlings, are covered with buds, and remain in flower till late in the season. Most of the plants are from 5 in. to 1 ft. high, so that they require no tying. Another point in their favour is that almost all are propagated by division, not by cuttings,



The Wild Garden: Colonies of Narcissus, Broad-leaved Saxifrage, &c., in rough shrubbery.

than *C. Van Houttei*, with its large flowers of soft blue, and if any one could raise a white *Van Houttei*, he would earn the gratitude of gardeners. Those who wish to make a great show in July with little trouble and cost will find the Canterbury Bell, with its monstrous varieties and many colours, useful for their purpose; but it is short lived, and not a pleasing flower. *C. turbinata*, which produces its flowers as fast as there is room for them to open, is a better plant. The seedlings show a variety of colour,

being generally difficult to keep. The Spider-worts, of many shades between dark blue and white, are now very pretty in the sunshine; and the *Potentillas*, both single and double, are very showy, but not neat in their habit. A curious and interesting plant, which formerly grew on the coast of North Wales, but is now nearly extinct there, is *Mertensia maritima*, the Oyster Plant. It grows well here in light soil covered with fine shingle, and has for two months borne abundance of small flowers of porcelain blue.



which ought to make the cultivation of Pinks easier and more widespread.—C. M. O.

#### SWEET BRIER IN THE WILD GARDEN.

NOTHING can surpass the beauty of this just now, covered, as it is, with its soft rosy-pink flowers. A few years ago a good many Sweet Briers were planted in hedges here and in the ornamental woods, and they are all now blooming most profusely, particularly those in the woods; they have not been pruned or restrained in any way, but allowed to grow anyhow, being planted in rough open places with abundance of room for full development. They are now wild, rambling bushes, and, as I have said, literally covered with blossom, a fact that seems to me to point out that if this fragrant plant is to be seen in its full beauty unlimited freedom should be given to its naturally wide-spreading, scrambling habit. No matter how rough the situation may be, it can accommodate itself to any circumstances. Having planted it freely and reaped much enjoyment therefrom, I advise others who have the opportunity to do likewise. I may add that I never imagined the Sweet Brier (that common old-fashioned plant) capable of making so lovely a picture. These wild bushes when seen at a little distance just now are almost startling at first sight, their showers of flowers quite eclipsing everything near them. No other shrubs in flower are necessary to blend, mix, contrast, or enhance the beauty of the Sweet Brier; its delicious fragrance and modest lovely flowers render it charming wherever it may be placed, whether in wood, copse, or hedge. In wild garden or flower garden it is equally a favourite; it never seems to look like an usurper either in a lowly or exalted position.

G. BERRY.

*Longleaf.*

#### THE CHICKWEED AND OTHER PHLOXES.

PROBABLY no other American genus of plants affords to the flower garden such a number of unlike forms as the Phlox. The annual Phlox Drummondii has produced distinct varieties enough to alone furnish a garden with almost every shade in colour, while the perennial species are very numerous, and present such a variety in habit, that they may be for garden purposes regarded in three distinct groups. One set are properly alpine in habit; of these the beautiful *P. subulata*, or Moss Pink, is the best known, but there are many others in the Rocky Mountains and westward, some of them more truly alpine, and quite unknown to cultivation. Next to these are several that may be grouped as running or creeping Phloxes. These are perennial, but their principal stems are prostrate, though their flowering stems are erect. Lastly, there are the well-known tall garden Phloxes, which are generally called the perennial Phloxes, though all but *P. Drummondii* are also perennial. Perennial Phloxes have been so hybridised that the original species are quite lost sight of, and a vast number of garden forms of the greatest beauty and variety are the result. It is remarkable for one genus to have produced what may be regarded as the most widely popular annual, and well-nigh the most useful perennials of our gardens, but its possibilities have not yet been exhausted. In the alpine section, while there are yet a number unknown to our gardens, and may be regarded as raw material in reserve, florists have been at work upon the one so long cultivated. The Moss Pink, *Phlox subulata*, varies so in the wild state that its forms have been described and named as species; this has of late been taken in hand by European florists, and already varieties of encouraging beauty have been obtained. The group we have designated as running appears to have received but little attention at the hands of the florists. This may be because of the irregular rambling habit of the plants, though in some the flowers in their natural state are of tints not found in the other section, and in two species the lobes of the corolla are deeply divided or cleft. If these will hybridise with the section of peren-

nial Phloxes, it will allow new forms, and perhaps new colours, to be introduced among them.

One of the rarest of the species of this section—indeed one of the rarest of our Phloxes, unless it may be some of the high mountain—*P. Stellaria*, it having been found only in a locality in Kentucky and sparingly in Southern Illinois. The slender, smooth stems run from 6 in. to 8 in. high, the leaves narrow and the flowers white, with a bluish tinge; each lobe is cleft, like the petals of the Chickweed (*Stellaria*), a resemblance that no doubt suggested the specific name. There is but one other species of Phlox with the lobes thus split, *P. bifida*, which is less rare than the present one, and is found in Illinois and Missouri. It differs from its relative, among other points, in being downy and in having pale purple flowers.—*American Agriculturist*.

#### CARNATIONS AND PICOTEEES.

**The Properties** of a "perfect" Carnation or Picotee, according to the written rules of exhibitions drawn up from time to time by the best authorities, are as follows: The flower should have a diameter of about 3 in. or more. This is not so important as other points, though if two flowers were otherwise equal, the prize would go to the largest. The first circle of petals (commonly called the guard petals) should be broad and smooth, absolutely plain round the edge, and without notch or indentation of any sort; in number six or seven, lapping one over another, so as to form a perfect circle without serrature. All the successive circles, or tiers of petals, should consist of six or seven petals, gradually getting smaller in each successive layer, until it rises to the centre, as a perfect hemisphere. The small petals, forming the centre of the bloom, must not be crowded or confused; the horns or styles (the pistil) must lie gracefully down on either side of the flower. Each individual petal should be quite smooth at the edge, and in the case of bizzars each petal should have both colours marked on each petal, even though one of the colours should be extremely faint (a tiny flush is enough to qualify the bloom), the white groundwork of which should be pure, lustrous, and sparkling. The substance of each petal should be full and rich, and should be slightly concave or cupped. If the flower is a self it must be quite pure in colour, without any specks or darker shades of colour on the petals. If the flower is a flake the stripes must be quite clearly cut out on the pure white ground, not tinging the white or running into one another. The colours must be decided and brilliant, no neutral tints being allowed unless possessing a decided individuality. In the case of bizzars the colours ought to contrast powerfully and favourably—the darker, rich and velvety and as dark as possible, the lighter, pure and brilliant. The calyx sheath or pod should be quite whole, a reasonable length, about 1 in. or a little more, unsplit and carrying the petals well. Picotees, as has been mentioned before, are divided into heavy edges, light edges, and yellow grounds. The marginal band should be clearly and evenly traced on the edge as if it had been done by hand; the colour uniform in tint, and not running down into the ground, and not notched by the white ground running into it. The ground must under no circumstances be specked with colour.

**Faults.**—The following faults disqualify a Carnation or Picotee in an exhibition: If there be any petal dead or mutilated. If any petal is totally devoid of colour. If any petal is entirely suffused with colour and shows no ground. Picotees must on no account be feathered or barred in any way. The calyx must not be split too far down. Under no circumstances

must there be a notched petal. These rules are, of course, not to be taken as necessary conditions to the perfection of the flower; in fact, try to conceive anything more hideous than a bloom containing all the above "virulence of perfection," hard and regular in its outline, it would be positively painful to look at; but the flower which contains some or all of the above conditions in a certain degree, cannot possibly be surpassed in beauty by the most beautiful gem of our gardens. The beauty which is so much wondered at by visitors at the Carnation and Picotee exhibition is of course the result of careful "dressing," an operation which, delicate and scientific in its performance, completely transfigures the bloom, as much in fact as careful dressing transforms, or rather, I should say, enhances the beauty of the visitors themselves. Much has been said by high authorities both for and against this art; but those who have seen the Carnation or Picotee bloom dressed and undressed will ever readily prefer the latter to the former. GIROFLE.

#### CAMPANULAS.

THE notes you inserted in your last were not intended as an exhaustive account of the Campanulas, but were merely written down at the moment, describing those which were in bloom here. Your correspondent, C. H. W. Martin, will find, on referring to a previous communication of mine (June 4, p. 569), that I then described several other most interesting Campanulas, viz., *C. thyrsoidea*, *C. glomerata alba*, and *C. Wanneri*, all of which I exhibited at the Manchester Flower Show at that date. We have several others now in bloom which deserve a passing mention, as the subject appears to have interested many of your readers. Of *C. persicifolia alba*, another form is now in bloom, having much longer flowers and more of the *C. rotundifolia* shape than the ordinary type. This variety was given me by the Rev. C. Wolley Dod, and it is equal to any of the varieties in beauty. *C. grandis alba* I had also from the same friend; it is very elegant, and will be a useful sort for bouquets. *C. Van Houttei* should be in every garden; it has large and handsome flowers of a very rich deep violet-purple, carried stiffly on stalks of from 1 ft. to 2 ft. high. *C. alliariaefolia*, *lactiflora*, *azurea*, *celtidifolia*, and *linifolia* are all good sorts; the latter has Grass-like foliage, and long narrow bells of the *rotundifolia* class, and is exceedingly graceful. *C. gargarica* was one of our exhibits at the show in Whit week, and the same plant is now one mass of colour in a cool greenhouse, having bloomed ever since. This is one of the loveliest of Campanulas, and should be grown for greenhouse purposes. One of your correspondents refers to *C. latifolia*, and another to *C. pyramidalis*, but neither of these is yet in flower with us, nor is *C. Hendersoni*, one of the very best. Mr. Burbidge and another of your correspondents refer to *C. Raineri*, and some friend has sent me a Campanula by post, which is, I believe, *C. turbinata*, but as neither letter nor address accompanied the flower I cannot send a reply; however, I believe I am wrong about *C. Raineri*, as Mr. Whittaker, of Morley, was through my garden on Wednesday last, and he tells me I have not got the true *Raineri*. I have plants under that name from two of our best florists, but Mr. Whittaker says they are both *turbinata*. If any of your readers will kindly send me the true sort I shall esteem it a favour. The Canterbury Bells, which are but biennial Campanulas, are now coming into flower, and these are quite as beautiful as the perennial sorts. We have them in a great many varieties and colours, one of the



loveliest being of a delicate pink, with a frill round its neck like a Queen Elizabeth's ruff. Others are double. Mr. Dean, of Ealing, has a capital strain of Canterbury Bells, from which many of ours are descended. All good gardeners should grow these largely, as they come in most usefully for filling up gaps in the borders, bloom when flowers are getting scarce, and harmonise well with the Roses which now abound.—WM. BROCKBANK, *Brockhurst, Didsbury.*

### THE ARMERIAS, OR THRIFTS.

MANY novelties in the hardy plant way are yearly introduced to our gardens. Many of them, though beautiful, through difficulty in the way of culture, or some inconceivable reason, are popular only for a time, and are soon forgotten. The Thrifts, however, have become such established favourites that it seems improbable they can ever be lost, especially the common Thrift, or Sea Pink (*Armeria vulgaris*, or *A. maritima* of some), the cottager's favourite. They thrive luxuriantly when grown in a well-drained, but retentive soil—by retentive, I do not mean clayey loam, but peat and stones. They may always be seen to the best advantage in gardens where the natural soil is moist and gravelly.

In nurserymen's catalogues the names of many



*Armeria Lauchiana.*

kinds always occupy specific rank, but I think that for a gardener's purpose they might well be classed in two groups—under *A. cephalotes* and *A. maritima*. We grow the miniature *A. juncea*, *A. maritima*, and *A. cephalotes* near each other. A number of self-sown seedlings are flowering in the neighbourhood of all three parents, and it is exceedingly interesting to note the wonderful variety in habit and colour of flower that exists among them. It may safely be said that the various recognised types are so nearly allied, that, at least, in strict botanical technicality, they might be considered all varieties of one type. We have all intermediate forms between the miniature *A. juncea* and *A. cephalotes*. All the kinds have flowers arranged in heads, supported on scape-like stems, proceeding from a tuft of Grass-like leaves. They are exceedingly floriferous, flowering from May throughout the summer. The blossoms vary in colour from deep rose to white. They are increased either by division or seed. *A. cephalotes* is a strong growing kind, which throws up its flower-heads to the height of about 1 ft. They vary in colour from deep rose to lilac. With this as type I include the forms sold as *A. grandiflora*, *A. purpurea*, and *A. plantaginea*. It is scarcely capable of division, but increases freely from seed. If opportunities for hybridising are given, various forms will result. *A. maritima* is a much more compact grower than the former.

The flower-heads are supported about 6 in. above a tuft of flexuous Grass-like leaves. They are rose coloured. It is capable of division. Under this as type may be included the forms known as *A. alpina* (*A. vulgaris* being synonymous), *A. maritima rosea*, *A. m. alba*, Mr. Parker's variety (*A. m. coccinea*), and a rather distinct variety named *A. juncea*, with much smaller flower-stems, and heads with fewer, but larger flowers—a most beautiful kind.

T. D. HATFIELD.

### AUTUMN SEEDS.

At this season the herbaceous plants will be bearing ripe seeds, and if these can be utilised they will furnish abundant stock for another year. Of course the best plan is to gather the seed carefully on a dry, sunny day, and preserve it for next spring, and for this purpose I keep a stock of small white paper bags, of which I carry a few in my garden coat pockets; so that whenever seed appears to be ripe and fit, it can be gathered, and the name and particulars written upon the bag. But this plan involves a lot of trouble, and the seedlings are often lost or forgotten when they come up in due course next spring.

I have therefore adopted the simple plan of always letting the seeds fall near the plants, there to come up and in time become seedlings around the parent; and for a good many sorts this plan answers admirably. Primroses, Polyanthus, and *Primula japonica* are best managed thus, and you can tell pretty nearly the character of the seedlings from their relationship to the parent plants near to which they are clustered, and you take further trouble with them by carefully pricking them out if they are of any value. The big perennial Lupines, Delphiniums, Verbascums, *Lychnis*, *Saxifraga peltata*, *Aquilegia*, and such large plants I sow broadcast in suitable situations, amongst bushes, in any open spaces, and in any situations where they can have room for growth, and it is surprising what large numbers of plants are matured in this way from the seed otherwise wasted, for you would never have troubled to gather the whole, or to sow a tithe of it next spring. Our *Myosotis*, used for spring bedding, when taken up is trenched in a long line, and allowed to drop its seed, and thus we get thousands of plants for next year, which are carefully pricked out in due season. On the rockeries we take care that loose soil is prepared round the *Saxifrages*, *Dianthus*, and other small plants, so that the seed may fall and find a resting place. Fritillary seed we gather when ripe, and drop here and there in suitable corners and crevices, where it comes up in due time. Androsaces we take out of pots and plant in flat boxes filled with suitable soil, and leave the seed thus to sow itself, where it can be placed under cover from winter rains. In this way our *Androsace sarmentosa* has given us a very large number of seedlings for next year's use. There is not very much for an amateur to do in his garden at this season, and he may thus utilise his leisure to good purpose. It is also well to reserve a stock of seeds for your friends and for exchanges. My friend, Mr. Leo H. Grindon, remembered my hobby during his travels last year, and brought me home the seeds of some thirty rare herbaceous plants, all carefully named and their habits noted on the parcels. Of these at least two-thirds have grown, and we have thus obtained a number of very rare plants not to be found in any catalogue. This is a welcome and valuable sort of present, and worth making a note of.

WM. BROCKBANK,

*Brockhurst, Didsbury.*

### DAFFODILS.

IN THE GARDEN for July 2 (p. 5), Mr. Brockbank states:—

Mr. Burbidge now says distinctly (p. 633) that there is but one form of the wild Daffodil, viz., that more or less, but always, bicolor, and that the "self yellow" form is a nonentity altogether; and this although I have stated that, to others besides myself, it has been shown that there are two forms.

What I really did say on p. 633 was as follows:—

Now as to the wild forms, there are at least twenty wild forms of the common Daffodil to be found in Britain and elsewhere in Europe. The "self yellow" is a nonentity altogether; at least after some ten or more years' study of Daffodils, no form is known to me which has not more yellow colouring on the corona or crown than on the perianth segments.

I can well believe that Mr. Brockbank really had no wish or intention to misrepresent what I wrote, but the fact remains that (as I have before proved on p. 633) he did so misrepresent me, just as he again does on p. 5 of THE GARDEN for July 2. Now, Mr. Brockbank goes on to say that Plate 3 of the *Narcissus* is coloured wrongly, "as it clearly represents the wild form of Daffodil with both tube and perianth of the same colour, except the inside creasing of the tube." The plate really does not represent perianth and crown or corona of the same tint, and the tube of which Mr. Brockbank speaks as if it were the corona is tinted green! My book was published in 1875, and our knowledge of Daffodils has largely increased since that time, and it is a fact that I now hold many views about Daffodils that I did not hold then. Lest Mr. Brockbank should again misunderstand me, I repeat the fact that all Daffodils are more or less two-coloured, but this statement does neither mean nor imply that all Daffodils are either the bicolor of our gardens of to-day, or the bicolor of the *Botanical Magazine*, t. 1187. When Mr. Brockbank refers N. Emperor (see p. 5) to the "self-yellow" series, he cannot be really serious, since the perianth and crown are of two distinct shades of yellow, not self or concolorous in any way. The two Daffodils which most nearly approach to being truly self-coloured are *N. obvallaris* and *N. maximus*, but even in these the crown is of a distinctly deeper shade than are the perianth divisions. I trust that the Daffodils may form a medium for discussion, not only for next spring, but for many springs to come, and, supposing such an inducement to industry to be acceptable, I will gladly send a copper kettle to whoever first sends to me a Daffodil in which the perianth segments and the crown are of exactly the same tint of yellow.

F. W. B.

### NOTES FROM SWITZERLAND.

(ALPINE PLANTS AT THE NEWMUNSTER NURSERIES.)

ALTHOUGH a snowless winter proves often very dangerous to alpine plants, our collections have, on the whole, not suffered much, and the rockeries look this year as bright as ever. But a few days ago the Pyrenean Stone-break (*Saxifraga longifolia*) was the sight of the place; as many as fifty plants were flowering at the time, and the grand old specimens figured in our catalogue of hardy plants were transformed into a snow-white pyramid, 2 ft. high, composed of innumerable flowers. *Ramondias* have been very fine this year; the variety having pure white flowers forms a pleasing contrast with the dark violet corollas of the typical plant. Our specimens grow so well on the perpendicular shady rocks they are occupying, that they have quite the appearance of being naturalised there. Next to *Ramondia pyrenaica* grows the allied *Habro-lea rhodopensis* with its delicately coloured small flower-bells overshadowed by a large flowering specimen of our alpine Rose (*Rhododendron*



hirsutum). *Rosa berberidifolia* is in bud, and we shall shortly have the pleasure of seeing for the first time the flowers of this remarkable plant. *Acantholimon venustum* forms among the stones a charming carpet of spiny glaucous leaves, and is just now opening its numerous rose-coloured flowers borne on slender arching spikes. In a shady nook *Wulfenia Amhersti* is flowering, and on the top of the rockery, placed in the full sun, a fine specimen of *Lithospermum petraeum* is in bloom. The collection of House Leeks takes up the driest part of the rockery, and here, among *Sedums*, *Umbilicus*, and various kinds of *Sempervivum*, grows the beautiful *Opuntia camanchica*, bearing many large pale sulphur-coloured flowers.

A tall plant of *Lilium dalmaticum* is opening its buds, and for the second time this year *Arnebia echioides* develops its showy spotted flowers. *Linaria pallida* covers a large piece of sloping ground, and exceedingly pretty look the dark blue spurred flowers among the small shining leaves. The Italian *Lilium pedemontanum* shows a good number of flower-stems carrying clusters of nodding lilac-coloured flowers. Everywhere appear the brilliant corollas of alpine Poppies, from pure white to dark red; all intermediate shades are represented, producing lively effects among the grey rocks. *Dryas octopetala* and the American *Dryas Drummondii* are growing side by side, and cover a whole corner of the rockery. Their dense creeping branches are surmounted by fruit-bearing flower-stems, which, crowned by long-tailed silky skins, look very pretty indeed. *Atragene alpina*, having flowered profusely this spring, is ripening seed. *Onona fruticosa* is flowering next to a large specimen of *Laserpitium Siles*, a fine umbelliferous plant which forms a very conspicuous feature on the top of the rockery. *Aethionema coridifolium* and *grandiflorum* have been unusually fine this year. A beautiful tuft of *Thalictrum adiantifolium* growing out from the rocks resembles—with its delicately-shaped leaves—very much some kind of *Adiantum*. The rare *Erodium chrysanthum* has bloomed well; it still shows a good many of its small fragrant yellow flowers, and in another place a specimen of the white-flowered variety is covered with blossoms. The Olympian Heron's-bill has large purple flowers, and the rare and beautiful *Erodium cheilanthis* bears the last lilac-coloured blooms among its silvery leaves. Different forms of *Edraianthus* (a sub-genus of *Campanula*) are flowering now, and while the charming *Campanula Wanneri* is past flowering, other alpine forms show their tiny blue or white bells.

The *Edelweiss*, often alluded to, has been very fine; hundreds of them growing in an open border were literally covered with flowers, and are now ripening seed. *Astragalus adsurgens*, which has flowered well, presents a most peculiar aspect now with its chocolate-coloured pods of the size of a small Plum, lying on the ground among the creeping branches. *Erythraea linarifolia* is quite a gem; scarcely 2 in. high, this beautiful little plant produces in abundance its lively rose-coloured blossoms. An exceedingly rare Soapwort (*Saponaria pulvinaris*) has flowered here for the first time; it forms a dense light green carpet, studded with tiny red flowers. Planted on the edge of a *Rhododendron* bed, *Aquilegia alpina* has flowered remarkably well. In form and colour the flowers seem equal, if not superior, to any other kind of *Columbine*. On the same spot are growing two alpine Ferns—*Notholaena Marante*, from the Southern Tyrol, and *Woodsia ilvensis*, of our own mountains, plants not often met with, though among the best of the class to which they belong. Hardy Lady's

Slippers have been as bright as usual; several hundreds of our indigenous *Cypripedium Calceolus* are growing, together with the American *C. pubescens*, in a shady border and flower abundantly every year. Of *C. spectabile*, which is grown in shady peat beds, a good many have been displaying their lovely white and rose-coloured flowers. The beautiful purple *C. macranthum* has been in bloom, and also for the first time a plant of the rare Siberian *C. guttatum*. The curious shape and the large brown spots of the rather small flower distinguish this fine species from all others.

Zurich.

G. L. M.

### NOTES AND QUESTIONS.

**Hardy Cacti.**—All the *Echinocereus*, *Opuntia missouriensis* and its varieties, *O. Rafinesquiana*, *O. vulgaris*, and *O. glomerata*, and most of the *Echinopsis* are all hardy, but the soil must be well drained and sandy. It ought to be prepared for the reception of the plants, and the position exposed, say an old or new wall, on which they could grow like Wallflowers or *Antirrhinums*, or brackets may be made for them with pieces of stone and cement. — J. CROUCHER.

**Hybrid Columbines.**—Referring to Mr. Dod's plea for these, we have no desire whatever to take a botanical view of the subject, but long experience has shown us that none of the hybrids ever surpass in beauty the species as we know them. We shall be glad to alter our opinion on seeing anything better than the true *A. cœrulea* or its fine white form, or the golden *Columbine*, or the alpine, or *A. glandulosa*. No doubt many seedling Columbines are worth growing, but not worth sending out as improvements, while they are even more difficult to keep pure than the species.

**Select Pansies.**—The following is a list of some of the best Pansies which I saw at Pilrig Park, Edinburgh, viz.: *Fancies*—Mrs. George Ross, Telephone, Zulu Queen, J. C. Grieve, Miss Duncan, Mrs. G. Muirhead, John Joss, William Welsh, Mrs. Miller, Mrs. Thompson, Mary McComb, True Blue, George Wymess, Beauty, Robert Williamson, Mrs. Hugh Hunter, William Dalgetty, Mrs. Wilson, John Officer, Dr. Thompson Forbes, William Stuart, Pioneer, *Viola formosa*, lavender, and Countess of Kintore, shaded purple and mauve. Most of these are new ones, of which some of your readers may like to know their names. Some of the seedlings not yet named equal many of these in beauty. The profusion of Pansies and *Violas* in blossom now makes it difficult to realise that many thousands of plants were killed last winter, which with frost 2° below zero cannot be wondered at. I send a sweet-scented *Viola*, *Alba odorata*, and a very distinct *Pansy*, *Pioneer*. — C. M. OWEN.

**Flowers at Langport.**—*Pyrethrums*, in their second blooming stage, are very fine just now. Of *Delphiniums* there are now twenty varieties in bloom, of which *Bella Donna* (sky blue, free bloomer, making lateral flower-stalks the whole summer, fine for bouquet making), *Ranunculoides* (double violet), *Mdme. Chate* (fine spike of sky blue with a white eye), and *Conspicuum* (violet, with a white eye) are very fine; masses of these have a very striking effect. Bedding *Violas* are still finely in flower. Amongst the best are *Picturata* (silver grey), *Blue King*, *Forerunner* (violet), *Gold Prince*, *Lavender Queen*, *Peach Blossom*, *Waverley* (violet). *Genista tinctoria* is a fine shrub. It bears golden yellow spikes of flowers about 5 in. in length; plants covering a space 3 ft. diameter are one mass of bloom. *Stenactis speciosa*, single, lavender with yellow stamens, grows about 1 ft. high. Of this I saw plants furnished with fifty umbels of bloom, and flowers 3 in. in diameter, three or four flowers being on each umbel. *Antennaria arenaria* has yellow flowers with golden centres, about ½ in. in diameter, produced in umbels of about fifteen to thirty. Messrs. Kelway have plants of it 4 ft. in diameter and 5 in. high; flowers everlasting. The

*Petunias*, finely striped and good in shape, are worth seeing. They are dwarf in habit, care being taken to save the seed of the best only. Of *Hyacinthus candicans* there are many thousands in flower. They are very strong and promise to make fine bulbs. This plant, though perfectly hardy, is valuable for forcing, the flowers being pure white when grown indoors. Each spike produces from ten to twenty blooms. The flowers of *Campanula persicifolia alba fl.-pl.* are excellent for bouquet making. I saw large plants of it in full bloom, each with from twenty to thirty spikes and with from five to ten flowers on a spike. The plant grows 2½ ft. high, and is in bloom during June and July. *Aster Amellus bessarabicus*, sky blue with yellow disc, is similar in habit to *Stenactis speciosa*. *Oenothera Youngi* grows 2 ft. high, and blooms during June, July, and August.—K.

### TREES AND SHRUBS.

#### THE CUT-LEAVED AND OTHER BIRCHES.

ONE of the most graceful trees we have ever seen on a lawn is a tree of this in Messrs. Ellwanger & Barry's nurseries at Rochester, in the State of New York, though far from the



*Betula pumila.*

city of that name. It was a tall and stately tree, though with all the grace of its kind. We do not remember to have seen so good a tree of this Birch in this country, from which we believe Messrs. Ellwanger obtained their specimen when young.

**The American Birches** are trees of some interest to planters, and the following account of them from the *Rural New Yorker* will be read with interest.

*Betula lenta*, the *Piant Birch*, otherwise called the *Sweet*, *Black*, or *Cherry Birch*, does not look unlike a *Cherry* tree on a casual glance. It grows large and prefers moist ground like many of its relatives, but also, like most of its relatives, adapts itself readily to most soils, even the most sterile. The leaves push forth early and are downy, and the bronze red twigs are aromatic. Indeed, many *Birches* after a



shower or dew give forth a faint, delicate, but delightful odour. Neither should I forget to mention the beautiful yellow "pussies" or catkins that appear on this, as well as many other Birches early in spring. *Betula lutea*, the yellow or gray Birch, has a trunk yellowish gray, almost silvery in hue, with leaves more downy and less heart-shaped than the last. Of the white-trunked Birches of America, there are

canoe building. *B. alba populifolia* peels readily also, but not in such large masses as *B. papyracea*.

**Indian Birches.**—*B. Bhajapaltra*, called the Indian Paper Birch, is a beautiful Indian species, not unlike our *papyracea*. *B. acuminata* of Nepal is another Asian species, with very taper-pointed, smooth leaves, and a beautiful, pendulous, oval shape. These Asian species

some of these Birches, and any lawn is graced by their light and airy presence.

**Variiegated Sugar Maple.**—Among the new and valuable productions at E. Y. Teas is a beautifully variegated leaf form of the native Sugar Maple (*Acer saccharinum*), which bids fair to become a valuable acquisition to our list of native ornamental trees. The original tree has grown to a large size, and still holds its variegation during the whole summer with as much permanency as any of our other variegated forms of trees or shrubs. It is now being propagated, and in due time will be offered to the public.—*Botanical Index.*

#### IVY NOT HURTFUL TO TREES.

THE following observations on the effects of Ivy on trees, written by Repton many years ago, and published in "The Transactions of the Linnean Society," appear to be so valuable and hitherto seen by so few, that we have thought it well to reproduce them: "Although I am afraid," says Repton, "that any attempt to remove the long-established prejudices concerning Ivy will be deemed chimerical by those who have taken up a contrary opinion from theory to that which I deduce from facts and observation, yet I will venture to assert that Ivy is not only less injurious to trees than it is generally deemed, but that it is often beneficial, and its growth deserves to be encouraged rather than checked, as is too often practised in woodland countries. I have been led to adopt this opinion during the last two or three years, from having observed the timber in some very old parks and woods (as at Stoneleigh Abbey, Warwickshire, Langley, in Nottinghamshire, and some others), where the Ivy had not been cut off, and where the timber was in greater perfection than at other places in the same neighbourhoods where the Ivy had been most cautiously destroyed; and during the winter of 1808 and 1809, the contrast betwixt the scenery of different places with and without Ivy was so striking, that I was insensibly led to collect facts in support of the opinion so diametrically opposite to the theory of those who consider Ivy as a destroyer. In 'Miller's Dictionary,' by Martyn, Ivy is said to waste and devour trees; and in Evelyn's 'Silva,' book ii., chap. vii., it is classed among things injurious to trees without any reason assigned, and is thus mentioned: 'Ivy is destroyed by digging up its roots and loosening its hold; but even the removal of Ivy itself, if very old, and when it has long invested its support, is attended with pernicious consequences, the tree frequently dying from the sudden exposure to unaccustomed cold.' And I have found in the north of England that Ivy is considered as a 'clothing to keep the tree warm.' Yet the poets of all ages have accused the Ivy of feeding on the tree by which it is supported; although it is now very generally known that it draws its nourishment from the soil by roots, and not from those fibres which have been mistaken for roots, but which are in fact claspers by which it fastens its tendrils to the bark of trees, when the bark is of sufficient thickness; but it is a remarkable fact, that Ivy will not lay hold of the shoots of any tree till the bark is three or four years old; and that it is more apt to attach itself to trees whose bark is decayed than to young and healthy shoots where the bark is thin and smooth. It very rarely happens that Ivy climbs to the extremity of a young shoot, and if it were capable of doing so, and of subduing the growth of young branches, it would more easily destroy the shoots of pollards cut down close into very large masses of Ivy, as we often see by the sides of high roads; whereas, on the contrary, it will be found, that if there be any difference in the growth of such shoots, it will be in favour of those pollards that are most profusely covered with Ivy.

**"Ivy-bound Trees.**—Another mistaken idea prevails among woodmen respecting Ivy-bound trees, as if the tree were bound round by Ivy, as is often the case by Honeysuckles, Traveller's



The Cut-leaved Birch.

two noteworthy species: *Betula alba populifolia* is decidedly attractive and valuable on the lawn. It is a moderate-sized tree, bearing triangular, taper-pointed, smooth, and glossy leaves. The Canoe Birch (*Betula papyracea*) is perhaps the most noteworthy American Birch. It makes a large tree with quite ovate or heart-shaped leaves. These leaves are dark green, and contrast strongly with the distinctly white older portions of the trunk. The bark peels off readily in ample sheets, whence its use for

generally are very like American Birches. I should have mentioned, perhaps, among the European White Birches the variety *pubescens*, bearing leaves covered with beautiful white hairs, as well as *B. a. urticæfolia*, i.e., nettle-leaved, a deeply-cut, serrated, and hairy variety, and a variegated kind of the same with leaves blotched with yellow.

I do not pretend to have mentioned all Birches valuable for the lawn, but only a few of the most distinctive. No lawn is perfect without



Joy, and other creepers, which form a spiral round the stem, and may perhaps check the circulation of juices in the tree. But this is not the case with Ivy: it goes up straight on one side, or trails along the surface of lateral branches, without attempting to girth round or form a spiral line or tight bandage; on the contrary, it may be remarked that Ivy appears to feel its way with a sort of finger-like extremity, by which it insinuates itself into cavities in bark or crevices in the wall, but does not affix its holders till it meets with a substance which cannot be injured by them. Indeed, of so singular a nature is the mode of growth and attachment in Ivy, that it seems possessed of some sensitive quality; for the first effort to fasten itself is by a kind of gluten, or by a spongy substance like that by which flies walk up the smooth surface of glass windows. This is particularly evident in the five-leaved Ivy; but the common Ivy does not attach itself to smooth or vigorous young bark of the trees that support it, nor will it fasten to its own shoots, but seems cautiously to avoid them, generally by taking a different direction, and sometimes by crossing over the fibres, leaving a space between for each to swell; while, on the contrary, it feels its way and insinuates itself most closely into all cavities, particularly in old walls, which may sometimes be injured, but I believe are more often supported, by the matted and reticulated fibres which hold the loose stones together. Linnaeus affirms that 'Ivy does no injury to buildings,' and his observation respecting Ivy on buildings confirms mine respecting Ivy on trees; that although it may in a few cases be injurious, it is oftener beneficial; and therefore I hope it will not be deemed presumptuous in me to say, after Linnaeus, and in his words, that 'it does no injury to trees. It is a fact, that of trees covered with Ivy, there are apparently more sickly than sound ones. But there are many reasons to be assigned for this appearance: 1st, the Ivy in winter renders the trees more conspicuous, and few people who see dead branches proceeding from such trees examine whether there may not be other trees near them equally decayed. 2ndly, because a decaying or even a dead tree often serves to support Ivy, it is too often hastily supposed that Ivy is the cause of its death or decay. And 3rdly, it is the property of Ivy to attach itself to decaying trees in preference to the more healthy ones; and as such trees are of less value, they are often left after their neighbours have been cut down and sold. This will alone account for the comparative difference in the number of sound and unsound trees supporting Ivy. But if a single instance be produced of a healthy tree covered with Ivy near another tree not so healthy without Ivy, this alone would lead us to pause before we cut the Ivy from the tree, 'lest,' as Evelyn asserts, 'the tree may be killed by the sudden exposure to unaccustomed cold.' Instead of a single instance, I could transcribe from my minutes examples of every kind of tree compared with others of the same kind near it, and could confirm my facts by sketches taken in various parts of the kingdom; but I shall only subjoin a few specimens of such facts as have induced me to take up an opinion on the subject.

**"Facts.**—No. 1. At Twickenham Park are two rows of very large Cedars; two trees are most profusely covered with Ivy, and a nurseryman proposed cutting its roots to preserve the trees, till I convinced him that these two were the largest trees, and that the Ivy seemed coeval with the Cedars themselves, which they had certainly not in the least injured. No. 2. At Blickling, in Norfolk, the greenhouse stands between two very large Fir trees; the biggest is covered with Ivy, the other is a bare pole and not so large, though evidently of the same date, and both equally healthy. But the gardener could not be convinced, and only replied by an answer often made, viz., that the tree might perhaps have been still larger if it had not been loaded with Ivy. No. 3. The trees on Lord Hardwicke's estate at Wimpole furnish very striking effects of Ivy; in the pleasure ground east of the house the Ivy

trees in the grove are most decidedly the tallest, largest, and most healthy. No. 4. A large Ash very near the road in Arrington is a curious example of prejudice; it is a forked tree, one half naked, the other has been loaded with Ivy; the naked side shows strong symptoms of decay, the other is quite healthy; but under an idea (I suppose) of saving the tree, the Ivy has been recently cut off, and was hanging in vast masses, with stems of great bulk loosened from the tree without leaving any indenture in the bark of the tree; but the Ivy is the offender. No. 5. At Stoneleigh Abbey the timber is generally of prodigious size, some Oaks measuring 20 ft. round at 5 ft. from the ground; many are richly covered with Ivy; but I could not perceive any difference between those and the more naked trees, except that they appeared more luxuriant in the extremity of their branches; and I observed many coupled trees and forked trees under similar circumstances. No. 6. At Langold, in Yorkshire, the trees are not generally so large as those at Stoneleigh; but the two places agree, in the Ivy not having been so much destroyed as is generally the case; and, both in examining the trees near each other and those growing from the same root, I was confirmed in my opinion. No. 7. In a lane betwixt Hertford and Hatfield there are many very large old Thorns in the paling of Hatfield Park so covered with Ivy, that in the winter of 1808 I thought it an evergreen hedge, and the sprays of the Thorns were hardly visible; yet when compared with a few Thorns in the same lane, they appeared to be equally vigorous. Last summer I was surprised to miss the Ivy, till I perceived that the foliage of the Thorns had so entirely covered it that the Ivy was only a secondary object in Nature's great plan of decoration, and seemed humbly to retire into the shade of more luxuriant ornament, to come forward again, as I have lately seen it this last winter, when the neighbouring bushes were reduced to mere sticks. No. 8. At Woburn Abbey the timber has so generally been denuded of Ivy that I despaired of finding any example, except in an Elm near the Duke's apartment, and which is very conspicuous (in winter) from its profuse mantle of Ivy. But this was deemed inconclusive, although much superior in growth to some other trees near the same spot, because it was supposed that they might have contributed to its growth by sheltering it from the south-west winds. I afterwards discovered in the park a remarkable specimen, which is the outermost tree of a grove, and the most exposed to the south-west. The tree nearest to it has some dead branches, and seems evidently to have yielded to its neighbour's superior vigour. I should here further add the result of some experiments made by Mr. Salmon, who has the superintendence of the woods at Woburn. He tried the comparative substance and strength of several kinds of timber with the same kinds Ivy-bound as he calls it; but he could not find any difference, and is of opinion 'that in old trees it does no harm; and that in trees of ten or twelve years old it neither checks the growth, nor is the wood lighter or weaker; but he is still convinced that he has seen young trees killed by the Ivy.' It is therefore, in this sense of the word, that Ivy may be considered as a destroyer, although, for the reasons already assigned, I do not see how Ivy can oppress plants to whose bark it cannot attach itself. It remains only to mention

**"The advantages** to be expected from a less rigorous prosecution of this plant: 1st, it may be stripped from the trees in winter to feed sheep and deer, to whom it is grateful and wholesome food. 2ndly, its berries are a great resource to pheasants and every kind of bird during very severe weather. And lastly, if it were more generally encouraged, or rather if it were less unmercifully destroyed, our winter's landscape would be greatly improved. I could not but observe the contrast of places visited during the same winter. Instead of that melancholy scenery in parks where no Ivy is permitted to grow, and where each rugged and venerable Oak, without its foliage, presents in winter a picture of old age

with poverty and nakedness, the rich mantle of Ivy thrown over the trees of Langold and Stoneleigh gave grace and dignity to age, while it concealed its decrepitude."

## NOTES AND QUESTIONS.

**Cutting Down Rhododendrons.**—What is the best time to cut back Rhododendrons, or rather, I should say, to cut them down?—E. H. O. [*Early in spring is the best time, before they start into growth.*—G. B.]

**Golden Conifers.**—We have received from Mr. Charles Lee specimens of *Abies excelsa aurea*, a handsome variety of the Norway Spruce, golden now, but even more so in winter. It is not a case of variegation, but rather one of suffusion, and therefore more valuable, the whole of the upper part of the branches being yellow.

**Variegated Shrubby Trefoil** (*Ptelea trifoliata*).—A handsome yellow variegated form of this tree comes to us from Grasmere. It is richer and prettier than most variegated trees.

**The Tulip Tree.**—Of this there is a fine specimen in flower at the northern end of the hollow walk at Kew. Although rather past its best, thousands of blossoms may at the present time be counted on it. It is many years since it flowered in such profusion.—H. P.

**Portugal Laurels in Flower.**—Although the various sorts of Laurel are generally grown as evergreens, yet their beauty when in flower, and the extremely floriferous character of the Portugal Laurel, have this year at least entitled them to a high place in the list of flowering shrubs, especially as they bloom when many of our early flowering shrubs are on the wane. The Portugal Laurel is equally well adapted for forming single specimens or groups on the Grass, where by being fully exposed to the sun and air its wood well gets ripened, and fine masses of bloom that make a very effective display are the result.—J. G. L.

**Deutzias on Grass.**—The late growing and late flowering *Deutzia crenata*, single and double, make lovely bushes on the Grass, the strong shoots of last year's growth being now wreaths of delicate blossoms. These Deutzias, being perfectly hardy, cannot fail to become favourites, but have hitherto been generally grown as greenhouse or conservatory plants. An idea has got abroad that they need protection. In shrubberies they grow up weakly, for this variety has naturally an erect habit, and, therefore, in order to show its full beauty it needs space all round, for when its long shoots become laden with bloom they droop in the most graceful manner imaginable. They are extremely valuable as cut flowers at this time of the year both for drawing-room and table decoration; and I have no doubt that as shrubberies get opened up so that every occupant gets space to show its individual character, the Deutzias will be held in high esteem both for groups and single specimens.—J. GROOM.

**Waved Hedges.**—These are not common, yet I think they are worth adoption, on account of their graceful appearance. If the line of hedge be straight somewhat of its necessary formality is disguised if the upper line be made to rise and fall in easy curves. This seems to apply more particularly to clipped or shorn hedges made up of such plants as *Pyrus japonica*, *Thuja sibirica*, *Warreana* and *T. plicata*, Golden, Green, and Silver *Euonymus*, Holly, Yew, Box, *Juniperus sinensis*, *Thuja aurea*, and the like. Such materials are very accommodating, and perhaps need the use of the knife or the shears, whereas the more *négligé* plants, such as Sweet Brier, Dog Rose, *Lycium barbarum*, Honeysuckle, Jasmines, and Roses generally, are graceful in themselves, and are therefore better when not forced into any conventional form. The distance between the lowest points of two depressions in the formal hedges should vary with the height of the hedge, and may be anything between 12 ft. and 20 ft., and, as a rule, the higher the hedge the greater depth should the depressions have.—SYLVESTRIS.

**Catalpas.** It is now acknowledged by all that we have in the United States two distinct species,



*C. bignonioides*, a native southern form (with half a dozen, more or less, synonyms), very extensively cultivated through the North, and *C. speciosa*, a native of the Northern States, and only very sparingly utilised as an ornamental tree. After a careful comparison of specimens in Dr. Grey's herbarium, with the acknowledged authorities, he decides the dwarf form looking like a huge Currant bush, with leaves and shoots exactly like the common Catalpa, and distributed from European nurseries, as *C. Kämpferi*, to be nothing but a dwarf American Catalpa, and proposes the name of *C. bignonioides nana* for this form. We might say it is not as hardy as any of the other forms under cultivation, consequently not so desirable. The small variety, growing into a small tree, with long, slender pods, also sent out by European nurserymen as *C. Bungei*, is the true *C. Kämpferi*, while *C. Bungei* is probably not yet introduced into America.—*Botanical Index*.

## ORCHIDS.

### ORCHIDS AT DRUMLANRIG.

It is no exaggeration to say that at Drumlanrig there are thousands of Orchids consisting of all the best kinds. Specimen plants of some of the older sorts may be seen in abundance, and of the newer varieties the most useful only receive attention. Not many years ago there was no Orchid house at Drumlanrig; now there are four or five, and good houses they are, classified according to the requirements of their occupants, those which can only be grown well in a cool house having ample inducement to do so, while kinds that enjoy more warmth are equally well provided for. The two best houses have a pathway up the centre and a wide stage on each side. In the cool section the *Odontoglossums* are wonderfully luxuriant. They are not grown for the mere sake of having a collection, but for the value set upon the flowers in a cut state. For this purpose alone there is doubtless a bright future for Orchids, especially cool-house sorts, which can be cultivated to perfection without any fire heat or more attention than is needed to grow a Fuchsia or a Pelargonium successfully. Amongst Orchids which may be depended on in this way, *Odontoglossums* stand at the head of the list, and probably near them must be placed the *Cypripediums*, a good collection of which may also be found at Drumlanrig. Of *C. insigne* there are twenty-four plants some 4 ft. across, and the same number of *C. insigne Maulei*, but not so large. There are also numbers of *C. Boxalli*, which is considered the best of all the *Lady's Slippers* for cutting. Quantities of *C. villosum*, *C. Lowi*, *C. Hookeri*, *C. Sedeni*, *C. Domini*, and others are also grown here. Some plants of the latter two are as much as 6 ft. in diameter. Some of the blooms of *C. caudatum giganteum roseum* had tails 3 ft. in length.

Several spikes of *Odontoglossum Alexandræ* were each furnished with twenty-five fine blooms; *O. cirrhosum* had spikes 4 ft. in length; *O. vexillarium* comes next in order of merit to *O. Alexandræ* for cutting. *Masdevallias* were also in luxuriant condition in cool quarters. This is another favourite section of Orchids, and well they may be, as they are both choice and showy. One plant of *M. Harryana* lately produced seventy blooms. *Cœlogyne cristata* is grown in quantity in pans some 3 ft. in diameter, and the plants themselves are more than that in width, the large duck-egg-like bulbs clustering over the sides. Than this no Orchid is more valuable for winter flowering, and it does equally well at Drumlanrig in both cool and hothouse.

Amongst *Cattleyas* are fine plants of *C. labiata*, *C. labiata pallida*, *C. exoniensis*, *C. Mossiæ*, *C. Mendelli*, and others. *Vandas* are strong, healthy, and clean; some of them growing in groups together in large Oak crates, others in the shape of single specimens. Some of the best plants are 4 ft. high, and well furnished with leaves from the very bottom. Tricolor and the Dalkeith variety of it are the kinds most in request.

The latter differs from the type in being much larger in the bloom and brighter in colour. *Oncidium obryzatum* was, when I saw it, bearing a spike 7 ft. in length. *Oncidium cucullatum*, one of the sweetest smelling of Orchids, is grown here in quantity. Its flowers, too, are not only fragrant, but pretty, although small.

Of *Phalenopsis amabilis* there are some fifty plants, every one of which bears from four to a dozen leaves in the finest possible health. They are growing in earthenware baskets, and as they hang in a row, their snowy flowers drooping over the baskets have a grand effect. Of the best varieties of *Dendrobium* there are some fine specimens; the old *D. nobile*, being one of the most useful and showy for cutting, is grown in quantity. *Lycaste Skinneri* is regarded in the same light, and a very large, bright-flowered variety of it has been selected for the purpose. *Aerides*, *Epidendrums*, *Lælias*, *Saccolabiums*, *Zygopetalums*, and many others are all well represented; and the Indian *Crocus*, the beautiful little *Pleiones* must not be forgotten. They were out of flower, but the size of the carefully potted bulbs bore ample testimony to what they had been and what they are likely to be again. Many of these Orchids are growing in pots, and I observed that the rooting material was chiefly living *Sphagnum*, peat, and charcoal.

### NOTES ON ORCHIDS IN FLOWER.

THE Orchid houses in Mr. B. S. Williams' nursery, at Upper Holloway, have for some weeks past been highly attractive; not only the small plants that usually comprise a nursery stock being in bloom, but also huge exhibition specimens, many of them the largest examples in cultivation, and several of them quite unique in their way. The houses are gay with *Cattleyas*, *Dendrobies*, *Lady's Slippers*, *Odontoglossums*, *Oncidiums*, *Masdevallias*, *Aerides*, *Saccolabiums*, and numerous other genera, among which the following are the most remarkable:—

**Vanda Lowi** (the Necklace Orchid).—This is undoubtedly the noblest Orchid known, and the specimen in this nursery is probably the finest in cultivation. It has a break about 7 ft. high, furnished with twenty of its long leathery leaves. From the upper part of the stem proceed six flower-spikes, three on each side. These are each furnished with about thirty flowers, and when the spikes have attained their full length they will doubtless be from 6 ft. to 8 ft. in length. The plant will be in its best condition in about a week hence. For those who are not acquainted with this grand Orchid, it may be well to add that the flowers are of two different colours on the same spike; most of them, however, are of a rich reddish-chocolate hue, mottled with golden yellow, while the others are the reverse—a golden yellow mottled with reddish chocolate. It has taken about fifteen years for the plant under notice to attain its present dimensions.

**Promenæa citrina**.—This rare species is one of the prettiest of small-growing Orchids. At first sight it bears some resemblance to *Oncidium concolor*, the flowers being of a similar clear yellow colour, but the flowers are not so large, though the lip is broad and flat, as in *Oncidium*; a specimen of it on a block is furnished with a profusion of flowers. Another species, *P. stapelioides*, so named on account of the flowers bearing some resemblance to the Carrion flower (*Stapelia*), though not so showy as the other, is highly interesting, the marking of the flowers being very singular. The blossoms are about 1½ in. across, of a deep vinous purple colour margined with a lighter hue. When the flowers are partially expanded the colour is very deep and has a velvety appearance. It is also a small-growing plant, and succeeds well on a suspended block.

**Masdevallias**.—Among these are a few noteworthy kinds. The rare *M. trochilus* and *M. Shuttleworthi* are in flower; their singularly long-tailed and not very showy flowers strongly contrast with the large and bright-coloured kinds, among which we noticed a new variety of *M.*

*Harryana*, named *læta*, remarkable for the unusual breadth of the flower and its extremely bright violet-purple hue, which is very attractive. *Superba*, too, is a lovely variety and yet very uncommon.

**Lady's Slippers**.—Of these several are finely in flower. *Cypripedium Swianum*, a handsome hybrid between *C. barbatum* and *C. Dayanum*, is remarkably fine, as is also *C. Sedeni*, of which there is a specimen quite 4 ft. in diameter, though not yet in flower. *C. Stonei*, one of the finest of all the species, is represented by some fine specimens, and *C. lævigatum*, with its singular twisted sepals, is, like *Parishi*, in fine flowering condition. The latter is an extremely handsome species, quite distinct from any other, both in the colour and form of the blossoms; other *Lady's Slippers* in flower were *C. Hookeræ*, *niveum*, and *C. superbiens*, the latter being particularly fine.

**Dendrobium superbiens**.—This lovely Australian Orchid is well grown in these Nurseries, and it is evident that its requirements are understood notwithstanding that it is reputedly difficult to manage. The plants we saw were growing in a rather dry house, having an extremely high temperature and unshaded. Here the pseudo-bulbs attain a great size and have the appearance of being thoroughly ripened, a fact which no doubt constitutes the secret of growing it successfully if secret it be. All the plants indicate unusual vigour, a fact confirmed by the fine spikes of flower which they are producing. Of the pretty *D. Parishi* there is a large quantity in flower, the rosy purple blossoms producing a fine effect.

**Odontoglossum Coradinei**.—This rare species is just expanding its flowers, which are handsome, though not showy; they are pale yellow, heavily blotched with rich chocolate-brown. *O. sceptrum* is also in flower; it strongly reminds one of the *O. luteo-purpureum* type, to which it evidently belongs. Of the showier kinds, such as *O. vexillarium* and *crispum*, there are, of course, large quantities. One of the latter has flowers some 3 in. across, with unusually broad sepals. Among other conspicuous Orchids in flower were *Saccolabium Holfordi*, with two fine spikes, each 1 ft. long; remarkably fine varieties of *S. guttatum*, *Aerides Fieldingi* in numbers, *A. Lobbi* and affine in like quantity; *Cœlogyne corymbosa* in full flower, and *barbata*, a very handsome species, developing several spikes which will shortly be in perfection. One other kind remains to be noticed, viz., *Trichopilia hymenanthra*, an exceedingly pretty species, having thick leaves like those of a *Brassavola*, and long pendulous racemes of semi-transparent white flowers, spotted and blotched with purple.

W. G.

### HARDY ORCHIDS OF NORTHERN INDIANA.

THIS family is well represented in this part of the State. The varieties found are all terrestrial. While they do not equal the strange epiphytic varieties of the Tropics in brilliant colouring and grotesque forms, still they are well worthy of study, presenting as they do many various curious shapes, combined with the more delicate and beautiful shades of colour. From May to November there is no time that some of the family are not found in bloom. The first to appear in spring is *Orchis spectabilis*. This is widely distributed and rather common, though not very abundant in any place. It is only found in rich soil in damp shady woods. *Aplectrum hyemale* is also found in the same localities, though rather more rare. *Goodyera pubescens* grows on lighter soil, and is found on dry knolls and ridges, but always in the shade.

**Cypripediums**.—Four varieties are found here: *acaule*, *candidum*, *pubescens*, and *spectabile*. The first is quite common, but only in Tamarac swamps, growing in the Moss (*Sphagnum*) where there is not a particle of earth near the roots. The last, *spectabile*, is also found in the same swamps. But there is this difference between them, *acaule*



will do well in the full light of the sun, but spec-  
table only thrives in the shade. If the Tamarac  
trees are cut off, it makes little if any difference  
with the first, but the last dwindles in the  
sunshine and soon disappears. *Cypripedium can-*  
*didum* is found in peat bogs, where the roots are  
always wet, while the tops are fully exposed to the  
sunlight. *Cypripedium pubescens* is least par-  
ticular as to soil or situation. It is found in  
dry soil, in the shade, in low wet timber, where  
the water stands all around it, in the Tamarac  
swamps where there is no soil, and along the  
edge of grassy marshes fully exposed to the  
sun.

**Calopogon pulchellus** is most abundant  
and thrifty in Cranberry swamps in the moss,  
but is also found in some grassy marshes,  
and is occasionally seen on solid ground in low  
wet timber.

**Pogonia ophioglossoides** and **P. ver-**  
**ticillata** grow in the Cranberry and Tamarac  
swamps. The first thrives in full sunlight, while  
the second grows under the trees and large shrubs where  
it is partially shaded. *Pogonia pendula* is the most  
delicate and graceful species of the Orchidaceæ  
found in this part of the country. It is only  
found in damp woods where there is an accumu-  
lation of leaf mould. It is very seldom found  
in common soil. Its favourite habitat is  
close to old rotten logs or stumps, and in little  
hollows where the leaves gather and rot.

**Liparis lilifolia** grows in the shade on high  
ground. The greenish-white bulbs lie around on  
top of the ground among the dead leaves, having  
almost no connection with the soil. Often if you  
pick up a thrifty, fresh-looking specimen, you will  
not find half-a-dozen roots, and none of these will  
be over 1 in. in length. The roots instead of  
growing down into the earth, keep on or near the  
surface under the leaves. *Liparis læseli* is only  
found in the Tamarac swamps.

**Habenaria ciliaris**, *H. lacera*, *H. leucophæa*  
and *H. psychodes* are found here, but only the first  
is common. It is most abundant in the Cranberry  
swamps, and grows most luxuriantly in the  
Sphagnum while fully exposed to the sun. It also  
flourishes in low moist woods, and is sometimes  
seen on high, dry sandy ridges in the shade of  
heavy timber, but it does not seem to thrive in the  
latter situation. *H. lacera* is found in low ground  
near marshes, both in sun and shade. *H. leucophæa*  
grows only in very wet peat bogs or in Cranberry  
swamps in the moss, always in the sunlight. *H.*  
*psychodes* is sometimes found along the marshy  
edges of small streams, but seems to do best in  
stagnant pools under cover of heavy timber where  
the sun never shines. None of the three last is  
common, being only occasionally seen.

**Corallorhiza multiflora** is quite common  
in the deep shade of heavy timber, with its strange  
coral-like roots and leafless stem of curious  
flowers.

**Spiranthes cernua** grows very abundantly  
on low, wet bogs. *Spiranthes graminea* is occasion-  
ally met in the deep shade among Tamarac trees,  
and so also, though more rarely, is *Arethusa*  
*bulbosa*.

In the above notes I have \*not attempted to  
describe the appearance of the various species, nor  
to give any idea of the strange forms and delicate  
colours of the flowers. The plants vary in size,  
from the delicate and beautiful *Pogonia pendula*,  
which seldom exceeds 6 in. in height, to the tall  
and showy *Habenaria psychodes*, which often  
reaches a height of from 3½ ft. to 4 ft. Of the 21  
varieties above mentioned, I have never seen but  
four previous to May, 1879, yet eight of the new  
species had grown and blossomed each year for  
years within half-a-mile of my home. This in  
spite of the fact that I have always taken an  
interest in wild flowers, and gathered any new  
specimens I happened to see. There is a great  
difference, however, in picking what you happen  
to see and going out purposely to look for new  
things. Try it next year and you will be astonished  
before the season is over at the multitude of new

varieties you will find on ground that you have  
been over many times before.—W. C. STEELE, *La*  
*Porte, Indiana*, in *Botanical Index*.

**New Hybrid Orchid.**—The latest novelty  
among hybrid Orchids raised by Mr. Dominy is  
the result of a cross between *Cattleya Dowiana*  
and *C. exoniensis*, itself a hybrid. These are the  
same parents that produced *Lælia Dominiana*, and  
as the present hybrid is of a lighter tint, it has  
been named *L. Dominiana rosea*. The plant par-  
takes strongly of *C. Dowiana* in growth, particu-  
larly in the pseudo-bulbs. The flowers are  
magnificent; they are about the size of *C. Dowiana*,  
with a large shallow lip similar to that of that  
species, but of an intensely deep violet-purple  
hue, and beautifully crisped at the edges, which  
are white. The sepals are broad and of a delicate  
rosy tint, a lovely contrast with the dark lip.  
It was exhibited by Messrs. Veitch for the first  
time at the last exhibition of the Royal Botanic  
Society, where it was awarded a certificate of  
merit. It is certainly among the finest of the  
numerous hybrid Orchids raised by Mr. Dominy.

**Vanda Batemani.**—A fine example of  
this noble Orchid from the Philippine Islands is  
now in flower in the Kew collection. The plant  
is some 4 ft. or 5 ft. in height and furnished with  
about two dozen leaves on one "break," from the  
upper part of which a tall erect spike is produced,  
bearing a dozen or so of its large wax-like  
blossoms of a reddish yellow tint, copiously  
spotted with rich brown. We observe that at  
Kew priority is given to the name first applied to  
it, viz., *Fieldia lissoclioides*, but it is generally  
known as *Vanda Batemani*.

**Dendrobium Tattonianum.**—This is a  
singularly pretty Australian Orchid, known also  
as *D. canaliculatum*. It is of dwarf growth, being  
not more than 1 ft. high, with splendid conical-  
shaped bulbs furnished with thick and deeply-  
channelled leaves. The flowers are produced in  
racemes of about a score each from the apex of  
pseudo-bulbs in the same manner as the better-  
known *D. speciosum*. The blossoms are about  
½ in. across, with narrow recurving sepals, which  
are white and tipped with yellow, while the lip  
and wings are a bright bluish-purple. It is in  
flower at Kew in the coolest compartment of the  
Orchid house. It was first exhibited by Messrs.  
Veitch some fifteen years ago, when it was  
awarded a certificate.

**Aerides japonicum.**—An exceptionally  
fine form of the Japanese Air plant, the finest we  
have met with, may now be seen at Kew. It  
differs from the type in the flowers being longer,  
the sepals purer white, the lip more highly  
coloured and more distinctly crisped, and in the  
perfume being more pronounced. It is growing  
in the coolest apartment, and is the only species  
of *Aerides* that will thrive satisfactorily in a  
greenhouse temperature.—W. G.

#### A FLORAL TENT.

WHEN in charge of a garden in Monmouthshire,  
I used to have a beautiful object in the shape of a  
floral tent, which was made as follows: An Oak  
pole from 10 ft. to 12 ft. high, with a stout iron  
pin in the top, formed the supporting centre.  
From this a large hoop of iron was suspended by  
cords, so as to allow it to hang down about 2 ft.  
A round block of wood with a hole in the middle  
was then placed over the iron pin, and this was  
furnished with small iron eyes, to which cords  
were attached. These cords were continued from  
the hoop to the ground in a slanting direction out-  
wards, a few being omitted to form an entrance,  
and they were made secure at the ground to Oak  
plugs which rose an inch or so above ground,  
each of which was furnished with a small iron  
eye at the top. On the outside of these ran a  
narrow border, about 6 in. wide, made of good soil,  
and in this border at the foot of each cord two or  
three plants of major *Convolvulus* were planted.  
These ran up and joined a single-stemmed white

*Clematis Flammula*, which turned round the centre  
pole and formed a bushy head at the top. The  
spray from this head was trained downwards to  
meet the *Convolvulus*, and should any of the latter  
fail I used to fill their places with Canary Creeper.  
The tent was placed in a semi-secluded part of the  
lawn, and had a charming effect from the draw-  
ing-room windows. When the flowering season  
was over the *Clematis* was cut back, the cord  
loosened from the bottom, and the whole lifted off  
the pole and stored away in a barn till the spring.  
My experience of the above dates back to 1847,  
but since then we have had many fine *Clematises*  
to select from, and by means of which glorious  
tents of bloom might be made.

*Northgate Street, Dorizes.*

J. WILLIAMS.

[With this came a drawing of the tent in ques-  
tion, but the description will probably be suffi-  
cient to enable any one to construct a similar  
tent.]

## THE GARDEN FLORA:

### PLATE CCXIII.—TECOPHYLLÆA CYANOCROCUS.

THIS most beautiful spring-flowering Chilean  
bulb has been introduced some fifteen years.  
Bulbs of it were distributed from the Royal  
Gardens, Kew, but after growing them on for  
several years their cultivation was abandoned  
because they refused to flower. Imported bulbs,  
however, flowered in 1872 with Messrs. Haage  
& Schmidt, at Erfurt, and drawings were made,  
but the plants had been kept too warm, and in  
consequence the growth was lanky and the  
flowers somewhat small. Since then bulbs  
have been imported in considerable quantities,  
but scarcely any could be induced to show  
flowers; to do this they need careful treatment  
for a few years to enable them to gain strength.  
The annexed plate was prepared from plants in  
pots, but when planted out in a frame the  
flowers come much larger. The variety with  
the white throat is called *Leichtlini*; both are  
very sweet violet-scented. A bulb has been  
planted outside, and stood last winter very  
well without the least protection, yet I find  
that it does not do so well as in a frame. There  
is another species (*T. violiflora*) which has  
smaller flowers.

**Culture and Position.**—Flowering-sized  
bulbs should be procured and planted 3 in. deep  
in rich soil in a frame about August. If potted,  
a depth of 2 in. is sufficient, and after this the  
pots should be plunged and the plants treated  
like those outside. The secret is to keep them  
cool, and to admit as much air as possible; take  
off the lights when the weather becomes warm  
in February and March, and let the pots remain  
exposed until the flowers begin to expand, when  
the plants may be transferred to the greenhouse.  
The bright colours of the deliciously-scented  
large flowers will always secure a first-rate  
position for this desirable bulb from "the  
Valley of Paradise." MAX LEICHTLIN.

*Baden-Baden.*

**Freesia odorata.**—Last spring I got from  
Mr. Charles Ayres, of Cape Town, 50 bulbs of a  
*Freesia* named *F. odorata*. They were put into  
small pots in March, and placed on a shelf in the  
coolest house at command. In April their leaves  
began to appear, reminding me much of those of  
a miniature Iris. Towards the end of May I  
plunged them out of doors, fully exposed to the  
sun. In this position they had to withstand a  
slight frost during one night, but it did not harm  
them. Now every shoot is showing a flower-spike  
with three, four, and five buds on them. Late in  
June the first flowers opened, and were soon fol-  
lowed by more. To-day I have about 20 flowers  
open. They are long and tubular, pure white,  
and marked by a light yellow blotch on the lower











segment. In many flowers a white line runs through the blotch, so that I might as well say there are two blotches on the lower segment, but in some flowers I am unable to discern the white line. I know of no flower which gives off such a sweet perfume as these Freesias, and, though under a day temperature of about 100°, they lasted in perfection for three days. On account of the blotch on one segment (the lower one), I am inclined to believe that I have got a sort little or not at all known, the more so as I have not seen the name *Freesia odorata* in any bulb catalogue. Considering the great ease with which Freesias may be grown, it is surprising that they are not more largely cultivated than they are, at least in places where sweet-scented flowers are much in demand.—E. HINDERLICH, *Neues Palace, Potsdam*.

### IXIOLIRION TATARICUM.

SOME time ago we gave a coloured illustration of *I. Pallasi*, a newly introduced species, or at least a variety of this genus of bulbous plants. We were, however, unacquainted with the true

the loose yet elegant manner indicated in the woodcut. The several varieties or species of this genus seem to differ from each other mainly in depth of colour, *I. Pallasi* being apparently the deepest, and *I. tataricum* the palest, the intermediate shades being those of *I. montanum* and *I. Ledebouri*. The ribbon-like lines which run through the middle of the petals in all the kinds are fairly well shown in that portion of the woodcut which represents the life-sized flowers of *I. tataricum*. Besides the plants from Colchester we have seen *I. tataricum* unusually fine in one or two other gardens this year. The best were growing in a warm border of sandy loam sheltered by a high wall; here the bulbs had been planted for some time, and were quite uninjured by the severe cold of last winter, though the bed was only slightly protected. In warm localities this mode of treatment will answer well, but in colder districts it is advisable to give the plants the protection of a handlight, which not only affords protection in winter, but assists materially in ripening the bulbs after the flowering period if the glass is

also very enduring in a cut state, and their



*Ixiolirion tataricum* (flowers natural size).

long elegant sprays of blooms specially adapt them for such a purpose. W. G.



*Ixiolirion tataricum* (flower-stem reduced), showing beautiful habit.

### FERNS.

#### PLATYCERIUMS.

THESE are well worth cultivating, if only for the marked contrast which they afford not only with other species of the Fern family, but with all other plants as well. They constitute a small division of the genus *Acrostichum*, and are indigenous to widely different parts of the world, some temperate, others hot. As might be supposed from the difference in the climate of the countries they come from, they require to be differently treated, particularly in the matter of warmth. Those, like *P. alcorni*, that are found growing naturally under cooler conditions, will thrive in a greenhouse temperature, whilst *P. stemmaria* and *P. grande* require a warm house. All the species can be propagated from spores, but those that form young plants at the base similar to *P. alcorni* are easily increased by separating the young ones that are produced in this way. *Platyceriums* are epiphytal, consequently succeed with material for their roots to lay hold of such as found to answer for the generality of Orchids; in fact, they will live attached to a piece of wood with a little *Sphagnum* or fibrous peat as a moisture-holding medium to keep their roots damp. *P. alcorni* makes a good basket plant, but when grown in this way, the basket should be a large one, and care taken that the materials with which it is filled are of a nature not likely to become much decomposed or adhesive, as the roots will not live in anything that is at all retentive of moisture, and when once a plant is placed in a basket of such kind it should not require moving or interfering with in any way for years, as the whole basket, bottom as well as top, will get completely covered with the plants, which will spring from the roots, entirely enveloping the whole surface with their shield-like barren fronds, from which spring the fertile ones. *P. stemmaria* forms young plants at the base in this manner, but not so freely as the last-named species. The best manner I have found to proceed with the propagation of such of the kinds as can be increased this way is to get some small pots 2½ in. or 3 in. in diameter, half filled with drainage, the rest fibrous peat with a little

beauty of the older kind *I. tataricum* until we received about two months ago some splendid specimens of it from the New Plant and Bulb Company at Colchester. These were finer than any we had ever seen, and showed well the habit of growth and the beautiful soft porcelain blue tint of the blossoms. The stems were about 1½ ft. high, and the flowers arranged in

placed over the bed. A sandy loam enriched with well-decayed leaf-mould is a suitable soil for *Ixiolirions*, and if the border be thoroughly drained success with them is certain. Such a beautiful hardy plant as *I. tataricum* is certainly deserving of a place in every collection of plants be it ever so select, as the flowers not only last long in good condition on the plants, but are



Sphagnum and small crocks or charcoal added, securing the young plants on the top with a few wire hooks, keeping the soil fairly moist. The propagation should be done in the spring about March before any growth has been made, as all the species dislike their roots interfering with much more than most plants, especially when growth has begun, after which any disturbance of the roots will cause the fronds to come deformed. As the young stock are potted they should be placed where they can be accommodated with more or less heat according to the requirements of the particular species, giving them some shade, and keeping the atmosphere moist without admitting air near them. When they get fairly established, the kinds that will do without more than warm greenhouse temperature may be kept cooler, but even the less heat-requiring species do better grown in an intermediate temperature than in one that is too cool, especially in winter.

**Shade.**—In common with most Ferns, they require shade at all times when the sun is powerful. After being grown for a year in this way they may be moved to either baskets, blocks, or larger pots, whichever way it is determined that they should be ultimately cultivated. In respect to the duration of the sterile fronds, all the species are not alike, some dying off and turning brown much sooner than others. *P. grande* is always furnished with this shield-like growth in a living state, as the new ones overlap those produced the year previous before the latter die, that is if the plants are in good healthy condition. This species does not produce young plants at the root, consequently must be increased by sowing the spores. It does not make fertile fronds so freely as the other kinds, not until it has attained considerable strength, and when these spore-bearing leaves are let to grow and seed, they interfere very much with the size and strength that the barren fronds attain; and as these last are of much the most consequence, it is better when young stock are not required to cut the fertile ones away as soon as they appear; it is generally the result when this course is followed any way closely that this kind attains extraordinary size.

**Raising Seedlings.**—In the raising of seedling *Platyceriums* there are more that fail than that succeed. The cause, I think, is through delaying too long before collecting the spores, or, rather, gathering the husks after the seeds have fallen, to avoid which a good look-out should be kept, and as soon as the spore vessels are seen to be opening to take a sheet of paper, holding it under the frond, and with the hand rub out the spores, at once sowing them in the manner usual in the raising of young Ferns of such as this that do not vegetate when self-sown. The way to proceed is to take a large seed-pan, putting in drainage to about one-third its depth, filling the remainder of the space with peat broken in small pieces, mixed with bits of sandstone, or, if these are not procurable, potsherds and a little sand, putting as much fine sifted peat on the top as will cover the surface, when the whole is pressed down so as to make it quite smooth, after which give a good watering overhead, which will close up all the interstices, so that the spores, which are as fine as dust, will not get below the surface, as if this occurs they will not grow; and to prevent their being washed down when water is given the pan should be stood in a shallow vessel of some kind that will hold an inch or two of water, which in this way will keep the material moist. A sheet of glass should be laid close over the top of the pan and allowed to remain until the spores have vegetated. When the seedlings are large enough they should be pricked out into pans of prepared peat and small crocks in the way that other seedling Ferns are treated until they are sufficiently big to put singly in small pots. A moderate stove temperature both summer and winter answers for this species. The young plants should be moved into larger pots as required; it is a slow-growing plant, and usually will take three or four years before the seedlings are large

enough to place in the pots it is intended to confine them to.

**Culture.**—The best way of growing this species is when, as already said, the plants are large enough to put in their permanent position, to take a 10-in. or 11-in. pot and knock all the bottom out, after which get another one large enough to admit the rim of the bottomless pot standing within it bottom upwards; then fill the lower pot full of drainage material, and the upper one, now resting in it, with the best Orchid peat, to which add a little Sphagnum and a good sprinkling of broken crocks with some sand, placing the plant with its roots inside the inverted pot and its shield-like fronds on the outside, which it will soon completely overlap, often covering a considerable portion of the lower pot also. This admits of the water being conveyed to the roots behind the mass of old dead shields; if they are much wet they frequently cause the living growth laying in close contact with them to die prematurely; for this reason *P. grande* should not be syringed overhead. I have had a plant of this species grown in the manner described in the same pot for a dozen years without being disturbed in the slightest, simply putting a little Orchid peat in behind the shields as the old potting material subsided, and in this way it continued to thrive well; hence, will be seen the necessity for using in the first instance only such potting material as will last long, and not be likely to get into a soddened condition. It is necessary to caution beginners in the cultivation of these plants, especially those that form the largest shield fronds, like the last named kind, and *P. stemmaria*, that the young fronds, both those that are sterile and also the fertile ones, will not bear the least touch until they are fully matured. The young immature fronds of all Ferns are so tender, that they cannot stand the least rubbing without injury, but these *Platyceriums* are the most sensitive of all in this respect; a touch with the fingers, so slight as not to give pain to the pupil of the human eye, will cause disfigurement to their young fronds when unfolding. The undermentioned are all handsome, and among the most deserving of cultivation:—

**P. grande**, much the finest of all the species, as well as one of the most distinct and handsome plants in cultivation. A well grown specimen, with its sterile fronds from 4 ft. to 5 ft. across, never fails to be one of the most attractive plants in any collection. It is a native of Moreton Bay.

**P. stemmaria** is from Guinea, and is a distinct habited plant. It forms handsome shields, and also produces fertile fronds freely, but the shield fronds are not near so persistent as are those of the preceding species, dying before the young ones cover the old.

**P. Hilli**, recently introduced from Queensland, is likewise a distinct growing kind; the erect fertile fronds are very handsome.

**P. alicorne**.—A well-known old plant from New South Wales, that succeeds in an ordinary greenhouse temperature, but is finer when grown with a little heat, and a moister, more confined condition of the atmosphere of the house or pit in which it is kept.

**P. alicorne majus**.—This is said to come from the South Sea Islands. It is a rather strong habited kind, a larger grower than the old *P. alicorne*.

**P. Willincki**.—A Java species, distinct and handsome, the fronds drooping in habit. This, as might be supposed from the country to which it is indigenous, requires a warm house to grow it well.

T. BAINES.

**The Fern Aphis.**—This destructive green fly infests hardy Ferns in some nurseries, and is very difficult indeed to get rid of if introduced inadvertently into places upon some newly-bought addition. It is a lively little creature, green fly, indeed, but not the sluggish fellow we find so plentifully and which is easily smothered in tobacco fumes. The Fern aphis runs about so

quickly that you cannot catch him; and if you fumigate with tobacco he falls to the ground and lies there quietly until the air is clear, when he returns again to his pasture. Can anyone tell us how to kill him? It does not do to syringe delicate Ferns, and yet the enemy lives on them particularly for his forage.—BROCKHURST, *Didsbury*.

## COUNTRY SEATS AND GARDENS OF GREAT BRITAIN.

### ENVILLE HALL, STAFFORDSHIRE.

THIS, the seat of the Earl of Stamford and Warrington, is situated in one of the most picturesque parts of Staffordshire, near the old town of Stourbridge. The mansion, in my opinion, occupies too low a site, but the grounds around it, laid out in the first place by the poet Shenstone, are very fine, having been very considerably enlarged and beautified by the present Lord Stamford. They now cover an area of more than 100 acres of charmingly varied lawn, from various parts of which delightful views of the surrounding scenery can be obtained. Conclusive evidence may here be found that clear, open expanses of turf, pure and simple, are, when properly used, amongst the most beautiful features of a country residence, and these open spaces in the pleasure grounds at Enville have the additional advantage of being clothed with turf of the very best description, and, furthermore, kept up in really admirable style. Other portions of the Enville lawns are clothed and dotted over with many fine trees, but which were, we should imagine, in many cases originally planted much too thickly. This, however, has been, and is still being, remedied as far as possible by judicious and skilful thinning. The best of the trees consist of Limes, and having been apparently allowed fair space in which to grow from the first, they have attained a size and picturesque beauty seldom excelled in this country. Indeed, I do not remember to have seen at any other place finer specimens, except the many noble examples of this tree to be met with in the parks and grounds of Hampden House and Shardeloes, in Bucks, in both of which places they thrive amazingly. Near these Limes at Enville is a striking object—a large dead Cedar of Lebanon thickly garlanded all over the trunk and main branches by a vigorous growth of Ivy and white climbing Ayrshire Roses. The latter bloom in profusion, and form a charming contrast to the deep green of the Ivy. We think the plan of utilising dead trees as an adjunct to garden scenery might often be adopted with good results. In the grounds of Holly Lodge, Highgate, for instance, many dead trees are very effectively covered with Ivy. There are many fine specimens of Conifers planted in various suitable spots in the grounds, Cedars of all kinds seeming to thrive especially well, notably the *Cedrus atlantica*, which has here attained large dimensions, and the leaves present an unusually beautiful shade of bluish green. *Araucaria imbricata* thrives well, and also *Abies Douglasi*, *Pinus cephalonica*, *P. excelsa*, and *P. Cembra*, *Cryptomeria japonica*, *Taxodium sempervirens*, and many other fine kinds.

Spanish Chestnuts form another conspicuous feature amongst the lawn trees, many fine specimens being worthy of remark; one, a particularly fine tree, stands out singly, and is of a great height and noble proportions; the bole girths 18 ft. in circumference 3 ft. from the ground. Another notable tree here is a specimen of the Copper Beech, a tree of great size and height and beauty; the branches sweep the ground in a circle measuring 96 yds. in circumference.



There is also growing unprotected on the lawn a fine specimen of the *Paulownia imperialis* taken out of the conservatory and planted in the open air 16 years ago. It is in excellent health and vigour.

**The Rose Garden and Conservatory.**—In a somewhat sheltered portion of the grounds is a very excellently arranged Rose garden, and, unlike the results obtained in a good many so-called Rose gardens, excellent Roses are really produced in it during the greater part of the year. This is divided from the other portions of the ground by a sheet of water spanned by a rustic bridge, crossing over which one is brought shortly to a more elevated portion of the lawn. On the summit of this elevation, surrounded by a fine broad terrace walk is placed the principal conservatory, commanding a full view of the mansion. It is an imposing and well built structure of iron and glass 150 ft. long by 75 ft. wide. It is well furnished with fine specimen *Camellias*, *Azaleas*, and other suitable shrubs, together with good roof climbers, notably the red and white *Lapagerias*. This conservatory has broad and conveniently arranged walks, and thus forms a capital and agreeable promenade, a fact fully taken advantage of by the holiday folk from the surrounding Black Country, who flock to Enville in great numbers on days when the place is thrown open to the public.

**Flower Garden.**—Closely adjoining this conservatory is a very large extent of flower beds and borders scattered over a wide surface of lawn, which slopes gently towards the mansion; Enville being, as we have just observed, what is called a show place, much attention is given to "bedding out," and, looked at according to old notions, the display is bright and gaudy enough to satisfy, we should imagine, all lovers of this particular phase of gardening. The beds and borders were one and all at the time of our visit, early in September, a perfect blaze of colour, well and skilfully arranged, and in its way an undoubtedly good example of the flower gardener's art; but the eye soon wearies of continual lines and flat circles of blazing colour, and quickly seeks relief in the more graceful forms and comparatively sombre hues of the Grass and trees. That this display of brilliant bedding out is, however, thoroughly popular amongst the masses there can be no doubt, for on show days the visitors to Enville crowd together much more around the flower beds and in and around the conservatory than in any other portion of the grounds.

**Cricket Ground.**—Adjoining this portion of the grounds, but divided therefrom by a broad carriage drive, is one of the most noticeable features of the place, viz., a beautifully-situated cricket ground, 8 acres in extent, and as nearly as possible square, the turf as even almost as the bed of a billiard table, and at the same time firm and elastic—absolute essentials in a well-made cricket ground—results only to be obtained by the best possible method of construction being adopted in the first instance. The ground in question is surrounded on two sides by noble Elm and other forest trees, and delightful glimpses of the beautiful scenery around are obtainable from all parts of it. So far as our experience goes, we think there are few more beautiful or picturesque spots in England, in its way, than the cricket ground at Enville.

**The Kitchen Garden** is about 6 acres in extent, well laid out and surrounded by excellently-built walls, planted, in some cases, with thriving young Plum, Pear, and Cherry trees. The south wall, about 380 ft. in length, is covered with Peaches, Nectarines, and Apriots.

These trees, however, although in excellent health, rarely produced satisfactory results, owing to the frequent destruction of the blossoms by late spring frosts; but during the past season a glass coping, 2 ft. 4 in. wide, has been put up, and better results are expected. The open quarters of this comparatively new garden are devoted to the choicer sorts of vegetables, salads, Strawberries, Raspberries, and what are called bush fruits. The old kitchen garden closely adjoining is about 5½ acres in extent, and is also surrounded with excellent walls, well covered with fruit trees, especially Plums and Pears; the south wall is devoted to Peaches and Nectarines, young trees hereafter to be moved under glass. This nursery wall, as it may be termed, of Peaches and Nectarines ensures a supply of good fruiting trees to meet any emergency that may occur. The open quarters of this garden are devoted to the culture of the coarser kinds of vegetables, for which there is at all times a large demand. Close at hand are the fruit and plant forcing houses, some thirty-eight in number, and well adapted for the various purposes to which they are applied. Eight houses are devoted to Vine culture alone, the main kinds depended upon being Black Hamburgh, Muscat of Alexandria, and Foster's Seedling; Lady Downes is considered to be the best black Grape, but Mrs. Pince's Grape, Black Alicante, and Gros Colmar are also favourites. Two houses are devoted to fruiting Pines, the favourite kinds appearing to be The Queen and Smooth Cayenne. Five houses are filled with Peaches, and the trellises in all cases are well covered with healthy wood and foliage. The A Bec is a favourite Peach at Enville. To Figs three houses are devoted, Brown Turkey and White Marseilles being the kinds grown. Cucumbers, Melons, Strawberries, French Beans, Cherries, and Oranges have each a house of good dimensions allotted to them, and one and all are well grown.

**Orchids**, which occupy two good houses, consist of free-growing and flowering kinds used chiefly for cutting purposes. *Eucharis amazonica* is also in great demand as a cut flower, and two fair sized houses are devoted to it. It is grown both in pots and planted out, producing under both systems of culture a plentiful supply of flowers. Another house is devoted to the forcing of winter flowering shrubs, plants, and bulbs, a class of plants much in demand here. Gardenias and Stephanotis are also afforded a house to themselves, large quantities of their white sweet-smelling flowers being required. In other houses where good ordinary greenhouse plants, and there is also a capital Fernery from which can be cut abundance of good fronds for bouquet work, and a house is also devoted to Tea Roses. Ranges of heated pits, too, are innumerable, used mainly for growing and storing bedding plants for the summer flower gardening, for the production of winter salads, and for the forcing of choice vegetables. To Mushrooms an excellent roomy structure is given. The whole of this extensive forcing establishment is efficiently heated by two of the improved Trentham Cornish boilers set side by side, and so arranged that they can be used together or worked separately. These boilers are each 12 ft. in length and 3 ft. in diameter, with a 6-in. waterway all round, and with the addition of five cross water tubes placed beyond the fire bridge; these additional tubes greatly increase the heating power and capacity of the boilers, and were specially designed for the gardens at Enville by Messrs. Messenger, of Loughborough; each of these boilers, which are well set, efficiently heats 8000 ft. of 4-in. hot-water pipe.

HENRY BAILEY.

## GARDEN DESTROYERS.

### THE ONION MAGGOT.

It is stated in *THE GARDEN* (p. 26) that this maggot is everywhere abundant this year. According to the "Notes of Observations on Injurious Insects," the most successful remedy for its attacks, when found to be established, is

**Paraffin Oil.**—Mr. M'Kinlay, writing from Tulloch Castle, Ross-shire, says the only means which he has found serviceable for its prevention is the use of sand saturated with paraffin oil, and sown amongst the Onions, and this afterwards watered by means of a can with a rose. He experimented on the direct effect of the paraffin by placing some Onion maggots in a flower-pot in soil with some young Onions. On the third day (thus giving time for the Onions and their contents to be re-established) he introduced three drops of paraffin into the flower-pot; and on examination with a magnifying-glass, twenty-four hours afterwards, all the maggots, with the exception of two, were dead. Lime water was not so effectual, but proved fatal after a time. In the gardens at Tulloch Castle the method of cultivation is to trench the Onion ground early in autumn, working in plenty of manure, and leaving the surface rough to be pulverised by frost. About March 10, if the weather is favourable, about six or seven cart-loads of hen-manure are wheeled on to the Onion break previous to forking (care is taken to have the hen-manure well turned during the winter, and covered with soil to keep in the ammonia). After forking, the ground is well raked, and seeds sown in rows 1 ft. apart, and after it is covered the soil is well trodden with the feet and raked over. The trampling of the feet makes it quite hard, and is considered to do good by preventing progress of the maggot, which has the power to travel from one bulb to another. Mr. Wilkie mentions the Onion maggot as having done much damage at Ardkinglas, Argyleshire, but after mixing a good glassful of paraffin oil with about 6 gallons of water, and carefully throwing a spray of the mixture over the Onion bed two or three times, the attack was terminated. At Langwell, Caithness, Mr. Sutherland notes that the ground is ridged for the Onions so as to expose it as much as possible to the frost; the horse manure is thought to be the best (if not too much fermented) for use on heavy damp soils. Here the maggot is sometimes troublesome, and when it appears paraffin is mixed with water in the proportion of a pint (English measure) to 2 gallons of water, and with this the Onions that are planted in rows are watered through the spout of the can without the rose; those that are in beds are watered with the rose on the can. Mr. Sutherland observes that the paraffin should be used carefully in dry weather, lest it should burn the plants.

**Soot Mixtures.**—Mr. Simpson reports that the principal part of the Onion crop at Brahan Castle, Dingwall, was not injured last year, but a few lines of Welsh Onions, sown in a part of the same break, were spoiled by the maggot, conjecturally in consequence of the different treatment of this part of the ground. The ground for the principal part of the crop was trenched and manured at the end of the previous year, and soot and wood ashes were spread on the surface before levelling for seed-sowing on March 11. Mr. Boyd observes that he noticed many of the Onions in the gardens at Callander Park, Falkirk, at the beginning of May last year to be turning yellow at the tips of the leaves, and on pulling them up found nothing but a tube full of maggots. He at once put on a woman to pick every Onion so affected and burn them, and the result was as fine a crop of



Onions as could be desired. Mr. F. Grant Finlay mentions that at Castlemilk, Locherbie, the damage from Onion maggot is usually trifling; last year, however, it amounted to fully one-eighth of the crop. He finds its presence less observable when the ground is well prepared previous to sowing the seed. He generally trenches deep in November, and lays in a liberal supply of well-decayed stable and cow manure, and the natural soil being stiff and heavy is greatly improved by exposure to the air; therefore it is put up in ridges, which remain until the latter end of February, when they are levelled with forks. On the first favourable day in March the ground is well trodden, the seed is sown in drills, and before the drills are closed a compost is sown broadcast and pretty thickly over the ground, formed as follows: Four parts of refuse soil from the potting bench, two parts dry soot, and two parts wood ashes; these are thoroughly mixed together and put through a fine sieve before being used. This system usually produces good crops of excellent quality, and with little amount of insect attack. At Torloisk, in the Isle of Mull, Mr. Grierson notes that the Onion maggot began its attacks last year about June 1, and by the end of July there was not a single Onion on the break of about 80 square yds. The ground had been rather wet, so it had been drained in winter and trenched about 2 ft. deep, and a good layer of farmyard manure placed at the bottom of the trench. In the spring, a few days before sowing, a compost was made of soot, sea-sand, pigeon manure, and lime rubbish; a good coating of this was given all over the land, and it was forked in. Several dustings with soot were given when the Onions were above ground, but the whole crop, nevertheless, was lost. The maggot is also reported by Mr. Russell as having been very destructive at Poltalloch. Mr. Russell considers that in the light soil of that neighbourhood Onions do best on ground not trenched, and he gives two dressings of guano—one when the plants are about 4 in. high, one later on.

**Alum Water and Manuring.**—Mr. McLaren notes that at Hopetoun, South Queensferry, he has found a solution of alum in water a good and cheap remedy for the "worm" in Onions. The Onion fly was not so plentiful as usual in the district of Dalkeith, the past season being good for the Onion crop. Mr. Malcolm Dunn mentions that autumn manuring with rich and well-made manure, deep cultivation, and change of ground every season secures first-rate crops almost entirely free from maggot. The soil is put up in ridges when trenched, or double dug in autumn, the ridges levelled with forks early in March, the surface firmly trodden, raked, and drilled about 1 ft. apart, and the seed sown. When the plants are about 6 in. high they are thinned from 3 in. to 5 in. apart, according to the size they grow, and receive a dressing of dry soot on a damp morning. Keeping clean of weeds is all that they require afterwards till the crop is ready for lifting. Mr. P. Loney, writing from Marchmont, Berwickshire, mentions that he has no trouble with the maggot, as on its first appearance he waters freely with soap-suds two or three times, which usually destroys it and nourishes the Onions.

**Paste and Insect Pests**—Dr. Newington, of Ticehurst, informs us that he employs common paste, such as is employed to place placards on walls, for keeping his various fruit trees indoors clean, instead of the usual and somewhat disagreeable mess of the Vine dresser. He simply paints the shoots of his trees with paste. It does its work as effectually as any mixture; seals up insects, &c., and then peels off clean as the shoots swell in spring, leaving a clear surface beneath.

## THE ROSE GARDEN.

### BUDDING ROSES.

**Stocks.**—Am I to begin with the buds or the stock? With the stock undoubtedly, as far as preliminaries go, and that a month or so before budding. The usual practice is to go over the stocks, select two or three of the highest breaks or branches on them, and remove all the others, as well as all suckers. This advice will bear improvement, thus: Go over the stocks, select one, two, or at the most three of the strongest shoots on them, no matter how high or how low, and cut off all the others. If the shoots are low, remove the head of the stock at the same time to the best shoot left. Moreover, should the stock seem hard and dry, and a good strong sucker appear near its base, remove the stock bodily, and thus concentrate all the strength of the root into the sucker. This will probably not be fit for budding until July or August. No matter. Should it grow well it will furnish a first-rate stock for late budding, and such buds will lie dormant till the next spring, when many of them will break with such vigour as to yield the best flowers of the season. Stocks of this character may have two or three buds inserted near their summit to form ordinary standards, or they may be budded almost from base to summit at regular intervals, and thus grown into fine pyramids, a style of Rose which has gone much out of fashion of late years. Few forms, however, equal in beauty that of a well-formed pyramid. In selecting the shoots for budding on ordinary stocks too much attention has often been bestowed on getting all the branches as close together as possible near the summit, so as to lay the foundation of a regular round-headed bush. The finest shoots do not always, by any means, break or push just in such order, and very often better and far more varied results would be obtained by selecting the stronger shoots on the stocks, no matter where posted.

**Shortening the Shoots.**—Some stop the shoots on the stocks a week or two before budding. It gives freer access to the Brier, and renders the work of budding easier, but the shoots are better left intact. The stopping dams back the sap, and forces the buds off the stock, and also the Rose buds, to break into growth. This precocious development is looked upon as an evil to be avoided by the experienced rosarian. The free flow of the sap along the Brier shoots helps the foreign buds to take more perfectly; facilitates the healing of the double wounds in the bud and the stock, and keeps the bud from breaking, while enabling it to be filled up plumply with the best that the roots can supply. If towards the autumn, say the middle of September, the bud still looks thin and weakly, the Brier shoot may then be shortened back to within a few eyes of the Rose bud.

**The Buds.**—Having prepared the Briers as indicated, the next operation is putting in the buds. Are they to be picked out singly, or cut off in the mass? Must they be kept dry, or plunged in water? May they be exposed to the sun, or closely shaded? and should they be taken morning, noon, or night? Such are samples of questions that all who grow Roses have had to answer. It may, therefore, be useful once more to answer them as briefly as possible. Where the supply is limited and the Rose buds are near the stocks, it may be well to take off each bud singly. Buds may thus be removed from shoots without injuring them much or arresting their growth. One-third of the section of the wood is mostly deep enough for the removal of the bud with its shield or section of bark. This leaves the piths intact, and the shoot will continue to extend as if no buds had been removed from its sides or base. But, generally, shoots from 6 in. to 9 in. long are the most convenient from which to obtain a supply of buds. The latter must be plump and well formed, though by no means in a growing state. It is seldom that more than six such buds will be found on a single shoot—the base may be too far

advanced, the top too immature for buds. Cutting the shoot where the useful buds begin, the upper and useful portion is moved as well as all the leaves, excepting a small portion of the petiole or stalk. The spines are then to be rubbed off sideways with a quick action of the finger and thumb. Plunge them in water till wanted? No, by no means. Each drop of water that reaches the fresh bark of the bud is a hindrance to its union with the stock. Nor must the buds be dried. Sun or air-dried buds are buds hindered seriously from growing. If the drying goes far growth becomes hopeless. Therefore the shoots with their supply of buds should be shaded from the sun and sheltered from the air. As to the time to take the buds off and put them on again, morning and night are preferable to noon and dull days to light ones; though for reasons, already stated, wet days should not be chosen for budding.

**Inserting the Buds.**—Having proceeded so far with the buds, the next point is to insert them. Dash off the spines on the place selected for the bud; the best spot is about the centre of the space between the sets of leaves. Here the bark runs freely. Choose a space as near to the base of the shoot as possible, and this not because it is always or often the very best possible for the taking of the bud, but to avoid the pest of Brier suckers after the Rose is established. Make a slit with the knife about 1 in. long in the centre of the shoot, and on its upper surface for convenience. A cross cut may also be made at the top or bottom of the slit, about one-third round the circumference of the trunk. This facilitates the insertion of the bud with its shield of bark. Otherwise it is not essential, and may even be injurious. Great care must be taken not to penetrate the wood in the slightest degree in making either slit or cut. To prevent the possibility of this, the ivory handle of the budding knife is to be preferred for making the vertical slit. The knife, if sharp, must be lightly handled in making the vertical one. Hundreds of Brier shoots are broken off short by the buds through the knife slightly penetrating the wood in the making of this cross cut. Slightly raise the bark on one side to see that it runs freely. Then, turning to the stock of buds on the branch, cut one off, always from the bottom upwards, beginning from  $\frac{1}{2}$  in. to  $\frac{1}{2}$  in. below the bud, and penetrating to from a quarter to a third of the diameter of the wood. The section of the wood and bark should average about 1 ft. in length, the thickness depending on the size of the Rose wood and the diameter of the stock. The amount of bark is of less moment than that it should be clean cut, unbruised, and that the wood should be abstracted from it without drawing out the base of the bud. Seizing the section of wood and bark in the left hand between the thumb and middle finger, using the base of the petiole and the bark on either side of the bud as a holdfast, the point of the forefinger is used as a slight lever to separate the bark at the base of the section from the wood. No sooner is this done than the point of the budding knife and the thumb of the right hand are used to grip hold of the wood and give it a sudden jerk out. The moment the bud is freed from the section of wood it should be plunged into its new home. Raising the edge of the stock already separated, the edge of the hand is slipped under the budding knife, at the same moment being brought down the other edge of the stock, and the bud following it home. Not an instant should be lost between the removal of the woody section and the sending the bud home amid the healing uniting forces of the stock. Once safely home, with no more wounds nor bruises than is incident to the operation, leave well alone.

**The Tying** should be done at once, and every budder should tie his or her own buds. Various time-saving ties have been suggested, such as those of flexible metal, india-rubber, elastic, or adhesive felt, or paper, &c. But there are no ties in fact equal to wool matting or grass. The ties must be tight to render the buds immovable, for there can be no union apart from immobility at



first. Tightness is also needful to get the edges of the bark as close together as possible. The wounds are thus speedily healed, and the bud made part and parcel of the stock, as far as its health and supplies of food go. There are different modes of tying, some proceeding from the top downwards, and others from the base upwards; the latter is to be preferred. Either way care must be taken to leave the bud room to swell. In a fortnight or three weeks after budding the ties should be examined and more room allowed. This second tying will be all that is necessary, and is in fact not seldom dispensed with to the great injury of the buds and future Rose trees or bushes. D. T. FISHER.

#### BEST ROSES FOR A SMALL GARDEN.

HAVING received numerous enquiries relative to what are the best Roses where a very limited collection is planted, say in villa gardens, I think that a general answer to my correspondents in the columns of THE GARDEN may be the best method of reply. Three elements enter into the question, and which will determine the selection: 1st, vigour of constitution; 2nd, colour and general form; 3rd, stocks grown on. Now, the first eliminates some of the most beautiful from our catalogue, La France and others being too tender to be included where a small quantity only are cultivated, yet there remains a splendid array which I will endeavor to set out in due order. Gloire de Dijon (Tea), best all-rounder of the lot; Charles Lefebvre (H. P.), Alfred Colomb (H. P.), Cheshunt Hybrid (Tea), Mr. Baker, (H. P.), Capt. Christy (H. P.), Prince Camille de Rohan (H. P.), Beauty of Waltham (H. P.), Reynolds Hole (H. P.), Madame Nachery (H. P.), Madame Charles Crapelet (H. P.), Star of Waltham (H. P.), Ferdinand de Lesseps (H. P.), Paul Néron (H. P.), Mrs. Laxton (H. P.), Duke of Edinburgh (H. P.), Sultan of Zanzibar (H. P.), Souvenir de la Malmaison (Bourbon, and always good), Madame Berard (Tea), Homer (Tea; very hardy and having extraordinary vigour of growth), General Jacqueminot (H. P.), Charles Lawson (Hybrid China), Coup de Hebe (Hybrid China and Bourbon), Reine Victoria (Hybrid China and Bourbon). In the above list we have two dozen of the very best Roses for small gardens. It is true that such magnificent flowers as Catherine Mermet, Niphetos, Maréchal Niel, Madame Lambert, Madame Hippolyte Jamain, Marie Baumann, A. K. Williams, La France, do not appear in it, neither do the ever lovely, although scentless, Verdier race, but nevertheless the above dozen and a half will, if properly treated, produce a beautiful combination of colour and perfect contour of shape. The cream *par excellence* of the lovely Teas and those gorgeous-tinted hybrids with Tea blood in their veins are purposely omitted, for it must be remembered that it is not every hopeful swain, however ardent he may be in his attentions, that can count with confidence on being rewarded with "beauty's smiles," and that the very enticing delicacy of their tints and their fragile growth are evidences that speak eloquently of that very want of constitutional stamina so necessary amongst a small army, where a few absentees in the ranks on review day would mar the glory of the inspection. If more were required, then duplicates of those tabulated could be ordered; but unless in extensive gardens beware of running after new kinds until their constitutional vigour and freedom of blooming have been established by at least being three severe winters planted out.

As regards the best stock, the answer may vary according to climate and soil. Roses in general will do on the Manetti, De la Grifferaie, and on their own roots, but the best stock for dwarf Roses in all positions is undoubtedly the seedling Brier, now in general use in all the large Rose nurseries. When planting avoid a frosty day or one with a cutting, bitter, east wind. Dig your trenches deep, fill in with half-rotten cow manure, plenty of pulverised bones, the size of marbles, mixed with turfy loam; make all smooth, tread

down firmly with a heavy foot, drench with water, stake securely, and tie on your tallies, and abide the result with patience. G. C. GARNETT.

*Olney, Donnybrook.*

**The Japanese Rose.**—Mr. G. F. Wilson says that this makes a very good standard, bold, strong, and picturesque.

**Rosa blanda.**—This species does best as a bush on its own roots, and as such is usually very floriferous and lasting. I have never raised it in any other way but by seed, which in warm summers should ripen thoroughly. I have no doubt it could be grown as a pillar or wall plant, as the growth is tolerably vigorous and long jointed. It makes an excellent lawn plant in not too conspicuous positions, growing eventually into a rounded bush 6 ft. high, and acquiring a pendulous habit as the shoots lengthen. Beyond cutting out old non-floriferous wood, and stopping here and there the too rampant shoots, no other kind of pruning should be permitted.—SYLVESTRIS.

**Moss Roses Sporting.**—A friend of mine has a large standard white Moss Rose tree in his garden covered with blossom, but one of the new shoots of this year is bearing six pink Roses, one of which I enclose; it is neither a Moss Rose like the white ones, nor one of the original Briers; of course we looked carefully to see if this branch could have been budded afresh, but this was not the case, and every other shoot along the same branch bore white Moss Roses only.—M. M. V. [The Rose bloom enclosed seems to be the common Provence. The old Moss was a sport from the Provence, and the white Moss was a sport from the old Moss. In this instance the white Moss seems to have sported back to the original common Provence. Moss Roses sport much more than any others.—W. P.]

#### COTTAGE GARDENS AT HELMINGHAM.

I THINK it was Rousseau who said, "If you would ascertain whether a country is rich, prosperous, and happy, go not into the mansions of the wealthy, but examine the cottages of the labourers." The two hundred cottages which have been erected or renovated by Lord Tollemache on his property at Helmingham will bear this test, and I believe that the satisfactory condition of the property, where the tenants are still farming with spirit, though the land is heavy and all arable, is largely due to the supply of good labourers, who are bound to the spot by the excellent cottages and the half-acre gardens. As usual in such cases, the outlay on the cottages has not been directly profitable, the cost of each pair has been, I believe, about £300. The rent of the house and flower garden is £3 10s. a year, and the half-acre of land with which each cottager is provided, close to his door, is charged at the same rent as that paid by the farm tenants for the same kind of land. The big gardens here were given some years since for the purpose of inducing those virtues which "landless labourers" are said to be deficient in, such as temperance, thrift, and home-keeping. Half an acre for a single family is about four times as much as the authorities in some districts have usually approved; and in some situations, where the country is populous and the women are paid high wages in various occupations, half an acre may be more than a labourer would care to hold. When Lord Tollemache determined on the experiments of the large gardens many years since, the scheme was strongly opposed by the farming tenantry; but the general opinion on this subject has now entirely altered. It has been sometimes argued that the cost of the extra produce in the big gardens is greater than its value. On the other hand, farm labourers are too often discontented and inclined to quit the agricultural districts, whenever the state of the labour market admits of their doing so, leaving the land in some cases inconveniently depopulated. If, then, the big gardens should prove in some degree a remedy for this state of things, they must be desirable, even though the patch of Wheat may cost per quarter 2s. or 3s. more than if it were imported from America. And, besides, the cost, whatever it may be when strictly reckoned, is not actually incurred. It seems to me quite fallacious that the force which a labourer expends in his garden is necessarily withdrawn from his day's

work on the farm, because these short tasks in a man's own garden are found to be a great delight and stimulus to him. The cottages at Helmingham have been generally built in pairs, each pair standing on its acre of ground, so that the garden is close to each man's door; and this is a very excellent arrangement, far better than the allotment plan, which provides a plot at a distance. I have mentioned the subject of rent. I could never understand why a labourer who is going to dig and improve (in many cases) a poor bit of land should be charged at the rate of £4 or £6 an acre for it when the adjoining land pays 30s.—H. E., in *Field*.

#### THE FRUIT GARDEN.

##### FERTILISING PEACH FLOWERS.

THAT observation of Mr. Wysor's in the *Rural New Yorker*, that Peach flowers are fertilised before they expand, is one that should set cultivators thinking. In this country it has always been assumed that fertilisation did not take place till the flowers expanded and the blooms and organs were fully developed. No doubt it will be difficult to induce people to believe that such is not the case, but the observations of an experienced horticulturist, carried out in a way that perhaps cultivators generally do not adopt, deserve consideration. When we remember that some have strongly advised the use of the syringe to promote fertility, others the use of bees in early houses, and others some disturbance of the branches to liberate the pollen, no stronger evidence is needed to show that a belief entirely diverse from that entertained by Mr. Wysor is held here. What has often struck me as curious in relation to the setting of a crop of Peaches under glass is the fact that cultivators have all succeeded in doing so well, and yet by such diverse modes of treatment. Beyond giving the needful air many men have secured just as good a crop as others have who thought it essential to fertilise each bloom singly with a brush. What would be of interest in the matter would be to learn whether in this latter case any observation was taken as to whether any blooms not artificially fertilised did set fruit or did not. Even in matters of this kind there is too much following the beaten track without due consideration as to the necessity for it. If Mr. Wysor is correct in his theory, it fully explains how it is that the most careful artificial fertilisation and the entire lack of care in the matter have been productive of identical results. In reality, the fertilisation has been already accomplished, and syringing, pencils, bees, and all other aids are so much waste labour. No doubt some of our able Peach growers will have a word to say on this interesting subject.

A. D.

##### LAYERING STRAWBERRIES.

ONE of the most important parts of Strawberry culture in pots will now be occupying attention, and as every day now is worth two later in the season, I would advise all who desire a good supply of forced Strawberries to lose no time in pushing on the layering in small pots of a sufficient quantity of the earliest runners that can be got; by a sufficient quantity I mean enough to fill all the pots proposed to be forced, and enough to ensure the filling up of all gaps occasioned by blind or worthless plants; in fact, we usually layer enough to be able to select only the best for potting; all that are not quite good enough for this purpose are planted out in single lines for fruiting and supplying runners next year, as we find that the earliest and best runners are always produced by young plants the first year after



planting. Before commencing to lay the plants we get a sufficient quantity of 3-in. pots filled with soil. Chopped up turfy loam, and a little wood ashes or burnt earth, and thoroughly rotten manure from old hotbeds make a soil in which Strawberries grow well. These pots are carried to the beds and plunged in the soil up to the rim around each plant according to the number of runners on it. The ends are then cut off beyond the first runner, and the runner or embryo plant is either pegged down on the soil, or secured by a stone heavy enough to keep it from getting displaced, with the additional advantage that it helps to retain moisture where it is most needed, and thereby insures speedy rooting. The soil must be kept moist by watering, which in dry weather needs frequent attention, and in three weeks the plants may be severed from the parent and removed to a partially shaded position, near the potting shed, ready for their final shift into their fruiting pots. But from the earliest start with layers until they are finally divested of their fruit, Strawberry plants should never be allowed to become dry, for although the Strawberry will bear any reasonable amount of heat and moisture, the chances of a crop are very much reduced by drought if of the slightest duration.

J. G.

### THE WILD FRUITS OF UTAH.

WE do not expect much native fruit in so dry a region as Utah, yet some does occur. In the south of Utah is *Ribes aureum*, the black berries of which are very grateful to the traveller. It occurs on almost all the stream banks, and is extensively cultivated, both for its fruits and flowers; the fruit is much like that of the Black Currant of the gardens.

Growing in the sand and on lava beds is a peculiar plant, a wild Peach, *Prunus fasciculata*. Though it is almost devoid of the delicious interior of the cultivated one, yet it has exactly the appearance of a small Peach, and, according to Gray, is its nearest North American relation. It is a small scraggy shrub, 2 ft. to 4 ft. high, with an abundance of small white blossoms. There is also a wild Grape growing there (*Vitis arizonica*), but I have never seen its fruit.

Those who live on the broad prairies of Iowa and adjoining States can hardly realise the feelings of a botanist who toils over mountains with snow often  $1\frac{1}{2}$  ft. deep, and along valleys in deep slush, half snow and half mud; then descends a narrow valley and suddenly finds himself traversing a dusty road, lined on either side with Peach trees loaded with blossoms, while the air is full of their fragrance. Yet such is the experience of almost every one who makes a journey to St. George in March. Later in the season there is an abundance of delicious fruit, such as Peaches, Cherries, Grapes, Pears, Apricots, &c., and soon there will be Figs also.

In the mountains of Utah, during July and August, there is an abundance of fruit. The most plentiful is the Service Berry (*Amelanchier alnifolia*), then the wild Cherry (*Prunus demissa*), whose fully-ripened fruit is very pleasant. Next comes the wild Gooseberry (*Ribes divaricatum* var. *irriguum*), whose large black fruit at once starts the question: Why is it not cultivated more? It is well worthy of cultivation, and I think would prove hardy in the Eastern States, for it grows in the canyons at an altitude of 7000 or 8000 ft., where the winter lasts from October 1 to May. It is well adapted to a dry soil, too, for it is extensively cultivated in the valleys. The stems are scantily clad with prickles, and almost devoid of the small deciduous prickles that clothe the lower stems of many Gooseberries.

The Eastern Raspberry is rather common,

but does not fruit as abundantly as in the East. A black Raspberry (*Rubus leucodermis*), of frequent occurrence, is still more worthy of cultivation. It surpasses the common Black Raspberry of the States in flavour, size of fruit, and productiveness. I chanced to be in a canyon where they are abundant when the bushes were loaded with ripe fruit. Handful after handful of the delicious berries were greedily devoured, till it seemed as if I could never eat enough. This plant is deserving of cultivation more than any wild *Rubus* with which I am acquainted. I feel quite sure that it will be hardy, since it reaches an altitude of 8000 ft. at least.

The two Strawberries (*Fragaria vesca* and *virginiana* var.) are frequent in the canyons, but seldom bear much fruit. Several species of *Vaccinium* occur in the Wasatch, but are not common. The Oregon Grape (*Berberis repens*) is common; its fruit is eaten, and is highly prized for its medicinal properties. The undescribed *Crataegus* of this region bears an edible fruit abundantly.

Two species of Elderberry (*Sambucus glauca* and *racemosa*) are common. *S. glauca* surpasses all others in the size of the fruit and clusters. I have gathered clusters of ripe fruit that weighed several pounds, and were over 1 ft. across. The berries are black with a bloom, and are more agreeable than those of *S. canadensis*. —M. E. JONES, Salt Lake City, in *Botanical Index*.

### ALNWICK SEEDLING AND OTHER GRAPES.

LAST year I complained that the Alnwick Seedling was all but a failure with me, so far as setting its fruit was concerned, but I must say that this season it has set beautifully grafted on the Alicante, and on our two canes, run up the year before last, I have a crop of fine bunches. Why it has set better this season than last I cannot tell, as the circumstances are the same in every way except that the canes are a year older. Curiously enough, too, Venn's Black Muscat, or Muscat Hamburg, which has hardly set a respectable bunch since I got it, has also produced some fine regular bunches that both set and coloured well, and were cut some time since. I have also this season an undoubted example of the scion affecting the stock that may be worth recording. About four years ago I grafted the Duke of Buccleuch Grape on a strong and fertile black Hamburg in the centre of a house of Hamburgs. The Duke produced some small, but well filled bunches the first year, fewer the second year, and this season it showed no fruit at all, though remarkably strong and with plenty of young wood on it. And not only this, but it has apparently turned the lower Black Hamburg, half of the vine all but barren as well, for it has shown fewer and fewer bunches each year since the Duke was put on it, and this season has produced three small imperfect bunches only. All the other vines are carrying an almost excessive crop on each side of it. If I am correct in my surmises, it would seem as if a weak growing vine could be invigorated by grafting a strong growing scion on it as readily as by putting it on to a strong stock. I have never had any faith in using strong growing vines as stocks and confining their use to a root only, but have always inarched half way up a vine, or grown a limb of the stock and another of the scion—agreeing with what the late Mr. Pearson, of Chilwell, said of it, that the root became pretty much what the top made it—and we have had a number of old vines worked on the half-and-half principle in past years. Twenty years ago or thereabout, I remember that the Muscat Hamburg was recommended to be grafted on the Black Hamburg to improve its setting power: as the Grape had a certain reputation at the time the nurserymen took it up, and one firm advertised all their Muscat Hamburgs as worked on the Hamburg root, but I do not think much success attended the speculation.

J. S. W.

### NOTES AND QUESTIONS.

**The Fruit Crops.** We shall be greatly obliged to any of our readers or correspondents who may not have received notice privately if they will send us a few words as to the state of the fruit crops in their neighbourhood in the course of the coming week. Information as regards the sorts that have turned out the best, tested by recent winters would be valuable.

**Red Astrachan Apple.**—I am pleased to observe that this very handsome Apple is so highly prized in America. I have two fine young trees of it here carrying good crops, and as a rule it colours well here. The trees have a very robust habit, wood stout, and leaves dark and leathery. It thrives well in our stiff strong clay, as do many other good kinds. I have that earliest ripening of all Apples, Early Harvest, fruiting fairly well also. It is never a very free bearer, as, like Golden Noble and Yellow Ingestre, it fruits only at the ends of the shoots. It is a sweet and pleasant Apple if eaten when just ripe, but will scarcely keep a week later and soon gets woolly. —A. D.

**Strawberries for Light Soils.**—All Strawberries do best on a good holding and moderately rich soil, but some are better suited than others for light soils. The following named in the order of their ripening will succeed on them, viz., Black Prince, Pioneer, a good prolific variety for early market work, Keen's Seedling, Vicomtesse Héricart de Thury, President, Sir J. Paxton, Unser Fritz, Mr. Radclyffe, and Hélène Glôide. The fruit of the last-named variety is excellent in flavour, but the plants suffer considerably from red spider even when planted out-of-doors. Therefore it cannot be recommended for indoor purposes. Mr. Radclyffe, a late variety, will be found to be more prolific than the British Queen in light soil, and it is nearly equally good in flavour. —R. G.

**Apples Kept in Water.**—Several statements have been recently published of the entire success which has attended the keeping of winter Apples under water. The experiment is worth repeating, observing the precaution of maintaining the temperature nearly down to the freezing point. The advantages of this practice are, first, the exclusion of air currents, and secondly, a temperature not liable to fluctuations or which cannot quickly change. So long as the water can be kept quite cold, the fruit will be likely to remain sound; if too warm, the skin will swell and crack by an over absorption of moisture. Grapes have been successfully kept in the same way, the water remaining near freezing. A damp cellar for fruit on shelves is better than one so dry as to cause shrivelling, provided it is cold. If warm, decay would be likely to commence soon. —Country Gentleman.

**Potting Strawberries.**—There exists a great difference of opinion as to the best sized pot in which to plant in order to secure the largest and most certain crop of early fruit. Small pots get quickly filled with roots, thus inducing the plants, to ripen their crowns early. Hence, before being forced they have the benefit of a much longer resting season than plants kept growing in large pots until a later date. This is a point that should not be overlooked by the advocates of large pots. It is a very good plan to use three different sizes of pots—4-in. ones for the earliest, and 5-in. and 6-in. ones for the second and latest plants, placing only one plant in a pot. By all means pot firmly, but do not resort to the practice of excessive ramming, which is often detrimental to the plants in after stages of growth. Drain well and over the crocks place a layer of fibrous loam or turf. Guard against introducing any kind of stimulant in the shape of dry manures amongst the drainage, which do more harm than good. If soot be used for the prevention of worms, let it be placed over the layer of fibrous loam above the potsherds. No ramming whatever is required until the runner is placed in the pot from the layering size, and only just sufficient compost should be employed to raise the crown of the plant to the required height.



Ramming the portion of soil which rests between the ball of the runner and the potsherds is very apt to disarrange the drainage, and afterwards cause many pots to become water-logged. Leave ample space for water between the surface of the soil and the rim of the pots. Place the plants when potted in a fully exposed position, and when those in the smallest sized pots have completed their growth, they may be removed to a somewhat more sheltered position, or even plunged to prevent them from becoming too dry, and at the same time to diminish the labour of incessant watering. —R. G.

#### SEASONABLE WORK.

**Peaches and Nectarines.**—Trees in early houses from which the fruit has been gathered will well repay careful attention to syringing and ventilation until the blossom buds are properly formed and matured. It will also be necessary to thin out all useless wood, and to stop lateral or foresight growths back to a single leaf. Towards the end of the month the lights, if portable, may be removed for a few weeks to give the old foliage the full benefit of showers and dew, and at the same time to expose the ripening wood to the influence of light and air. Mulch external borders and see that the internal roots do not want for water.

**Succession Houses** in which fruit is ripening may have full air by night and day, and if it be thought desirable to retard some of the fruit, a piece of thin shading may be drawn over the lower parts of the trees for a few hours during the hottest part of the day; but on no account must it be left on through the night. Elevate the fruit in late houses by passing pieces of lath beneath it, and avoid tying the shoots down too close to the trellis until after the stoning process is complete. In dark old-fashioned houses this advice may be modified; but under modern roofs slight shade from the young growths conduces to the rapid and even swelling of the fruit. If well made and drained inside borders cannot easily be over-watered.

**Melons.**—Where late Melons are in request seeds of free-bearing, hardy kinds may still be sown. Cox's Golden Gem and Gilbert's History of Bath answer well, and produce the best flavoured fruit when grown in pots plunged in a bottom heat which can be maintained at 90° through the last stages of swelling and ripening. Strong plants for fruiting in September may be planted out in pits or frames where they can have the benefit of good linings, or, better still, warmth from a hot-water pipe when days decrease in length and nights become cold. The soil best adapted for late crops is a strong loam to which old lime, rubble, or charcoal may be added. Rich manure should be avoided, but warm stimulating liquid may be used for watering the roots and damping all available surfaces after the fruit is set.

**Cherries.**—These easily excited trees should always be grown in a house composed of portable lights which can be removed as soon as the fruit is gathered. Early forced trees require good syringing to keep them free from spider, and mulching with short manure to keep the surface roots healthy and active until the foliage is ripe. If late kinds in pots require potting, the operation may be performed at once, when the trees may be kept indoors until the roots have taken to the soil. When potting is not needed remove at once to an open, airy place out of doors. Mulch with good rotten manure and screen the pots from the drying influence of sun and wind.

**Hardy Fruits.**—The light crops which many of the trees are carrying will favour the production of a great number of vigorous growths from the centres and extremities, and as these, if left too long undisturbed, are calculated to weaken and prevent the perfect ripening of the blossom buds, constant thinning and shortening back must be kept well in hand. Trees of all kinds growing against walls should not be allowed to carry more young wood than is absolutely required for the production of next year's crop; and after properly cleansing from insects, they should be neatly tied or nailed in. Peaches and Nectarines are carrying good crops of fruit which promise to be fine. To keep them free from spider and to encourage the spread of surface roots, a good mulching of stout manure laid on the borders, copious watering, and occasional washing with the hose will be necessary, as fine full flavoured fruit cannot be obtained from trees that are infested with insects. Trees that were grafted in March will now require attention to staking to prevent injury from wind and rain. When this has been done the ligature may be cut or untied, and all gross shoots which enumerate from the stocks shortened back. To keep a supply of fine Strawberries old beds should be broken up and a corresponding breadth of deeply trenched and heavily manured ground planted annually with runners from maiden plants. August is the best month for planting, and each plant should have a liberal supply of new calcareous loam. W. COLEMAN.

Eastnor Castle.

AN observant contemporary states that whenever a newspaper says a kind word of a man, that man never discovers the favour; but if a newspaper handles a man a little roughly, the man finds it out by eight o'clock next morning. This kind of a man is he who, when conferring with the editor upon his grievance, says his

"attention has been called" to the article in question.

#### WILD BIRDS.

THE new or rather the amended Wild Birds Protection Act being now in full force, it may be well (says a writer in the *Standard*) to pass in review some of the birds so protected. Looking over the list of those specially referred to in the schedule, it seems odd that so many which are truly useful are omitted, whilst others are very indefinitely described, making it a puzzle to identify them by the names under which they are catalogued. Take "the owl," for instance. In the schedule it is put down only as "owl." What does that mean? Does it include the whole family of owls, from the noble-looking eagle owl down to the lesser owl? or does it mean only the white, tawny, or barn owl? Yet with all its shortcomings every one will admit that the Act is good, which prevents persons from killing or taking old birds in the breeding season. It is good from a moral point of view. It keeps the young in the nest from being deprived of their parents.

**The Barn Owl.**—Useful as this bird is, I am sorry to say that there are few land birds that suffer more on account of their beauty. Bird-stuffers especially destroy scores of them, killed simply for the reason that they sell readily when stuffed and put into glass cases, and because there is a great demand for their wings for fans, fire screens, or trimming for ladies' hats or bonnets. Who that has watched the barn owl in the twilight of a summer evening, as it silently glides through the air in search of its legitimate prey—rats and mice—but would at once try to preserve as many of them as possible about his premises? The good they do, especially at the breeding season, is indeed great. A gamekeeper found an owl's nest with only a single young one in it. He visited the nest for thirty consecutive mornings, and in that time he removed from it one hundred and five rats, forty-nine mice, eleven shrew mice, two robins, and one sparrow. This was what was over and above what the owl needed for its own consumption. Taking the rats only, the bird had evidently earned its living well, for many persons will gladly give threepence a head for the death of a full-grown rat, so destructive are they; so these owls, in thirty days, had more than saved the outlay of twenty-five shillings and threepence to the rat-catcher alone, independently of mice, &c. One almost wonders how it is that the barn owl's life is not entirely protected by the State. In fact, the bird has derived one of its names on account of its frequenting barns for the purpose of catching rats and mice which infest such places for the sake of the grain generally stored there. In many parts of Kent and Sussex there used to be holes made in the barns, granaries, and also in the roofing of the old farmhouses, for the ingress and egress of barn owls, and if they would only breed there it was considered a good omen. Yet now an Act of Parliament is considered necessary to protect it from slaughter.

**The Starling.** I find, is not in the schedule. It is admitted that his presence is not much wished for near a Cherry orchard during the time of ripening; but, apart from this love of Cherries, he does an incredible amount of good, and although I am a fruit grower, I have had holes made about my house and outbuildings, and boxes put up purposely for starlings to breed in. Some time ago I had two nest places made close to a window where I was in the habit of sitting. The holes were made at six in the evening, and at seven next morning the starlings began to build in them. After the usual time of the birds sitting the young were hatched, and then I had the pleasure of observing the parent birds. They were up and about soon after four in the morning, commencing the day with chattering and whistling and other queer noises. Then, after a brief space, they went forth to breakfast. At six they began to feed their young. I noticed they were seldom gone more than a minute, the fullest extent being two, ere they returned with a grub in their beaks

—sometimes more. Their nest being but 3 ft. from the window, I could discern that many of these grubs were those of the Daddy Long-legs (*Tipula oleracea*). There were mostly secured from the meadow close by, and, thanks to the starlings, my Grass grew abundantly. Sometimes the yellow Cabbage butterfly was brought, and this went on for hours; then a little rest and more chattering and whistling, then again to feeding, which involved more grub and insect gathering for their little ones. In all cases I found the feeding of the young ended very nearly if not quite about six in the evening. The old birds then would plume themselves, give more whistling and chattering, and then go to rest a little while before dark. One curious fact I have noticed, which is that when the young birds can all fly well they entirely disappear from the neighbourhood with the old ones, and invariably return and visit their nesting places again in September. In only one instance in all my experience of years of observation have I ever known them to bring any fruit, and that once was a Cherry, but not from my own trees, for I saw the robber bring it from a distance, and they never touched either my Plum or my Currant trees. It is delightful to watch the tactics of a flock, or rather a pack, of starlings in a meadow and note how curiously they feed, the hind ones continually flying to the front, by which means they can observe the holes of the insects in the ground, from which their sharp-pointed beaks quickly draw forth the occupants. I look on starlings as some of the very best friends I have.

**The Song Thrush** is another. I do all I can to get as many of these about my grounds as possible. I feed them in the winter, and I protect their nests in the summer; but it is a delicate bird, and, feeding as it does on insects such as snails, worms, grubs, &c., not many can live in one spot, as there is not food enough, so they are driven off by their own species beyond a certain radius. Where thrushes abound you may be sure there are plenty of worms, grubs, and snails to be got. So look on them kindly and indulgently as friends working for you, though they do eat a little fruit such as Currants and Strawberries (which you can net) when the weather is dry—for if moist or wet they generally prefer insects, as does also

**The Blackbird**, though, save for his melodious song, he is not such a favourite with me as the thrush, as he makes sad havoc amongst the fruit, especially the Apples and Pears, pecking small holes first in one, then in another, spoiling many before they are ripe, and in dry weather he does more mischief to the Plums than the Apples. These birds will also clear a large Cherry tree in two or three mornings if not scared from it in some way. I have found that red, yellow, and blue rags, feathers, looking-glass, and other scares only answer for a few days, the birds rapidly getting used to them. They heed them so little that they sit in the trees eating the fruit, evincing a perfect contempt for the gorgeous flickerings about them.

**The Cuckoo** eats insects, and is of particular service with regard to the Gooseberry caterpillar, which he frequents the gardens to secure, and is the only bird that I know of that has a particular fancy that way. Here I may mention that, although a garden may have many varieties of insect-eating birds within its boundaries, yet they may not feed on those particular insects which are doing the most damage. Insect-feeding birds do not feed on every kind of insect that falls in their way. Few birds, for instance, will eat a hairy caterpillar, and I know of none that feed on those that enclose themselves in groups in a kind of web, such as are found on Apple trees, and which denude them often of every leaf. Each bird has its particular food, and, as a rule, does not depart from it, unless driven to do so by hunger or thirst. Many a time have I watched

**The Blue-tits** among the Apple and Plum trees in winter, searching here and there, above and below, hanging head downwards with



observing eye for any larvæ about or around the buds. How quickly, when found, are their sharp-pointed beaks inserted, and then what would have been a caterpillar destructive to the tree is itself destroyed. For my part I feel I never have too many blue-tits, cole-tits, and marsh-tits, and yet in the autumn, if the weather is hot and dry, these good friends of mine peck little holes in the Pears just by the stem, and so spoil some fruit; but I reflect that this fruit, and many others, would not have had an existence, possibly, had it not been for the insect-searching eyes of those self-same little beauties, the tits. I have never known them destroy blossom buds of the fruit trees, like

**The Bullfinch;** but even these, as a slight reparation, feed their young with caterpillars.

**Rooks.**—Often have I placed myself in jeopardy of being "locked up" for trespassing by getting over hedges and invading fields belonging to others, from seeing a dead rook hanging by the leg from a pole as a warning to other rooks not to come there. I have run this risk for the purpose of seeing what the bird's crop contained, and in no case as yet have I found any grain, but only worms and grubs. It is my belief that they often are really doing much good at a time they are supposed to be doing much harm. A case illustrating this came to my knowledge. A farmer I knew living near the South Downs had a certain newly seed-sown field. In one part of the field the rooks were busy at work. They rose on seeing my friend, and one, unfortunately for the rook, came near. He, having a gun, shot it. On his going to pick up the body he found that three wire worms had just crawled from its beak. He then opened the crop of the dead bird, and found several more wire worms, besides grubs. "Well," said I, "what did you then?" "Why," he replied, "I allowed the rooks to have their own way." Rooks do an enormous amount of good by eating the grubs of the cockchafer, and from my own examination of the crops of their young I found they were fed almost entirely on worms (and worms destroy the fertility of the soil, as any one can easily learn for himself if he tries to grow plants in mould formed entirely of worm casts). These young rooks are generally shot for sport at the very time they are and would be of the most benefit. Out of thirty-two young rooks whose crops I examined, I did not find in one a grain of any sort.

**The Kestrel** is another bird of great service in destroying mice, young rats, and large insects, such as cockchafers, &c.; yet no sooner does one appear than every endeavour is made to shoot it. It seems to me a grave omission that the blackcap warbler was not put into the schedule of reserved birds, as it is one the bird-catchers like to get. It sells well, and is a sweet singer—in some parts being called the mock nightingale. And I for one should have been glad to have seen most of the warblers included; indeed, I feel astonished that so very few birds are selected, though they appear more than they really are, on account of so many local names being appended. Still, to my joy, I find the Act strives to preserve the nightingales, whose numbers for some years have been decreasing in this neighbourhood, only one singing in the adjoining woods last spring. The difference in this is great, for I have counted as many as nine warbling in delightful harmony at one time.

"EPIGRAM on the Burser (*sic*) of St. John's College, Oxon, cutting down a fine row of trees." Such (says a correspondent of *Notes and Queries*) is the heading of the well-known epigram in "A Collection of Epigrams," London, 1735, second edition, small 8vo, where it is printed as follows, Epigram lvii.:

Indulgent Nature to each kind bestows  
A secret instinct to discern its foes:  
The goose, a silly bird, avoids the fox;  
Lambs fly from wolves; and sailors steer from rocks;  
A rogue the gallows, as his fate, foresees,  
And bears the like antipathy to trees.

#### CHARLES M. HOVEY.

MR. CHARLES M. HOVEY, of Boston, or Cambridge rather, is almost as well known in this country as in America, and therefore we have thought it desirable to reproduce a portrait of him which recently appeared in the *Rural New Yorker*. Mr. Hovey has been long a devoted horticulturist, and, though now in his seventy-first year, he is as hale and hearty and as energetic as ever he was. When we first knew him, some thirty years ago, he was proprietor and editor of a monthly periodical called the *Magazine of Horticulture*, a work which he successfully conducted for more than thirty years. When but fifteen years of age he

with Pear and other trees, and extensive glass houses were erected. Until this time the cultivation and improvement of greenhouse and hardy ornamental plants chiefly occupied his attention, but with greater convenience fruit trees and ornamental trees came in for a vigorous share. Fired by love of his avocation as well as commercial enterprise, he visited Europe in 1844, and bought in the English, Scotch, French, and Belgian nurseries such ornamental trees and shrubs—two or more of a kind—as he thought would be hardy and of use in New England. About 20 per cent. perished in their passage hither; 50 per cent. of the whole succumbed within a year or two, and of the



Charles M. Hovey.

began gardening for pleasure, his father's ample garden affording him room enough for his gratification. When between sixteen and seventeen he had gathered together a goodly collection of Hyacinths, Tulips, Ranunculuses, and other bulbs and plants, and with borrowed tools built a small greenhouse. In this work he was assisted by his elder brother, who is still associated with him. And thus by love and application they proceeded and succeeded in their work, and by economy, exchange, and purchase increased the variety of their stock till they laid the foundation of a famous nursery and seed business. In 1840 the present nursery ground in East Cambridge was bought; it was then a 40-acre piece of wild woodland. The woods were cleared; it was cut up into squares and avenued

remainder a goodly number, proving unworthy of cultivation, were rooted out and destroyed; but of the collection then begun there are in his nursery now some 175 specimens from 10 ft. to 60 ft. in height.

During his whole career the hybridisation of plants has been with him a favourite work, and by this means he has secured some very fine results, especially among Camellias. He began the hybridisation of Camellias in 1835. For the pistillate parent he used Waratah, which has red, cockade-like flowers, and for the staminate ones such of the best doubles as he could get pollen from. All of the first lot of seedlings showed imperfect flower centres, but there was one among them of good form and whose petals were beautifully rounded without any of the



characteristic indention of the end; therefore this one was selected as a pistillate parent and the others were discarded; the staminate plants as before were the best doubles. From this second crossing were obtained all of Hovey's fine Camellias that have lately figured so conspicuously in America and in Europe. Among them are Mrs. Anne Marie Hovey, white, striped and blush-pink, and for which a first-class certificate was awarded by the London Royal Horticultural Society in 1879, and a prospective prize of \$60 by the Mass. Hort. Society, also in 1879; C. H. Hovey, almost the colour of a General Jacquemint Rose, and for which was awarded a first-class certificate by the L. R. H. S., and C. M. Hovey, scarlet, not unlike the colour of the bracts of *Poinsettia pulcherrima*, and for which the Mass. Hort. Society awarded its large gold medal in 1854. The above mentioned awards are the highest honours conferred by the Mass. Hort. Society. In the spring of 1879, with true American enterprise, Mr. Hovey shipped a large quantity of Camellias to England, himself accompanying them. They were then bursting into blossom. He exhibited them in London, where they were bought readily.

In 1838 he hybridised some Indian Azaleas, and from the seeds raised America, Suzette, Alba crispiflora, and others. In 1845 he began the hybridisation of Japanese Lilies, and as the result secured Melpomene, Terpsichore, Thalia, Polyhymnia, Clio, and others, all pretty forms of *L. speciosum*. Many fine sorts of Verbenas, Phloxes, Pelargoniums, Pansies, Carnations, and the like were also raised about this date, but most of them have now given place to better sorts. But Pelargoniums Cambridge Pet, Dolly Dutton, and Commodore Nutt are still favourites in cultivation. Epiphyllum C. M. Hovey, glowing violet and red, is also a hybrid by Mr. Hovey. Of this we hope soon to give a coloured plate.

In 1833, by means of hybridisation, he secured the Strawberry seeds from which, in the following year, he raised Boston Pine and Hovey's Seeding, the last named still one of the finest of American Strawberries. After several years' trial the Mass. Hort. Society awarded it a prize valued at \$50. From the time it was first exhibited for twenty consecutive years it was awarded the first prize for the best two quarts of any kind of Strawberry; and later, in 1877 and 1880, for the best four quarts. In 1855 he raised the Hovey Cherry from seed, a kind which Mr. Downing states is "vigorous, productive, and very good." He has also introduced the Sheldon, Dana's Hovey, and other Pears. In 1844 he began to make a collection of all the kinds of Cherry, Plum, Peach, Apple, and Pear trees to be obtained, numbering over 1500, and which were fruited and proved, and many of them described in the *Magazine of Horticulture*. In 1860 he raised Thuja Hovey from seed, and five years later a variegated leaved form of *Magnolia acuminata*.

In 1848 he began the publication of the "Fruits of America," of which two volumes and three numbers—in all 27 numbers—were issued. This is a beautiful work; each number contains four coloured plates of fruits, together with woodcut illustrations of the trees. These woodcuts are claimed to be exact copies of the trees and in order to have them positively correct, Mr. Hovey not only made the sketches himself, but also drew most of them on the blocks. It is much to be regretted that the spirit, energy, and talent that began such an exhaustless work could not find it convenient to continue it.

For the past forty-eight years Mr. Hovey has been an active member of the Mass. Hort.

Society, and president of the same in 1863-1866 inclusive. It was during his administration that the present Horticultural Hall, so spacious and magnificent and so centrally situated, was erected, and great credit is due to him for the untiring energy which he displayed in riveting the influence required to build this edifice.

Mr. Hovey, in short, is in himself a horticultural encyclopædia. No matter what branch of horticulture is advanced, he is familiar with it, its nature, and its history. His long and close practical experience, his retentive memory, apt expression, and lucidity and frankness render him an agreeable companion, a fact-instilling teacher and a man with whom time is never lost, but, on the contrary, always well and profitably spent.

## NOTES OF THE WEEK.

**Campanula turbinata alba.**—A good white form of this excellent rock plant comes from Messrs. Dicksons & Co., of Edinburgh.

**Hesperaloe yuccæfolia.**—This rare American plant is now, we understand, in flower in the Hale Farm Nursery, Tottenham.

**The Rosy Yarrow.**—The deep crimson rose variety of *Achillea Millefolium* is a pretty plant in a cut state, and it will grow in any corner. A good form from Mr. Jackson.

**A Garden Picture.**—Mr. Frank Miles' picture will be on view during the next week at Messrs. Agnew's, New Bond Street. Anyone will be admitted on presentation of card.

**Carnations at Slough.**—We hear there is a large house of the finer Carnations and Picotees in Mr. Turner's nursery at Slough that is well worth seeing.

**Lychnis Haageana.**—The white and the deep red forms of this, coming from Cheshire from Mr. Wolley Dod, are much fresher than they are in the southern counties; they never seemed to us quite satisfactory as garden plants.

**Double White Sneezewort** (*Achillea Ptarmica* fl.-pl.) comes amongst the many cut flowers of the season. One of the perennials worth growing for cutting if not for other reasons.

**Dracocephalum Ruyschiana.**—This pretty blue Salvia-like flower, which seems to bloom sparsely about London, comes in free blossom from Edge Hill, as if the western colder and wetter country suited it better than the south.

**The Common Balm.**—Colonel Stuart Wortley tells us how well this pleasant old plant keeps in a room. It grows freely in some small glasses in which a few of the tips of its shoots were placed with Violets and Pansies.

**Improved Virginian Stock.**—Two high coloured forms of this old favourite come to us from Messrs. Carter, both good. We hope the old types will not disappear in the march of "improvement."

**Pansy the Comet.**—We have received this fancy Pansy from Messrs. Dicksons & Co., Edinburgh. The flowers are large, of a deep golden yellow, with dark velvet, reddish-brown centres, and are very handsome.

**Moneywort** (*Lysimachia Nummularia*).—In the dismal enclosures called gardens in the suburbs of London this is now the most graceful plant in flower. It arranges itself falling gracefully from the edges of vases or raised beds or creeping about on the ground.

**Fuchsias at Kew.**—The suitability of Fuchsias for covering roofs is well illustrated in the greenhouse (No. 4), many of them being really charming, but the best are the small flowered elegant-habited kinds, such as *virgata*, *gracilis*, and *gracilis variegata*.

**Hablitzia tamnoides.**—This is one of those plants that if placed in a border has a rather untidy appearance, but which if placed at the base of a tree, so that the slender stems can cling to the trunk and develop its large head of feathery green blossoms, has a good effect. This is the way in which Mr. Joad treats it, and every one admires it. It is nearly allied to the Black Bryony.

**Double Potentillas.**—We have a showy series of these from Mr. Vertegans, of the Chad Valley Nurseries, Birmingham, who is making a splendid beginning in the culture of hardy flowers. He also sends a flower of the double yellow Marguerite Etoile d'Or, which, however, is not in a condition to speak of its merits.

**Ioichroma Tonelliana.**—This, like the other species, is a very pretty greenhouse plant now, but too seldom met with in cultivation. It has foliage similar to that of a *Habrothamnus*, and bears drooping clusters of tubular flowers about 1½ in. in length, of a bright violet-purple. It is apparently of easy culture in an ordinary greenhouse. It is in flower at Oakfield, Wimbledon Park.

**Yellow Stonecrop in Lines.**—A fine effect may be obtained by this common British plant (*Sedum acre*) if planted in a thick row and allowed to remain undisturbed. At the Victoria Nursery, Upper Holloway, there is a long line of it, 1 ft. or more in breadth, now a mass of golden yellow. This line skirts the entrance road, and, viewed lengthwise, is uncommonly effective.

**Elæocarpus cyaneus.**—This is in flower in the temperate house, and from the fact of a small plant some 18 in. high blooming profusely, it would seem to be very suitable for the conservatory. The leaves are ovate and some 2 in. long; the blossoms remind one strongly of those of the Snowdrop tree (*Halesia tetraptera*), and, like them, are of a pure white, but at the same time beautifully fringed.

**Cape Pelargoniums.**—In the cool compartment of the T range at Kew there is a good collection of these, the depth of colouring in some, such as *Schotti*, *flexuosum*, and *ardens superbum*, suggesting the desirability of returning to some of the older forms for purposes of hybridisation. At present the attention of hybridisers seems to be centred in the raising of flowers from existing varieties instead of attempting to strike out a new path.

**Eucalyptus Gunni.**—Although the past winter wrought such havoc among many things, the large plant of *Eucalyptus Gunni* near the pond in the Botanic Garden at Kew, which at first appeared dead, is now breaking freely, even to the summit; and as the same thing may be noticed in many other cases we may hope that the lists of deaths reported from various places, and published early in the season, may now be somewhat shortened.

**Clematis coccinea**, lately figured in THE GARDEN, is in flower in the temperate house at Kew, and in the dell near the flagstaff I found C. Pitcheri with a couple of blossoms expanded. This, judging from these two flowers, cannot be compared as regards beauty with the Scarlet Clematis, the flowers being a greyish blue and not more than ½ in. long, while those of C. coccinea are larger, and of that beautiful colour represented on the plate.

**Creeping Mimulus** (*M. repens*).—Quite distinct from ordinary kinds of *Mimulus* is the little plant bearing this name. It has tiny leaves of fleshy texture, and flowers large for the size of the plant, of a pretty purple colour spotted with a darker hue. It does not grow more than 2 in. or 3 in. in height. Another singular species is *M. primuloides*, which is even more unlike an ordinary *Mimulus* than that just named. Its flowers are yellow and small, but the leaves are broad like those of a *Primula*.



**Spiræa palmata.** Some of the finest specimens we have seen of this beautiful hardy flower are now in full bloom in Messrs. Veitch's Combe Wood Nursery, Kingston Hill. On one plant there are quite a hundred spikes of deep rosy flowers, a beautiful sight.

**A Yellow Snapdragon.** How much better many of the clear colours are than the parti-coloured and speckled varieties one generally sees! The colour of this is a soft lemon yellow, deeper towards the lip, and with a white throat. There is more in the Snapdragon than the usual "mixture" of speckled forms tells of.

**A Garden Party of Gardeners at Cauntton.**—The garden party of gardeners was, as I hoped, a real gladness to us all, and I think we each of us imparted or received some hints which we shall realise to our profit. The King of Spades, the Duke's gardener, fraternised with the Ace. The single-handed man and the grand old gardener himself must have smiled upon his happy children.—S. REYNOLDS HOLE.

**Alexandra Palace Rose Show.**—The annual Rose Show, held at this place, was, as usual, very successful. It was specially remarkable for the exceptional style of arrangement of the Roses in several of the larger classes, and which on the whole was effective. As the majority of the exhibitors showed so recently at the National Rose Society's exhibition, we need not do more on this occasion than give a full list of the prize-takers, which will be found in our advertising columns.

**A Line from the Upper Thames.**—I started from Oxford on Monday, and had two glorious days of sunshine and flowers. The river is beautiful with white and yellow Lilies, the leaves of the Villarsia (I saw no flowers on it), the little floating white blossoms of the Ranunculus and pink Potamogeton spikes; and the banks are covered with Forget-me-nots and Meadow Sweet, *Thalictrum flavum*, yellow Loosestrife, and a yellow Cress, the name of which I do not know. *Vicia crocea*, too, was very fine in places.—P.

**Scarlet Clematis** (*C. coccinea*).—By far the finest form of this Texan species we have yet seen is now in flower in the temperate house at Kew. The flowers are upwards of 1 in. in length and broad in proportion, and the colour deep red—in fact, the nearest approach we have seen to the colour of the American drawing from which the plate we published in THE GARDEN some time ago was prepared. Mr. Joad has the plant thriving and flowering very satisfactorily in his garden, planted out against a south wall. The colour of the flowers of his plant is also very dark.

**Boykinia aconitifolia.**—This is a North American hardy perennial plant nearly allied to the Saxifrages. It has a dense tuft of root leaves somewhat resembling those of the Aconitum, and tall stems furnished with blossoms about the size of a threepenny-piece. Being pure white and produced rather plentifully in loose clusters, the plant is quite worthy of a place in our gardens. A plant of it in the Oakfield collection has grown to a large size in a rather shady position, and is now in flower.

**Tall Cacti.**—The finer flowering Cacti, for which prizes used to be offered by the Royal Horticultural Society, and which were so showy in days gone by on the exhibition benches at Chiswick seem to have disappeared from our shows. This is to be regretted, for more effective plants than *Cereus speciosissimus*, *Epiphyllum speciosum*, *E. Ackermannii*, *E. aurantiacum*, *E. Jenkinsonii*, and others of that class that used to be so well shown by the late Mr. Green and others, it would be difficult to find. Let us hope that they may again become common.

**Lathyrus rotundifolius.**—This Everlasting Pea, now in flower in a few gardens about London, is one of the prettiest and most distinct of all the species on account of the peculiar flesh-red colour of the blossoms. It is similar in habit of growth to the common *L. latifolius*,

and the flowers are produced plentifully in the same dense clusters on long slender stalks. With Mr. Joad it is now very finely in flower, and in one place where he has it rambling over some shrubs in its own wild way it forms an uncommonly pretty picture.

**Fine Basket Plant.**—Rarely has such a finely grown basket plant come under our notice as one which we saw the other day at Messrs. Laing's nursery at Forest Hill. The plant is a *Begonia* identical with that named at Kew, *B. glaucophylla splendens*, and has glossy green leaves of medium size and long slender stems, which in this instance drooped on all sides of the basket for about 5 ft. or 6 ft.—quite a floral sight. The blossoms, which are bright red, hang in graceful profusion in loose clusters from the axils of the leaves.

**Rondeletia anomala.**—Most gardeners are acquainted with and fully appreciate the old *R. speciosa* and other commoner kinds, but this one is as yet uncommon, though extremely beautiful, especially as a basket plant. The branches are slender and have a tendency to droop, and each bears at its tips compact clusters of deep red blossoms, with a small yellow centre. We lately saw a plant of it in a suspended basket in one of the stoves in Mr. Joad's garden, at Wimbledon, and we recommend those who do not possess it to give it a trial.

**Fortune's Privet** (*Ligustrum Fortunei*) is now thickly clothed with its plumes of showy white flowers at Kew, and at the side of the Sion Vista, near the Palm House, are two plants of *Sambucus racemosa*, some of the branches of which are bending beneath the weight of their highly coloured berries. The soil in which these plants are growing is stiff and wet, water lying on the surface but a short distance off during winter, so that the roots are kept cool and moist, conditions necessary to their well doing, as some planted in lighter and dryer soil have died.

**Wahlenbergia dalmatica.**—This pretty alpine flower is generally planted upon a rockery and exceptional care bestowed upon it, but that it will thrive in any ordinary border, and without particular attention, is shown by the fine plant of it now in flower in the Campanula bed in the herbaceous ground at Kew. This is a spreading tuft, each shoot being terminated by a dense cluster of erect bell-shaped flowers of a bluish-purple hue. The soil in which it is growing is of a light sandy character, and a few years since was well enriched with manure, which no doubt accounts for the unusually fine growth of all the Campanulas in this bed.

**Fine Hardy Orchis** (*O. sesquipedalis*).—The now rather common *O. foliosa* is a fine plant and should have a place in every garden, but *O. sesquipedalis* is a far handsomer plant. It is a variety of *O. latifolia*, and as yet seems to be little known, as we have never met with the true plant anywhere else but at Kew, where we saw it the other day in flower on the old rockery. It grows about 1½ ft. high, and the stem for fully a third of its length is furnished with densely-arranged flowers of large size and of a purplish-violet hue. We have seen a near approach to this fine variety in the Tottenham Nurseries, which, perhaps, if better grown would be as fine.

**Rare Greek Plants.**—In Mr. Joad's collection of hardy plants, so rich in European species, there are some pretty Greek plants that are probably unique in this country. Among these is *Dianthus cinnabarinus*, which grows about 1 ft. high, and has slender stems terminated by dense clusters of flowers as large as a shilling. Their colour is most peculiar, being a kind of cinnabar red hue, a colour almost unique among garden plants. *Campanula tomentosa* is a very distinct species. It is apparently a dwarf grower, with hoary leaves crowded on short erect stems. The flowers terminate the stems in a cluster, and are a pale purplish mauve. *Centaurea ferox*, so named on account of the spiny involucral bracts, is a showy plant that deserves

general cultivation. The flower-heads are large, the colour pale pink, which in contrast with the fawn-coloured bracts has a pretty effect. The plant grows between 1 ft. and 2 ft. in height, and forms a bushy symmetrical specimen if planted in an open position.

**Crambe palmata.**—As single specimens on a lawn there are few nobler objects than well grown plants of this Crucifer, which is now in flower. It has root leaves of huge dimensions spreading in all directions, while the flower-stems form a large symmetrical bush of white blossoms about 5 ft. in height. Being not at all fastidious as to soil and position, it is a capital subject for planting in many situations, but it looks best in an open place adjacent to a shrubbery or some similar situation. It is used with good effect in Battersea Park, where there are some fair-sized plants of it on a part of the lawns, but the finest we have seen is in the Oakfield collection, Wimbledon Park.

**Primula floribunda.**—This *Primula* is now in blossom in the Edinburgh Botanic Garden, Edinburgh. Its flowers are as bright a yellow as those of *P. verticillata*, but smaller, and, like the latter, they grow in an umbel, but each flower is erect. The leaves are wrinkled and hairy, but not mealy. The plants were raised from seed sent last year from the north of India. They are as yet too small for it to be easy to tell what their size will be when full grown. It is an excellent addition to the many beautiful Indian Primroses in cultivation, and will be all the more so if it proves to be hardy; as yet it has of course been grown under glass. It was found in quantity at an elevation of 4000 ft.—C. M. O.

**The White Cup** (*Nierembergia rivularis*).—This pretty trailer has the reputation of being somewhat miffy when under cultivation, but, as in the case of many other rather rare plants, it is apt to be coddled too much. That it is indifferent as to any particular soil or position is obvious, as we have lately seen instances of its thriving under very diverse circumstances. In one place it was planted in a moist, peaty border, in fact an artificial bog; in the other it was growing in a dry soil on an exposed rockery. Both were fine spreading tufts, and as we saw them were perfect sheets of bloom. Few alpine plants are prettier than this when well grown, and it certainly deserves to be tried in every garden.

**Incarvillea Olga.**—This is the name of a new shrub now in flower in No. 7 house at Kew. It is a Bignoniaceous plant which in form and size of the flowers much resembles the hardy *Tecoma*. The branches are slender, woody, and quite erect, and furnished with numerous finely cut leaves. The flowers are produced in loose clusters terminating the stems; they are about 1½ across and of a soft rosy purple colour. It is a highly attractive shrub, and its value is enhanced by its hardiness, as it is said to withstand our climate without protection, and we believe plants of it have, unprotected at Kew, passed the winter uninjured. Probably our correspondent Herr Max Leichtlin can tell us more about it, he having had experience in its culture.

**A Pink from Exeter.**—I send you here-with flowers of *Dianthus* Napoleon III., which with me has proved to be the best and brightest of its class. At one time I had over a hundred in a bed, each plant having from four to six spikes of bloom, and the effect was most striking. I have looked regularly through THE GARDEN to see whether it had been noticed by any of your correspondents, but from the fact of its not having been mentioned, I suppose others may not have succeeded so well with it as I have done.—ROBERT T. VEITCH, *Exeter*. [A brilliant many-flowered Pink, at first sight looking like a small Clove Carnation.—ED.]

**Two Noble Hardy Plants.**—Among the handsomest leaved, hardy herbaceous perennials we have seen are two species of *Ligularia*, a genus of Composites. These are *L. thyrsoides* and *L. macrophylla*. The former grows 6 ft. or 8 ft. high, and



has roundish leaves, heart-shaped at the base, and about 1 ft. across. It has a spreading habit of growth, and forms a noble specimen when planted in an isolated position. The other plant is totally distinct in habit. The root leaves are like huge Cauliflower leaves, and like them covered with a glaucous hue, and they stand erect from the base. The flower-stem rises from 4 ft. to 5 ft. high, stout and erect, and furnished at the top with a dense cluster of yellow flowers. There are some fine examples of both plants in Mr. Joad's garden at Oakfield, Wimbledon Park, where, along with other larger growing plants, they produce a fine effect in a part of the garden specially set apart for them.

## NOTES AND READINGS.

I have read with interest Mr. Berry's contribution to THE GARDEN on the subject of gardening among the Grass. The Foxgloves are fine subjects for the purpose. Indeed, all strong-growing herbaceous plants that push tall and erect flower-spikes that do not require the support of stakes will be found suitable for this style of gardening after the Grass has begun to grow. In spring, when the Grass is short, all kinds of bulbs do well, and not a few other species of spring-flowering subjects that mature their foliage early; but for a later display the plants must be taller and stiffer. The various kinds of Iris will, I think, be found very valuable for the purpose, and they have the reputation of being one of the last things rabbits will eat. I have seen both the blue and the yellow kinds throwing their fine flowers quite above the tallest Grass this season and looking beautiful, the blades at the same time making vigorous growth. The Iris and Pæony are a host in themselves.

The great obstruction to this kind of gardening at the present time is the cost of roots. Daffodils and suchlike are not dear, but other herbaceous subjects become expensive when wanted in quantity for such purposes. In the Grass they must be planted in broad masses, and it will be time enough to furnish woods and drives when our pleasure grounds proper have been stocked. It is here the experiment must be made first, and there is plenty of room for it in the bye-paths of the garden. Tall Lupines will hold their own well; Delphiniums are apt to fall over. The Tritoma also succeeds freely; Phloxes, too, are likely subjects, and a tall red species of Rocket I have no name for at present grows perfectly rampant in the roughest thicket, producing sheets of bloom. Let any of your readers try a few of these to begin with, taking care to put in good roots at the first, and the result will be such as to convince them of the possibilities in that direction.

Of course gardeners cannot work the scythe or the lawn mower except at stated seasons in such plantations. They must be satisfied by seeing the flowers growing among the Grass. To those accustomed to trim and formal beds only, the idea may not commend itself. It is difficult to shake off prejudices of long standing, but to numbers of people such informal gardening has many attractions, and it is to those who derive pleasure from it that we must look for its extension and examples of its worth.

The late Clematis exhibition was no doubt interesting to many. The history of the Clematis has been a rather remarkable one. It is but a few years, comparatively speaking, since Jackman was produced, and since that time the Clematises may be said to have become

popular, adorning alike the walls of the mansion and the cottage. They should be so far trained as to cover a wall, top and sides, after which all the attention the plants should receive annually is a close heading in. In summer they produce a perfect mass of flower.

It must have been inadvertently that those instructions for "dressing" Carnations and Picotees crept into THE GARDEN last week in which the pupil is directed to get his tools from Sheffield, and having his flowers ready, to pull them about in such a fashion with his tweezers, as will satisfy the scrutiny of those judges of florists' flowers who have studied the business so long. The "dressing" business appears to be the whole secret of the matter; for, given an ordinary fair flower, by "pulling the petals out to their fullest extent and arranging them in a circle," &c., not omitting to "pull out such petals as do not please," the operator may produce a prize bloom on the shortest notice; only take note that "any other perfect petals substituted for the bad ones would instantly and infallibly disqualify." It was a disregard of this last rule, it will be remembered, that brought down the wrath of all the righteous florists upon the head of the unfortunate exhibitor, at Liverpool, who did not pull out the bad ones only, but put better ones in, and so cleverly was it done that he all but deceived competent judges. That man was wronged if ever any man was, for his action was the true and logical outcome of the principle laid down broadly and distinctly by "Girofle." If one florist may pull bad petals out, surely another may stick good ones in! It was most assuredly a narrow spirit that awarded censure to the Liverpool Chrysanthemum exhibitor instead of the medal of the Society—he lived before his time did that man.

Bush Morello Cherries, as suggested by "J. G.," is not a bad idea. The advantages of the Mahaleb stock for dwarfing purposes are not quite so well understood as those of the Quince and Paradise. The Mahaleb is not itself of a particularly dwarf habit, but it is said to be fertile, and the best stock for Morellos, the May Duke, and other small-leaved Cherries. The stock is not in very common use in this country, but Mr. Rivers used, we believe, to employ it to a considerable extent for grafting purposes. Fruitful Cherry bushes, like Gooseberries and Currants, would be convenient, but even on the Mahaleb they could not be confined to that size without curtailment by the knife.

Prominence is given to the Elm as an ornamental park tree in the report of Hatfield. It deserves all that can be said in its favour, and it would be well if a little of the effusive admiration lavished on stunted foreign Conifers and other novelties could be bestowed upon this and others of our native trees. In pleasure gardens big trees are often regarded as a kind of "accident" by some gardeners, including landscape gardeners—to be cut down and put out of the way if occasion requires it. For lofty grandeur we have nothing that surpasses a fine Elm or a Spanish Chestnut, and both are rapid growers, attaining to gigantic dimensions in the most unfavourable parts of the kingdom, and they are consequently invaluable for planting for effect in parks or grounds, either singly or in groups. The wide and open lawn or park is the place to contemplate such objects—the spectator must stand off, as it were, to see them if he would see them aright. Unfortunately, many "ancestral Elms" have been planted in too formal a manner and far too near to each other to look well, the object no doubt having been to produce those

long-drawn-out leafy aisles like "Addison's Walk" at Magdalene College, and which are now charming enough in their way; but when avenues and drives are lined with such trees they should be thrown back from the road to admit of their fullest and loftiest development. Such an avenue makes a fit approach to a king's palace. It struck the writer that an apparently new avenue or drive running almost straight from one of the fronts of the mansion at Hatfield presented an opportunity of avenue planting such as is seldom met with, but as it then existed the road was sadly too narrow, stretching away through a rather desolate and unfurnished portion of the park like a mere track, and quite out of keeping with the mansion and its surroundings.

PEREGRINE.

## SOCIETIES.

### ROYAL HORTICULTURAL SOCIETY.

JULY 12.

THE exhibits on this occasion were few, but they comprised some noteworthy plants.

**First-class Certificates** were awarded to the following:—

To Messrs. Veitch & Son, Chelsea, for—

**Croton rubro-lineatus.**—A variety of noble habit of growth and handsome foliage. The leaves are long and broad, as in C. Veitchi; the variegation consists of mottlings of golden-yellow on a deep green ground, while the primary and lateral veins are a deep crimson as well as the young shoots.

**Lælia Philbrickiana.**—A beautiful hybrid Orchid raised between Cattleya Acklandiae and Lælia elegans. It is similar to the former, but the lip is larger and more highly coloured.

**Carnation Gloire de Nancy.**—A fine variety of the Clove section; the flowers are large, pure white, and finely double; altogether a first rate sort.

Mr. Bull, Chelsea, for

**Cienkowski Kirki.**—A remarkably handsome Gingerwort from Zanzibar. The leaves are ample, broad, and handsome. The flower-stems proceed from the base; they are erect, about 1 ft. high, and terminated by a dense spike of flowers and buds. The flowers consist of a broad roundish perianth about 3 in. across, of a delicate rosy pink with a white centre and conspicuous yellow boss.

**Oncidium Gardnerianum.**—A handsome Orchid bearing a profusion of flowers, 1½ in. across, on tall slender stems. The colour of the sepals, greenish-brown, barred with yellow; that of the lip, bright yellow, margined with mottlings of chocolate-brown.

**Iris Kämpferi Seraph.**—A fine variety, with double flowers of a pale lavender tint, heavily feathered, and margined with purple. Only one flower was shown.

M. Lemoine, Nancy, France, for—

**Pelargonium Henri Cannell.**—A double zonal variety of a deep crimson-purple colour, spotted with scarlet, as in the variety Dr. Denny. Also for a seedling (No. 76, 1878), a decorative variety in the way of Mad. Thibaut, but with more crisped margins and more deeply coloured. The truss is large, and the plant extremely floriferous.

Messrs. Cannell & Sons, Swanley, for—

**Delphinium Leon Dubois.**—An extremely fine variety, having long spikes of large and perfectly double blossoms of a rich violet-purple hue.

Mr. A. Chapman, Kensington, for—

**Athyrium Filix-foemina acrocladon.**—A variety of dwarf growth, having the fronds finely divided and tasselled in a very elegant manner. It will prove a valuable decorative plant if it is of easy culture.

In addition to the plants certificated, Messrs. Veitch exhibited Pothos aurea, a climbing Arad with handsome leaves mottled with yellow; Den-



*drobium cerinum*, a Bornean species, with small flowers of a creamy yellow and with long spurs; *Globba coccinea*, also from Borneo, a plant with long slender stems terminated by pretty clusters of small scarlet flowers—the habit of growth is graceful, and will prove a valuable decorative plant; *Spergula pilifera aurea*, a golden-leaved form of a small indigenous plant that will no doubt be useful for carpet bedding or for the rock garden, and *Anthurium Kalbreyeri*, a large-growing Aroid with handsome rounded leaves divided into from four to nine segments.

Mr. Bull contributed *Rhopala Jonghei*, a fine foliated plant in the way of *R. corcovadensis*; *Catakidozamia Hopei*, a Cycad, possessing large pinnate leaves borne in an elegant manner; *Senecio stenocephala*, a herbaceous species, with cordate and sharply-toothed leaves and erect spikes of yellow flowers some 3 ft. high; *Davallia Lorrainei*, an elegant Hare's-foot Fern, the true *Masdevallia Chimera*, differing from the spurious kinds by the flowers being borne erect; *Pellionia Daveana*, a trailing stove plant, with handsome leaves, the colour of which is a bronzy green, margined with various shades of invisible green; *Disa grandiflora Barrelli*, an extremely fine form of this terrestrial Cape Orchid; *Antigramma brasiliensis*, an interesting Fern, with silvery fronds; *Aphelandra punctata*, a variegated-leaved plant with emerald green foliage, spotted and veined with silvery white. These, with *Odontoglossum vexillarium*, *picturatum*, and *rubrum*, composed a beautiful and interesting group.

A new seedling Hybrid Perpetual Rose named *Mary Pochin* was shown by Messrs. Cranston & Co., King's Acre Nurseries, Hereford. It is in the way of General Jacqueminot, but of finer form and substance. It promises to be a first-rate variety. Mr. R. Dean showed some half-a-dozen well-flowered plants of *Lobelia Heckfield Favourite*, an extremely free flowering sort of a brilliant rich blue.

A fine display of cut flowers came from Messrs. Cannell & Sons, Swanley. These included a fine collection of *Verbenas*, comprising some eighteen varieties. The most beautiful of these were *Sir G. Wolseley* (purple), *Regalia* (cerise), *Ed. Perkin* (blush), *Dr. Fezerlin* (deep maroon), *Gen. Picton* (crimson), *Hero* (mauve), *Mrs. Coppin* (vermillion), *Philip Darling* (violet-purple), *Prince of Wales* (scarlet), and *Esmeralda* (white flaked with purple). A dozen named varieties of *Delphinium* were very fine, which besides seedlings includes such fine sorts as *Amabilis*, *Semis*, *Mons. Barrel*, *Gervais Romain*, *Hamlet*, *Britannicus*, and *La Belle Alliance*. Three groups of zonal *Pelargonium* blooms were also very brilliant; these were *Nemesis* and *F. Schuler*, both bright scarlet; *Henri Jacoby*, deep crimson-scarlet, very fine; and *Eureka*, a pure white variety. These, with flowers of a fine strain of *Camellia*-flowered *Balsams* and flowers of a *Nicotiana*, doubtfully named *N. affinis*, made altogether an attractive display, and a vote of thanks was accorded.

A fine form of *Cattleya gigas*, named *imperialis*, was exhibited by Mr. Hodges, Gravelly Hill, Birmingham. A vote of thanks was accorded. A major variety of *Oncidium crispum* came from Mr. Peacock's collection at Sudbury House, Hammersmith, which was very handsome, finer than we have hitherto seen. Mr. Croucher also showed a flower of *Odontoglossum vexillarium giganteum* to show how long it remains in flower. For cut blooms of *Pelargonium Osman Pasha*, Mr. Osman, Sutton, was accorded a vote of thanks; as was also Mr. G. F. Wilson for a flowering plant of *Hibiscus Hugeli*, a beautiful species with purplish-pink blossoms of large size.

A group of about a score of new *Pelargoniums* was sent from Chiswick. These were raised by, and exhibited for, M. Lemcine, of Nancy. Besides those certificated were some fine seedling varieties unnamed. Among the finest named sorts were *Paul de St. Victor*, *Etendard*, *Jeanne d'Arc*, *Belle de Jour*, *Mad. Boucicault*, *Surprise*, and *Cyclope*.

**Fruits.**—Melons were the principal exhibits. Among these two fine varieties were sent by Mr. W. Taylor, gardener to the Marquis of Bath

Longleat, Warminster. One was a sort selected from Eastnor Castle, an enormous globular fruit, finely netted, but deficient in flavour. The other was *Cashmere*, an old variety, of large size, white flesh, oval in shape, of exquisite flavour, and very juicy. It was highly commended by the committee, who considered it a first-rate Melon, and awarded a cultural commendation. These are the only sorts of Melon Mr. Taylor grows. A seedling Melon from Mr. Carmichael, Bury St. Edmunds, named *Nowton Court*, is a fine sort and very promising; the committee wished to see it again. It is a large round fruit, not much netted, but prominently ribbed; the flesh is green. It was raised between A. F. Barron and Dickson's *Favourite*.

Mr. Ross, gardener to Mr. C. Eyre, Welford Park, Newbury, showed a seedling Melon raised between William Tillery and Dell's Hybrid. As it was over ripe it was passed. It was a round and finely-netted green-fleshed sort. A seedling Melon also came from Mr. R. Doe, Rufford Abbey, Ollerton, Notts. It was a cross between Read's Hybrid and Colston Bassett. The fruit was over ripe. Mr. Butcher, Stratford-on-Avon, sent a handsome Melon, but it was poor in quality; and one from Mr. Wilkinson, Fisle Place, Lewes, was also passed.

A cultural commendation was accorded to Mr. Wilkinson for a fine Queen Pine-apple and two dishes of Pitmaston Orange and Victoria Nectarines, both very fine.

A finely-flavoured seedling Strawberry was exhibited by Mr. Barron from the Society's garden. Mr. Sheppard, Moorcroft, Cobham, sent a twin-fruited Cucumber Empress of India. A seedling Potato named *Early Comet*, a cross between American Success and Woodstock Kidney, was exhibited by Mr. R. Dean, Ealing. It is a handsome tuber of clean appearance, and said to be of first-rate quality. It was recommended to be tried at Chiswick.

**Pelargonium Society.**—On this occasion this Society awarded first-class certificates to M. Lemoine for *Mad. Harmant* (Lemoine), a decorative variety of fine habit and free-flowering quality. The flower is large, finely formed, and a pure white save a few carmine pencillings in the throat. *P. Mont Blanc*, a double, white-flowered, Ivy-leaved variety, very free in flower and vigorous in growth. The society also awarded first class certificates to Henri Cannell, and No. 76, 1878, described above.

## LATE NOTES AND QUESTIONS.

**Deposit on Grapes.** The other day I syringed my Vines for red-spider, and unfortunately left a deposit on the Grapes, and I find syringing won't take it off. What is the best for me to do with them?—SUBSCRIBER.

**Mildew.**—The most effective way of eradicating mildew on Grapes in a cool house is sulphur. Dust it on the leaves when they are wet, and allow plenty of air to circulate through the house.

**Roses.**—What are the best Tea Roses for forcing in pots.—L. T. [Mr. Geo. Paul recommends *Souvenir d'un Ami*, *Mad. Willermoz*, *Isabella Sprunt*, *Mad. Falcot*, *Alba rosea*, *Mad. Lambard*, *Marie Van Houtte*, *Anna Ollivier*, *President*, *Niphotos*, *Rubens*, and *Safrano*.]

**Names of Plants.**—A. G. Moncrieff Graham.—*Geranium pratense*, the small plant; the other is *Campanula latifolia*.—T. Longley.—1, *Hemerocallis fulva*; 2, *Lilium Martagon*; 3, *Spiraea Aruncus*; 4, apparently *Rosa spinosissima*.—*Orchis*.—*Habenaria bifolia*.—*Lenzie*.—*Pyrus Aria*.—J. G. Gray.—1, *Pteris umbrosa*; 2, *Nephrodium molle*; 3, send a specimen with spores on back of frond; 4, *Dictyogramme japonica variegata*.—T. Partington.—Send a better specimen, in flower if possible.—S. W. C.—*Lilium Martagon*, *Gaillardia aristata* var. (perennial).—F. B. (Letchworth).—1, *Saxifraga hypnoides* var.; 2, 3, and 5, send in flower; 6, *Periploca graeca*.—*Embley*.—*Vicia lathyroides*.—*Mac*.—*Bryonia dioica*, *Scdum album*, *Spiraea salicifolia* var. —T. H. A. H.—*Campanula grandis*; the small flowered species we cannot name. —W. P. M. (Waterford).—Apparently *Rondeletia speciosa*. —J. Arnold.—*Centaurea montana*.—J. Rad.—*Saponaria Vaccaria*. —H. B.—*Allium nigrum* var. —M. S.—*Betonica grandiflora* (the red flower), *Hieracium aurantiacum*. —R. T. V.—*Rubus molianus*. —H. T. A.—2, *Festuca Myurus*; 3, *Bromus scutellarius*; 4, *B. arvensis*; 5, *B. mollis*; 6, *Poa maritima*; 7, *Festuca bromoides*; 8, *Poa distans*; 9, *Festuca pratensis*; 10, *Poa rigida*; 11, *Avena pratensis*. Please note that our rule is only to name four plants at one time. —J. D., Chester.—*Bignonia capreolata*.

—T. T. M.—Probably *Euonymus europaeus*.—T. B. W.—Apparently *Clerodendron speciosum*, but we cannot name accurately from such miserable scraps. —H. W. E.—*Campanula pusilla alba*. —G. Webb.—*Gesneria tubiflora*. —F. J. S.—1, *Deutzia scabra* fl. pl.; 2, *Cistus ladaniferus*. —J. C.—1, *Scelopendrium vulgare crispum*; 2, *Cotoneaster* species; 3, *Euonymus japonicus latifolius variegatus*; 4, *Lastrea Filix-mas*; 5, *Selaginella Wildenovi*; 6, *Aspidium aculeatum*. —7, *Scelopendrium vulgare*. —J. L.—Next week.

## GARDEN APPOINTMENTS.

HASNESS HALL, Cockermouth, Cumberland, Mr. J. Taylor.

CLARENDON PARK, Salisbury, Mr. Warren.

CAMP VILLE, North Shields, Mr. W. S. Campbell.

FERN HILL, Thorpe Hamlet, Norwich, Mr. T. Towns.

MARSTON HOUSE, Frome, Mr. W. Iggulden.

BELMONT, East Barnet, Mr. T. Record.

MELCHET COURT, Romsey, Mr. Benham.

WHERWELL PRIORY, Andover, Hants, Mr. J. Spaven.

HOWSHAM HALL, Kirkham, York, Mr. J. Hatherly.

ATTINGHAM HALL, Shrewsbury, Mr. W. Spinks.

CREEDY PARK, Crediton, Devon, Mr. W. Seward.

GLYLIFTON PARK, Carnarvon, Mr. M. Hartwell.

ELMWOOD, Bickley, Mr. J. Paul.

HAZEL HALL, Epsom, Mr. W. Manning.

THE CEDARS, Leamington, Mr. F. Southam.

OSPRINGE HOUSE, Faversham, Mr. H. King.

HIGHCROFT, Husbands Bosworth, Mr. G. Radford.

CATERHAM VALLEY, Mr. W. Millard.

ELKINGTON HALL, Louth, Mr. B. G. Stone.

BROOKE, Isle of Wight, Mr. D. Judd.

STAGENHOF PARK, Welwyn, Herts, Mr. John Chisholm.

ROSEFIELD, Sevenoaks, Mr. S. Cook.

SUNDERLAND HALL, Selkirk, Mr. D. Crombie.

PEELWAYS, Ayton, Mr. D. Clunas.

DALHOUSIE, Crief, Mr. A. Ross.

SKIBO CASTLE, Sunderland, Mr. C. Bartleman.

CULVER HOUSE, Chudleigh, Mr. E. Sclater.

VILLA MAGORIE, Torquay, Mr. W. Wood.

HOLCOMBE, Dawlish, Mr. W. Pook.

MICHELSTOWN CASTLE, Cork, Mr. W. Whibberley.

NANTCLOYDD HALL, Ruthin, Mr. G. Hubbard.

FLORAIRE, Aigburth, Liverpool, Mr. J. S. Trevor.

ELMSWOOD, Denmark Hill, Mr. W. Camp.

ALVINGTON, Torquay, Mr. J. Dawe.

HATTON, Feltham, Mr. J. Gardner.

BYRNALLT, Hertford, Mr. A. King.

BULWICH PARK, Wansford, Mr. J. Park.

MOAT MOUNT, Mill Hill, Mr. Jas. Read.

FERNSIDE, Bickley, Mr. E. Wilson.

CAVE CASTLE, South Cave, Yorks, Mr. N. Coppin.

LUDDINGTON HOUSE, Egham, Mr. G. Springthorpe.

HEADINGTON HILL HALL, Oxford, Mr. W. Howell.

CHELSTON CROSS, Torquay, Mr. J. Hobbs.

WARFIELD PARK, Bracknell, Mr. W. Hazel.

WANLIP HALL, Leicester, Mr. E. James.

CANONS PARK, Edgware, Mr. A. Bradley.

BLAKE HALL, Ongar, Mr. W. Bailey.

PORTMORE, Eddlestone, Mr. Cosh.

DESART HOUSE, Co. Kilkenny, Mr. R. J. Wilson.

HAY BROW, Scarborough, Yorkshire, Mr. James Robertson.

CASSIOBURY, Mr. Joseph Fitt.

**London and International Horticultural Directory.**—We should be greatly obliged by nurserymen and others aiding us in the compilation of this directory by furnishing lists of those occupied in the business of horticulture within their respective districts, including important agricultural houses also.

**Sawdust for Rhododendrons.**—Dr. Newington, of Ticehurst, informs us that fine sawdust will grow Rhododendrons perfectly in districts where there is limestone soil or blue gault to prevent their culture in the ordinary soil. He says he has seen satisfactory proofs of this, and that the Rhododendrons grew and flowered admirably in it. The fact may not be unimportant in districts where Rhododendrons cannot be grown, and where considerable expense to obtain peat is sometimes incurred.



No. 505. SATURDAY, JULY 23, 1881. [Vol. XX.]

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—Shakespeare.

### PLANTS PER POST FROM FOREIGN COUNTRIES.

CONSIDERING the facility with which living plants of small size can be got from abroad through the post office, I am surprised that this plan is not much more frequently adopted than it is. Perhaps it is not generally known among amateurs that for a few pence a small packet may be brought from almost any part of the world. I have had them sent me through the post from New Zealand, Demerara, Sandwich Islands, Porto Rico, &c. The packet from Porto Rico, received a few days ago—costing 1d.—consisted of a lucifer match box containing two living filmy Ferns, one of them having a young frond about  $\frac{1}{4}$  in. long grown during the journey. Unfortunately, however, after surviving a 3000 miles' journey and being safely deposited, as I thought, in my filmy Fern house, I found the following morning that a vile slug or other pest had made its supper off the tender heart of the plant, including the foresaid young frond—much to my disgust. The other filmy escaped. The packet from Sandwich Islands was still smaller—little more than a walnut in size. There were in it half-a-dozen very small Ferns as dry as tinder. However, on being put into moist heat they started into growth, and are now doing well. One is *Pteris decora*—new so far as I know to cultivation—the other (*Pteris decipiens*) is common. From Switzerland lately three packets of alpine plants have reached me, costing only 2½d. each. The packets contained about two dozen alpine plants each. One failure, however, I have to record from New Caledonia; a considerable number of films were in this packet, but all were dead, owing to insufficient packing. Everything depends upon the packing. In each of the above cases I have sent to my correspondents a small piece of gutta-percha sheeting for enclosing the plants to prevent evaporation. When from a great distance, several independent wrappers should be used. A square yard costs under 2s., the weight of this being only 2 oz. An airtight tin box would answer the same purpose, but the postage would be much increased.

Perhaps those who have friends abroad—not necessarily botanical—may be induced to try this system, especially any travelling or residing in little visited districts. Something new would in all probability frequently be the result. There is always great interest in getting a new plant. My experience has been principally with Filmy Ferns, which are amongst the worst subjects to travel. If such can be successfully imported, almost anything may. It is a different matter sending plants from this country, as everything of the sort must be paid letter rate. The postal authorities abroad are much more liberal than our own in this respect. Some time ago I sent a quantity of Rose cuttings to a friend in Demerara which cost me as many shillings as the same parcel would have cost pence coming from that country. My friend tells me the cuttings for the most part are growing luxuriantly, which is a consolation so far.

P. NEILL FRASER.

Edinburgh.

### FORCED AND PROTECTED VEGETABLES.

**French Bean House.**—The object which "H." has in view is constantly attempted and more or less successfully put in practice every

season by most cultivators, but in the majority of instances the work is done in a makeshift sort of way, that is, with houses not generally constructed and devoted to particular varieties of vegetables, as is the case with fruits. Of course houses such as your correspondent wishes to get up are certainly to be found about London, and occasionally in the large gardens in the country, but generally such houses are erected for a double purpose. A French Bean house, for instance, is not required for Beans all the year round, and therefore it is utilised for plants, or say Cucumbers or Melons in summer, and why not? but then a compromise is made in the construction. Beans only in winter and spring, from your correspondent's point of view, should be the primary idea in the construction of the French Bean house, and for every other sort of vegetable the same leading idea should be upheld to insure the greatest amount of success. Green succulent vegetables in abundance in winter is a delightful thought—a product of the mind like a Spanish chateau, but not so easy to realise. French Beans after November will require a narrow lean-to house, steep, with a short hip behind, therefore not lofty—9 ft. to the apex will be high enough; it should have wide panes, a minimum of timber in the shape of rafters, so as to admit all the light possible, a sunk path in front, a short upright sash there, say 18 in. high, on which to rest the rafters, and an open shelf 20 in. wide next the glass, under which would be four 4-in. pipes. In the body of the house, which may be 10 ft. wide inside, should be a steep stage, corresponding with the lie of the roof, on which to place the pots or boxes containing the Beans. Underneath the stage should be four more pipes laid horizontally side by side, so as to heat the house comfortably without having to overheat the pipes, producing that roasted smell of the atmosphere invariably experienced in houses where the heating apparatus is strained to do its work. Means of ventilation can be made in the short hip sash. The object of this narrow steep house is to catch all the light of the sun in winter, and the use of the steep stage is to give the Beans all the benefit of the light possible, and to admit of a circulation of air among the pots or narrow boxes in which the Beans are to be grown. The steps of the stage need not be wider than 9 in. The greatest want of Beans in winter is sunlight—their greatest enemy damp. A great cultural mistake is planting in too much soil; a hard mature growth, induced through having plenty of light and a free circulation of air within the house, should be aimed at. This is no ideal house for the special culture of Beans in winter and spring, but one which I have actually seen in operation. It might not be called a handy house, but handiness will have to be sacrificed to the necessities of the crop. The watering and picking may be done under difficulties, but "catch your hare before you skin it" is good advice. If the back wall is whitewashed and the flues from the fire are made to traverse it from end to end before communicating with the chimney, much economy in heat will be the result. A house of this description will answer admirably for Strawberries, but without the four pipes underneath the stage; the centre stage also may be flatter, because the Strawberry does not require so intense sunshine, and rather rejoys a moist atmosphere.

**Early Pea House.**—For very early Peas a long narrow house with the same description of roof is the best, except that the front upright sash should be 3 ft., and three pipes only will be sufficient, and they should be under the centre stage; a row of Peas will then be grown on the narrow border next the glass, or in along narrow box for the purpose, similar boxes to be placed

on the stage in the centre of the house, to which, that is, to each side of the box, a row of wire netting should be attached for the support of the Peas. Such varieties as *Dickson's First* and *Best* or *William the First* are the best for early work. For the spring and early summer supply, pits 10 ft. wide with a good pitch to the sun and with a flow and return pipe in front, are the best in which dwarf sorts can be sown in about 1 ft. depth of soil. Such as *Tom Thumb* or *Little Gem* may run in rows across the pit the same as in the open ground. This may seem a great width, but there is economy in it in relation to the pipes, and handiness must give way to other considerations. I prefer light and handy appliances, but there is also a limit in this direction.

HIBERNIAN.

**Green Vegetables.**—Having had forty years' experience in growing these for winter and spring use, allow me to offer the following remarks on the subject: For French Beans I have found Melon and Cucumber pits suitable where the temperature can be maintained at from 55° to 60°. I have had two crops of Beans from such houses from May to September, sowing the first on the soil from which the Melons or Cucumbers were taken. For the second crop I added a little fresh loam, and planted the Beans out from 3-in. pots. In November I have found it a good plan to plant my Vine borders with Beans (a fortnight after the houses are started) from 3-in. pots; the same may be done in succession as the Vineries are started, thus securing a good supply all through the winter and spring months. Peas I have known to do well in pits with just sufficient heat to keep out frost. Basil may be sown on the surface of light soil in shallow pans or boxes, and placed in a house with a temperature ranging from 60° to 70°; keep it as dry as possible in damp weather, as it is liable to damp off. Mint, Tarragon, &c., succeeds on borders of Vineries and Peach houses where the temperature is from 50° to 60°. Tomatoes require a span-roofed house devoted to themselves. For Strawberries I recommend a lean-to house with a stage placed near the glass, just leaving sufficient room for watering. I have never seen Broccoli grown in houses, but have had it excellent in the most severe weather merely by adopting the old plan of taking up the plants when full grown and placing them upon their sides with the heads facing the south. Celery I have known to last good all through the winter planted out-of-doors in narrow ridges well earthed up; at the last earthing up in October the surface should be well smoothed down with the back of the spade from the plant downwards to carry off the heavy rains. It will keep in this way till it runs to seed. M.

**Span-roofed Pit.**—If given good houses, and the requisite labour to work them, there is no reason why the products desired by "H." should not be forthcoming in abundance. Generally, cultivators have to put up with makeshift conveniences, particularly as regards the winter protection of Broccoli, Cauliflowers, Lettuces, and the like, and as yet I have never been fortunate enough to have at command any better convenience for lengthening out the supply than that afforded by the shelter of a wall, and Fern or long litter shaken over the plants in severe weather, or a few skeleton frames, over which were tacked mats or canvas; either of these modes preserves Broccoli, Cauliflowers, Celery, and the hardier Lettuces fairly well, but if I had "H." as minister of the exchequer, I would certainly go in for building houses, or rather frames, for the purpose of wintering them the more effectively, and with less labour than is involved by the practice just



alluded to. One of the best forms of house, or rather pit—for house it could scarcely be called—would be a span-roofed one running north and south, 12 ft. in width, and of such dimensions as to length as the supplies required demanded. The lights should be movable, in order that they might be taken off or put on, as needed, and the whole interior of the pit should be a bed of good soil in which the seeds could be sown or the plants be planted out, at a date calculated to furnish the supplies when required. Artificial heat would rarely be necessary, as the best protection would be an exterior covering of good thick mats, or Frigi Domo, but as a safeguard in very severe weather a single line of pipes round the pit might be desirable. This form of pit would do well for Broccoli, Cauliflowers, Colworts, and Lettuce, which might either be sown as above suggested, or be transferred from the open garden at the beginning of winter.

**Span-roofed House.**—French Beans, Tomatoes, and Asparagus are about all the really good winter vegetables worthy of forcing, and for these provision should be made for heating the pit to a temperature of 75°—not that this figure would need to be always adhered to, but sometimes it might be necessary. This house I would also have span-roofed, the gables pointing north and south, and 13 ft. in width; this would allow of a 6-ft. bed on each side and a 3-ft. path through the centre. The bed on the west side should be entirely reserved for the growth of French Beans, and the opposite side for Tomatoes and Asparagus; a bottom heat of not less than 70° would be needed in each case, and this could be produced by placing the pipes in a chamber formed of Oak<sup>2</sup> slabs or earthenware tiles, and the soil placed over them; on the east side a central dividing line consisting of 4½-in. brick-work would be needed through the entire length of the bed. Of the partitions thus formed, the one next the outside wall should be planted with Tomatoes, and the inner half with Asparagus. The Tomatoes could be trained up the roof and over the Asparagus without any bad result. Provided the path was sunken, which might easily be done by having a step or two down into the house, a shelf might be suspended from the centre to the roof, on which might be grown Peas in pots, Strawberries, &c.

**Cold Pits.**—For the winter growth of Radishes and saladings generally, no structures are more suitable than what are usually termed cold pits; indeed, personally, I should prefer a series of these having a southern aspect to the best planned forcing houses that could be built, and for bottom heat, not much of which is ever required by saladings, nothing equals Oak leaves, either for regularity as regards heat or the length of time during which they retain it. As to top heat, about 60° as a maximum would be ensured by a single row of pipes round the pit, but this heat should not be used except the temperature is likely to fall below 50°, the reason being that none of these things thrive so satisfactorily in heat so imparted as in that given off from leaves and manure.

**Store Houses.**—For open garden vegetables undoubtedly a north aspect is best, and so long as the atmosphere is free from actual frost the cooler they can be kept the better. The sheds that are generally built behind vineries and other lean-to houses might with slight alteration, especially as regards light, be made available for storing Broccoli that had attained an advanced stage of growth, and Celery that had begun to decay. Beetroots, Turnips, Parsnips, and all other culinary roots winter perfectly in such situations.

W. W.

**Cloches.**—"H." (p. 49) will be able to supply himself with Lettuces, Endive, Radishes, young Onions, Mustard and Cress, and other green salads in winter and spring by the use of French cloches with or without fermenting materials. In order really to see what difference the cloches made to crops without any assistance from hotbeds or top coverings, I, last February, sowed Early Hammersmith and Tennis Ball Lettuce under about fifty cloches, and at the same time sowed beside them a similar quantity without any protection. This was on a south border pretty well manured previously. The cloches were simply set on the soil, but as the season advanced a small pebble was put under the edge of each on one side to admit air. The result was that we cut Lettuces from under the cloches just about twenty days before those on the open border were ready. I would not have believed the difference would have been so great, but the protection of the seeds from frost, cold rains, and snow makes all the difference. Our cloches are about 18 in. in diameter, without knobs, and cost somewhere about 1s. 9d. apiece. If "H." has the materials and conveniences I should advise him to collect a long and broad heap of tree leaves in autumn, about 3 ft. deep and 20 ft. or 30 ft. wide, cover the same with good mould and place the cloches on it, and sow or plant under it anything that he wants early which will succeed in that way. The slight hotbed of leaves will greatly accelerate the progress of the crops, and I doubt if he could adopt a cheaper or better plan.

**French Beans and Strawberries** can be grown well together. A lean-to house with a sharp slope to the south, say 15 ft. high at the back and 10 ft. or 12 ft. wide, and glazed down to the ground, including the front lights or shutters, will grow Strawberries on shelves on the back wall capitally, and French Beans on the floor or bed in front. It may also be used for Tomato culture as well. It should be heated sufficiently to keep the temperature up to 50 deg. or 55 deg. at least in cold weather, and four or five rows of 4-in. pipes will be needed to do that. It pays to provide sufficient heating power.

**Frames.**—He may also grow Beans, Strawberries, Peas, Turnips, Carrots, Lettuces, Potatoes, herbs, Asparagus, &c., in low frames, built of brick 6 ft. wide, with movable sashes, and heated by a 4-in. coil of piping running round the pit back and front—that is, a single pipe flowing along the front and returning by the back. When heated by pipes we find that fermenting manure is not required. The disadvantage of frames is that the lights have to be removed to admit of watering, &c., which is a drawback in severe weather, but they are far better than draughty orchard houses, except for Peas and Cauliflowers, &c., which do best in such structures. We should prefer to have the French Beans and the Strawberries in a house lofty enough to permit of the plants being watered and attended to inside. Tomatoes also do best in such structures, but we have had immense crops of these from May till December in heated frames, a few old Pea sticks being laid over the bed and the plants pegged over them. It does not pay to grow either Peas or Cauliflowers under glass. But Broccoli may be lifted, after it has grown, in October or November, and laid in by the heels, 18 in. apart, in any temporary frame made of turf or deals, and covered by glass sashes or shutters to be removed in fine weather. This is the best and cheapest way to make sure of a supply of Broccoli in winter and spring, and the plants lift easily with balls of soil to their roots in the autumn. If one frame faces the south and

another the north, it will prolong the supply till the summer Cauliflowers come in. Eclipse and Carter's Champion Broccoli are the most reliable kinds for late work. No one need lack a supply of Broccoli who is prepared to take this trouble with them. Tender Brussels Sprouts and Spinach any one ought to have outdoors every day throughout winter and spring without any protection whatever if the crops are sown at the right time. Our hardest frosts make little or no impression on these, and if breadth enough be planted the supply will be sufficient. Spinach grows slowly during winter, hence the breadth sown must be greater. We have never been without these two when most other things have been killed. What kills Celery in winter is the alternate frosts and rains, but light, waterproof, felt shutters, made ridge-shape and wide enough to cover a trench, will keep the ridges dry, and straw will exclude frost, and in this way good Celery may be kept long enough and in better condition than lifted and stored in a shed. Your correspondent is right in thinking the French Bean the best green vegetable to force, and with a kind like Osborn's Prolific he should have good crops. They can be grown in Vineries, Pine stoves, or Peach houses, always bearing in mind that they must have light and be near the glass, and have a temperature ranging from 60° to 75° at least. All the salad tribe named above are easily produced at any season of the year if the accommodation before described is provided for them, and Chicory will force well in any warm cellar, and with these and Broccoli, Brussels Sprouts, Spinach, and French Beans, &c., most people could be satisfied during an English winter.

J. S. W.

## WILD GARDENING.

To the plants recently recommended by Mr. Berry, of Longleat, for wild gardening (p. 41) you should add *Dictamnus Fraxinella*, especially the white form. Last week I had the pleasure of seeing the garden at Crowsley Park, Oxfordshire, where many plants are grown in the long Grass. Among these none surprised me so much as the white *Fraxinella*. Usually this is not an easy plant to grow, and so slow of increase that "instances are known where the *Fraxinella* has outlived father, son, and grandson on the same spot without increase, all attempts at multiplying it having failed." Yet in the long Grass at Crowsley Park it seems to revel. This, and the fact that in its native habitats it grows in Cornfields, seems to show that the right position is where its roots can be shaded, but its flowers can get sun and light; and, speaking of large plants, there are two now in flower here which I can strongly recommend to anyone seeking such plants. One is *Veratrum viride*. This is a Southern States plant, and very different from the European forms *V. album* and *nigrum*. When in flower it is more than 6 ft. high, with a strong straight stem, requiring no supports, noble foliage, and ending in a loose panicle of yellowish-green pendulous flowers, unattractive singly, but very striking in the mass. It is perfectly hardy. The other plant is *Oreocome Candollei*, one of Max Leichtlin's good introductions. This, too, stands about 6 ft. high, strong and erect. The leaves are as finely cut as a *Todea*, and the flower-stems end in one large umbel divided into many small umbels, the flowers white, and the pedicels also white and transparent. In the sunshine, when seen with the light shining through, the appearance is very beautiful and peculiar. It is quite hardy, but I do not know its native country. I shall let both these plants form seed, which I shall be glad to give to any that would like to try them. —HENRY N. ELLACOMBE, *Bilton Vicarage*. [This is reprinted from THE GARDEN of last week (p. 50), owing to a page having been omitted by accident.]



## NOTES AND READINGS.

That ejaculation of thankfulness in *THE GARDEN* for the "great mercy that only one out of fifty of the variegated plants sent out are ever worth a farthing," will cause, I have no doubt, some consternation. Is another fond delusion to be dispelled? The editor, no doubt, referred only to those green and white things which raisers dignify with the name of "variegated trees and plants," and does not include in his condemnation such subjects as golden and silver Hollies, Aucubas, Caladiums, Begonias, tricolor Pelargoniums, and the like, be they hardy or tender; but there can be no doubt that the variegation craze has in its time been a little overdone. There are, however, variegated and variegated plants even among the green and white section. The occasionally splashed Elder, looking as if somebody had hit the foliage here and there with a whitewash brush; the blotchy and sometimes wholly albino-leaved *Alocasia macrorrhiza*; or the erratic *Cyperus*, always hesitating whether it will be green or white, or both, are not subjects that one contemplates with feelings of admiration; but the slender and regularly-margined *Sibthorpia europæa* is a pretty object, and formed one of the most attractive plates *THE GARDEN* has ever issued. So is the little *Panicum variegatum*, and so is the Old Gardener's Garter. A variegated *Geranium* like Flower of the Day, with its imperfect, crumpled, and manifestly-diseased foliage, is a nothing, except from a bedder-out's point of view; but the first time I looked upon good specimens of Grieve's tricolor varieties I thought the delicate tints of the leaves looked like sunshine photographed. One of the earliest was appropriately named Sunset, if I remember. Variegated trees and shrubs have not had such good luck as small plants. There is a variegated *Rhododendron* occasionally seen in such a miserable-looking aspect as to suggest horrid ideas in connection with blood-poisoning. Who raised it we cannot say; but no doubt the raiser had a certificate of merit from some society or other when he first sent it out. It is a truly pitiful specimen of its class.

The variegated *Acer Negundo* has also helped to bring its neighbours into disrepute, although we have seen very telling groups of it in shrubberies, planted by Mr. Dick, at Canford, near Bournemouth, where it seemed to grow well and produce ample foliage. In more unfavourable climates it becomes a scarecrow, looking always more dead than alive. Variegation in the *Acer* results from a feeble circulation, the real oxygenised blood, so to speak, not reaching the extremities hence the white portion of the foliage is always going off, or suffering from adverse conditions of the weather. A leprous variety of the *Wellingtonia* and one of the *Cupressus* have also been brought under the notice of cultivators, but they do not find favour apparently, for they are not much sought after.

The glossy, bright-leaved *Aucuba* and the golden and silver Hollies are, on the other hand, deservedly popular shrubs, and no one would think of condemning them, though there are some Hollies that are not worth notice as variegated subjects. In fact, the line must be drawn somewhere in variegated plants, and a mere variation from the original green to green-white should not be invariably recognised as a claim to notice and recommendation, as has hitherto been the case in too many instances. In the case of the *Coleus*, for example, it seems only necessary to sow seed in order to get new shades of colour and degrees of variegation,

and perseverance in sending the same before the committee at South Kensington to get certificates, for it has been truly observed that there does not appear to be any limit to that body's power of discerning "acquisitions" in the new subjects presented to it so long as they indicate a hairbreadth's difference from anything that has come before it previously.

I have been rather disposed, if anything, to favour the ideas of artists in things pertaining to ornamental gardening, but since studying that artist's bouquet in *THE GARDEN* (p. 38), I wish to confess that I draw the line at bouquets. That bouquet is, to begin with, a white mass of any kind; and as to the artist's "scarlet" meaning "orange," no doubt orange means all degrees of yellow as well, and anything between these two extremes is to go against the white, on one side, and on the other red, and the brighter the red the better. Next to that and the white is to be an almost black flower; beyond the scarlet, blue; beyond the red, purple and yellow Picotees and a blue Pentstemon, which it seems is always to be had; and lastly, flowers of a brownish hue—Fuchsias, and a margin of Ferns behind all. This is how to make a bouquet by "An Artist," and we recommend the article to the Covent Garden bouquetists. It is to be white, scarlet or yellow, red, black and blue, and no fringe of green, or any delicate contrast, is to come between these colours, nor any delicate tints. No such outrage, nothing so common, nothing so impossible has yet been conceived in the vilest bedded out flower bed ever yet planted. This bouquet, it appears, exhibits the two principles to be kept in view by bouquetists—one, harmony and contrast of colour, the other force of light and shade. In reading the directions furnished by "An Artist," we felt very much like the backwoodsman, who could not comprehend the bill of fare at a certain hotel in New York, and guessed he would go back to first principles and take Beans and bacon.

The "garden nursery," which was at one time a useful adjunct to many a large private garden, has somehow or other sadly fallen into neglect in these days of fast gardening, but now when a taste for greater variety in the way of hardy shrubs and plants is reviving, it is beginning to be missed. A spare piece of ground, which need not be large—a receptacle for nick-nacks and devoted to the propagation of select plants and shrubs—would prove a boon to the gardener and enable him to fill up many a blank in the garden without delay or trouble to himself, or much expense to his employer, who at the present time buys more from the nurseryman than he used to do or need do.

Canon Hole, in his eloquent discourse on the Rose the other day, said, in speaking of its propagation, that the time was coming when Roses would probably all be grown on their own roots, in which case the garden nursery would be the place in which the rising generation for the Rose border would find a home; and when we take to propagating batches of Roses every autumn, as we do our *Calceolarias* and *Pelargoniums* now, the time will have gone by when we need to discommode ourselves much concerning the destruction of a few plants by frost or any other cause, and gardens will not remain unfurnished because of possible difficulties in the way of procuring fresh stock.

The Canon's discourse on the Rose, which so many people went to the Sheffield exhibition expressly to hear, delivered in his own inimitable manner, had a true practical ring about it

which elicited many a grunt of satisfaction from that portion of the Yorkshire Rose growers who are accustomed to express their feelings in that way, and many a broad ripple of fun passed over their faces at his apt and pointed anecdotes and comical allusions, while the "intellectual mind" which, a certain horticultural writer once said, craved for something more than mere practical information in connection with Vine culture, I think did not go away disappointed.

The comic element of the occasion was furnished by the capital brass band of the 69th, which, astounded apparently at the sudden dispersion of its fashionable and appreciative audience (which trotted after the Canon), left its stand and followed, bursting with its brazen voice upon the lecturer and his hearers just as the former began, but "stopped short," like "My Grandfather's Clock," as soon as it realised the awful nature of the "charge" it had contemplated, and fled from the Canon's presence, it was said, to the refreshment tent, carrying with it a member of the managing committee who had laboured under the hallucination that the Canon expected to be accompanied in his discourse by the band playing "The British Grenadiers" and "My Love is like a Red, Red Rose," in complimentary allusion to past and present associations, and who had given orders accordingly.

No one, we are sure, who knows anything of him would accuse the Canon of lacking sympathy with Nature in its broadest aspects, and least of all in the case of the Rose. Mentally and physically he is too big to be fettered. He was not wholly and unreservedly charitable when he insinuated "*sub rosa* that some of our friends" objected to the florists' Rose, and took little interest in Rose exhibitions because they could not win prizes themselves—a proposition which is just about as sound as that no one has any right to criticise a baby show because one did not send their own baby to it. There are plenty of contented lovers and growers of the Rose who bear no malice to exhibitors, and care not a jot whether they win or lose. We suspect such unworthy jealousies are the product of competition, and exist among a certain section of exhibitors only, but are far from thinking that there is no chivalrous feeling as pure and high as ever actuated a Saladin or a Knight Templar among that class of exhibitors of which the Canon himself is such a worthy ornament.

On the subject of manures for the Rose Canon Hole is evidently in sympathy with the old gardener whose best analytical test was his nose, and who had a profound contempt for all compositions that did not appeal "strongly" to that organ. In short, the great Rose grower pins his faith first to farmyard liquor, next to guano, and, lastly, to Clay's Fertiliser—all of them, like Rimmel's cards, delicately perfumed, although, to do the Canon's philosophy on the subject justice, his preference for those originated from a practical testing of their value in the Rose garden.

So Peaches have begun to set in America before they come into flower, have they? It would be dangerous to say what might not happen in America maybe, but Peach growers in this country have not patented the process as yet. It will surprise no one to learn, a short time hence, that the trees have dispensed with flowers altogether, and that the fruit has begun to grow right away without their assistance. Until this is accomplished we fear the bees, the syringe, and the like aids will continue to be popular. No one ever saw the anthers or the pollen of a Peach flower developed before the



flowers expanded. "Set cultivators a-thinking!"—set them a laughing would be more like it. Gardeners have certainly acted on the assumption that the fertilisation process was effected after the flowers opened. They have never hitherto been able to fertilise the flowers till that happened, for no one gardener ever saw the pollen wherewith to effect the operation until it was produced, and that never happened until the flowers had been expanded some time and the pollen matured. Mr. Wyss's Peaches must be endowed with true American precociousness. I don't intend to "think about" the subject, as "A.D." suggests, because I do not believe a word of the story; but I will give £5 to the first man who will produce a Peach tree that sets its fruit on "Wyss's principle."

PEREGRINE.

## EDITOR'S TABLE.

**Lady Middleton Carnation**—A very large Carnation described by Mr. W. Young, of Edinburgh, who sends it, as the largest of all the tree kinds. It was a sport from Souvenir de Malmaison. Mr. Young says the flowers are sometimes 5½ in. across, colour a delicate pink with numerous small stripes and spots.

**The Cape Hyacinth** (*H. candicans*).—Fine plants of this, over 3 ft. high in a pot, come from Messrs. Beckwith, of Tottenham. These excellent growers have been trying the fitness of this plant for pot culture, but they find it too strong a grower for that purpose. Had we not, however, seen it growing in rich ground out-of-doors we should have thought these pot-grown plants very remarkable.

**Mariposa Lilies**.—These strange and graceful plants (*Calochortus*) are perhaps made happier by the glowing days of our warm July—days which might well pass for Californian. In any case we have not seen them so tall and free flowering before in this country as they come to us from the New Plant Company at Colchester. Two species are sent, *C. luteus* and *C. venustus*; the latter, drawn by Mrs. Duffield, was one of the first of our successful plates.

**An Australian Shrub from Cork**.—Perfect bloom of a pale lemon coloured "Bottle Brush" plant from Mr. W. E. Gumbleton, who says: I enclose blooming specimens of what I consider an exceedingly ornamental flowering shrub (*Callistemon rigidum*). It is growing as a large bush in a villa garden on the top of Queenstown Hill, and is quite hardy and uninjured by the last three winters. Some of the more showy Australian shrubs of the same family would probably do well in the same district.

**The Hardy Pitcher Plant**.—The Rev. Mr. Rawson sends from Bromley Common a specimen of this which has stood out in his garden during the past winter. As the plant may be seen in every ice-clad bog in the Northern States of America, its hardiness is beyond doubt. With such summers as this the growth of *Sarracenia purpurea* would be free and well ripened in the open air in England; as it is, it grows steadily and is hardy enough.

**The Hardy Heaths** still continue beautiful. A silvery white form of the common Heather (called *Calluna v. alba minor*) is peculiarly charming; so is the Cornish Heath (*Erica vagans*), which comes with it in two forms. The pretty little Partridge Berry (*Gaultheria procumbens*) is in flower with these, and bears many Lily of the Valley-like flowers, with a faint pink tinge towards the base—a precious little shrub for the rock garden, evergreen, very dwarf, glossy, and later on studded with red berries.

**Spiræa venusta var. lobata**.—A lovely and stately plant as it comes to us from Mr. Rawson, of Bromley Common. It is one of the plants that will repay for thought in the selection

of a position, and is not so happy as a mere dot in a mixed border. A cool but not shady place near the hardy Fernery or bog garden will do for a mass of it; an open moist spot in a bed of Rhododendrons will suit a colony. Its rosy plumes are lovely in July, and the foliage of this form, as grown by Mr. Rawson, is bold and handsome.

**Large Water Lilies**.—Respecting some very large and bold Water Lilies sent to us from Highclere, Mr. Ross writes from the gardens there as follows: The double variety that I sent to you is decidedly superior to the common semi-double sorts that we have here. The leaves of the double Lilies are large, of a bright green, glossy tint, and the plants are strong and more robust in growth than the others. The flower-stalks, too, are stout, consequently the flowers are raised well above the foliage, and in many instances ½ ft. above the water, thus showing the beautiful white flowers to good advantage. It continues to flower for a longer period than the common sort. The flower-stalks of the latter are generally weak, and the flowers lie flat on the surface of the water.

**Lilium testaceum** is praised much just now. Mr. Burbidge says it is nearly 7 ft. high with him—one shoot with eleven flowers at top. It was always a free-growing and handsome Lily, conspicuous in old days when Lilies were not getting much attention. Supposed to be a hybrid between the scarlet Martagon and the white Lilies, this is a stronger grower than either parent, and easily grown. Mr. Burbidge says "The white Lily is now glorious, and also *L. longiflorum* in borders. Our best clump of *auratum*, two years planted, has ten stems 6 ft. high, and bears over 50 buds. Even the little shoots from the small spawn at the base of large bulbs give a flower each at 6 in. to 1 ft. above the ground level."

**Lindley's Spiræa**.—A fine wreath of a noble flowering shrub, which invites the outdoor gardener to go a little out of his way to give it the place and soil it deserves. The usual state of this shrub, at once a fine-foliaged plant and a flowering shrub of the highest merit, shows as well as any the thoughtlessness which is the rule as regards the finest things we have. How does this come about? Partly because few good examples exist of such shrubs at once grown well and placed well. A group of *Spiræa Lindleyana*, say three to five bushes, with ample room on lawn or grassy slope, with no interloping roots or boughs near to rob them of sun or soil, would be a graceful sight in July. Mr. J. D. Nanscawen, who sends one plume of the bush from Whiteway Gardens, Chudleigh, Devon, says it was taken from a specimen about 10 ft. high and the same in diameter.

**Mr. Betteridge**, of Chipping Norton, grows his flowers well, and on one of the hottest days of the week it was refreshing to see certain old friends among the hardy Pea-flowers which always seemed to us worth growing—the rosy Coronilla (*C. varia*), a pretty and very free plant; the pink and white Goat's Rue (*Galega officinalis*); these are hardy enough to grow in the hedgerow, but are well worth having as cut flowers when well grown, as in this case. Among other good plants he sends us (July 19) is the Queen of the Prairies (*Spiræa venusta*), a tall and beautiful plant when well grown; *Oenothera Youngi*, *Sida malvæflora*, some handsome spikes of the Black Mullein (*Verbascum nigrum*), the always welcome old blue and white Aconite in long spikes, and a variety of other handsome plants recently mentioned in our pages, and which, therefore, we do not repeat.

**"Woodman, Spare that Tree."**—The fine Plane tree in front of the old entrance door of the South Kensington Museum is, according to a writer in the *Times*, about to be sacrificed. Now that efforts are being made to preserve things beautiful in London, surely a word may be said in favour of sparing that old tree. It has been the growth of a century or more, and, once cut

down, can never be replaced. The copies of trees in oils and water colours within the Museum are good, but the glorious living tree without is better.

## NOTES FROM CORNWALL.

THE change one sees after a few weeks' absence from home is surprising; everywhere before I left, Narcissi, Wallflowers, Arabis, and similar plants were in full flower, but now these are succeeded by Brompton Stocks, Lupines, Irises, Geraniums, Roses, Pinks, &c. It is somewhat rare to see the Passion Flower in a deciduous state, but it was so this winter; and was only just recovering a few weeks ago, and now where it is trained against houses it is in positive tropical luxuriance.

**Bedding Out**.—Plants bedded out do not present quite a happy appearance. In fact, they never do; when it rains they have a "washed out" appearance, and in dry weather they are "baked up." In old-fashioned gardens one constantly sees such lovely plants as Lilies: the Tiger Lily, the Fire Lily, and occasionally the White Lily (*Lilium candidum*), and the Pyrenean Lily (*L. pyrenaicum*); grand plants these; they do not originally cost more than one or two second sized Pelargoniums, incur a great deal less trouble, and are hardy; and one Lily is worth a score of Pelargoniums; in fact, there is no comparison between the two. There are three seasons in the year when the majority of gardens around Penzance are particularly "striking" as regards one speciality; in spring we have the lovely Arum Lily, with its trumpet-shaped flowers in abundance; just now (July) the lovely *Lilium lancifolium album*; and in autumn the *Belladonna Lily*; this last is abundant, and it is surprising how few amongst visitors know its name.

**American Aloe and other Plants**.—There is an example of this about to flower in Mr. Newall's garden at Penrose Terrace; at present it is about 15 ft. high, and is estimated to be from 40 to 50 years of age. The stem is thick and strong; it lengthens at the rate of about 2 ft. per week; of course it has to be propped up. This came originally from the Scilly Isles. Some years ago one flowered at Alverton—an extraordinarily fine one, finer than the one in Mr. Newall's garden. Saxifraga Wallacei.—In the white-flowered section this is a little gem. The individual flowers are somewhat large, and are borne in small umbels. The leaves are formed at the base, like a kind of mat. The whole height is not more than 3 in. or 4 in. It was finely in bloom a few weeks ago in Mr. Nicholl's nursery, Redruth. *Spergularia rupestris* is another native gem, and one that will occupy a prominent place in out-door rockeries. It extremely bright pink starry flowers are very pretty. It grows plentifully on all the cliffs around here in all sorts of out-of-the-way places, such as on bare rocks, wedged in between two rocks, &c. Some one wanted to know a few weeks ago whether variegated forms of *Barbarea vulgaris* were rare. They are neither rare nor very common—that is, they occur now and then. I cannot, however, say that the variegated kinds are improvements on the normal form—rather otherwise. The Myrtle-leaved Eugenia (*E. myrtifolia*) is a beautiful white flowered hardy shrub. Mr. Mitchinson has it now finely in bloom. It has withstood the severity of the past winters. *Dracænas* in Mr. Mitchinson's garden were to all appearances dead a few months ago, but they are now pushing young plants from the root of the old one, although the main stalk is quite rotten. Jackman's Clematis is now beautifully in flower in several places around here, trained against the front of houses chiefly. Its very large purple flowers are very handsome.

WILLIAM ROBERTS.

**The Mock Orange** is not an easy plant to arrange gracefully as branches, but a few little twigs of the flowers placed in a Violet glass have a good Primrose-like effect.



## THE FLOWER GARDEN.

## WHITE-FLOWERED ALLIUMS.

The Alliums, though large as a family, comprise but few that are really beautiful flowering plants, and none that are popular in gardens except the white-flowered kinds, than which we know but few hardy flowers that are more desirable for purposes of cultivation. Of these the following are the best, and all of them grow from 1 ft. to 1½ ft. in height, viz.: *A. neapolitanum*, *ciliatum*, *sub-hirsutum*, *Clusianum*, all of which bear delicate umbels of pure white flowers on graceful, slender stalks in such a manner as to be admirably adapted for cutting purposes. All are natives of South Europe, perfectly hardy, and if the bulbs are left undisturbed in good rich garden soil they will increase rapidly year by year both in size and numbers. Although the difference between the species just named is not very apparent except to the botanist, it is well to have the four as

mixture I use for all truly alpine plants. My three patches face three different aspects, but I see no difference in their growth. They are all above the ground level from 1 ft. to 1½ ft. The finest piece, formed of three plants, now carries twenty-four heads of flowers, and many have been gathered, so charming are they for button-holes, used in conjunction with sprays of *Thalictrum minus*, which stands very much better than the fronds of the Maiden-hair Fern. Ladies are all charmed with it, and use it in their hats and bonnets. A fourth patch I have lost, and I cannot account for the loss in any way, except by supposing that it was because of its being planted slightly below the ground level in a hollow. In winter, it might have been damp, for by springtime it had rotted away. During winter, I throw all the snow I can get over the alpine, and it is very pleasant to me to see them emerging from their snowy coverlid when thaw sets in. It is one of the best things we can do to imitate their homes among the mountains. In common with all

spikes of bloom until we had enjoyed their beauty. I now grow it in large irregular patches about rockwork on slopes, where its plumes are seen rising one above the other. It shows more effectively planted thus than on the level. It becomes rather untidy in winter, and frost destroys all but the semi-woody portion. It is a great favourite of ours for making wreaths to place on graves. One of our prettiest effects was formed of a groundwork of the leafy sprigs of this *Veronica*, enriched with the pure white flowers of the sweet-scented double *Poet's Narcissus*. The plant is very readily propagated in spring by pulling it to pieces, when the smallest sprig will grow.

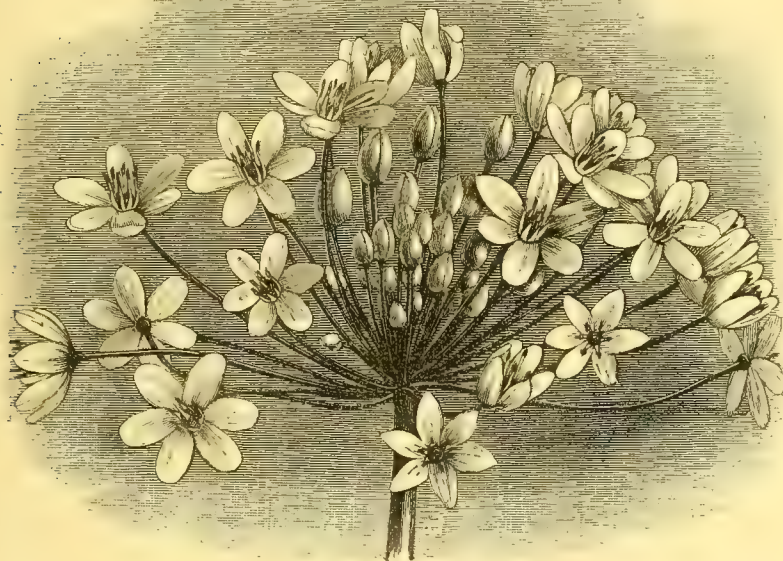
**Funkia.**—Will the Plantain Lily suit this plant as a popular name? The plants bear a fair resemblance in habit of leafage and inflorescence to the familiar Plantain of our fields and roadsides, *Plantago major*; while the *Funkias* are one branch of the very extensive Lily family. [A good name.]

**Dianthus deltoides** (Maiden Pink).—At present, this is one of the prettiest plants on my rockwork. Individually the flowers are small and close in the evening, but in the mass, during daytime, the effect they produce is very telling. From its procumbent habit, its beauty is shown to the greatest advantage by planting it on a slope, down which the stems may lie. It is one of the prettiest of our British native plants, and I am glad to be able to enrol it among our local flora, it being found wild near Conway. I have three colours of it—red, white, and another white with the most delicate shade of pink thrown over it. It grows very readily from seed. Any of our garden Pinks are very suitable for rockwork, but should be planted on ledges, over the front of which they could fall in their own natural manner. Carnations, I am afraid, are too lanky, and any tying up, or staking, or artificial support whatever is inadmissible in good rockwork.

**Deutzias.**—The prettiest shrubs now in full bloom here are the double *Deutzia crenata* and *D. scabra*. The former is smothered with its half-drooping racemes of double white flowers, the outer petals of which are deeply tinged with pink. *D. scabra* has single flowers of dazzling white very freely produced. These two being very accommodating, very hardy, and very effective, and very cheap, ought to be in every garden, large or small. The earlier flowering *D. gracilis*, so commonly used for forcing purposes and generally grown under glass, is perfectly hardy here on our light, warm, gravelly soil. I never saw it so full of bloom as this year. It receives no protection during winter, has been outside six or seven years, and is now between 3 ft. and 4 ft. through every way.

**Veronica devoniensis**, so called by nurserymen, but which I have been given to understand is more correctly *V. Traversi*, is the last of my flock of shrubby *Veronicas*. I had a very nice collection of them a few years ago, but during the three past winters they have become smaller and beautifully less in number. But this variety is so unmistakably hardy, bearing itself so bravely through severe winter, that I am inclined to ask if it is hardy elsewhere. In full bloom it is a lovely sight. The flower spikes are excellent for those who prefer natural flowers to artificial ones in their hats and bonnets. Colour, a very light lavender or heliotrope.

**Primulas.**—Two species of *Primula* are flowering a second time this season—*Primula cortusoides* and *P. farinosa*. Of the latter I have a large colony growing in an artificial bog where they receive plenty of



White-flowered Allium.

they flower one after the other in succession. In spring and early summer Covent Garden is well stocked with these Alliums in a cut state supplied by growers round London who cultivate them in large quantities, and find them a remunerative crop. An advantage these Alliums possess, and combined with their delicate beauty, is that they are quite or nearly devoid of the characteristic Garlic smell belonging to Onions. They all thrive well in an ordinary border of good light soil in a warm situation, and they are also admirable subjects for planting in certain positions in the rock garden. They may be readily propagated by means of the bulblets or seeds.

W. G.

## NOTES FROM CARNARVONSHIRE.

**The Edelweiss.**—"F. W. B." asks for information as to the proper compost in which to grow this interesting alpine. My patches of it, three in number, are growing luxuriantly in a mixture of about two parts good rotting turf from an old pasture, one part peat, and one part coarse sandy grit. The latter contains pieces from the size of a Walnut downwards. This

alpine I supply the Edelweiss with abundance of water; but this year we have had such copious supplies of rain that the hose has been seldom used. One point more—when autumn comes the Edelweiss begins to get ragged and shabby, and in winter shows nothing but a tangled mass of brown or black leaves. I fear, when seen in this condition, that many have concluded it was dead, and have forked it up and consigned it to the rubbish heap—a sad mistake. Have patience, and when the warm genial days of spring come you will soon see signs of life in the little white woolly buds, peeping out and expanding day by day to reward you. At this period I give a little top-dressing of the compost mentioned before with the addition of a little soot to try and keep the slugs away.

**The Grey Speedwell.**—I am glad to find a few words in praise of this plant at p. 33. Both leaves and flowers are ornamental; the former a very hoary white, the latter a purplish-blue. In the days when I had bedding-out on the brain, I used it often as the front row of a ribbon border, but I never could bring myself to cut off the beautiful



moisture. In such a position the flowers are much larger, more lasting, and the foliage much stronger than when grown elsewhere. Among them is a seedling which appears to be a cross between *P. japonica* and *P. farinosa*. It resembles the former in habit, having three distinct tiers, and rising exactly 20 in. high. The flowers and leaves are unmistakably those of *farinosa*, but rather larger than the type.

EDWIN JACKSON.

*Llandegai, Bangor, Carnarvonshire.*

### THE AURICULA.

I HOPE "Peregrine" will not set me down as an infuriated florist who would like to pillory him because he has made use of depreciatory remarks with regard to the labours of the florists in the matter of the Auricula when I take exception at least to some of his statements, and especially to what I believe to be the burden of his complaint, that in improving the Auricula its constitution has been injured, and that hence their labours have been in the wrong direction. As a florist of the old-fashioned kind, and as one who has grown the Auricula more or less for the last forty years, I venture to take up the gauge he has thrown down. With some of the conclusions of my brethren I have done battle, more especially in the matter of dressing Carnations, but in the matter of the Auricula I am altogether at one with them. I know it is a peculiar flower; that to many people there is a stiffness and formality about it that most of the uninitiated do not admire; but there is no flower which excites greater enthusiasm in those who are devoted to it. When increasing age and infirmities have caused florists to drop one after another of their favourites, the Auricula has retained its hold to the last, so that one does not like to hear it underrated.

"Peregrine" speaks of it as that hardy little alpine flower, and deprecates that by cultivation and breeding it has become less hardy; but is he quite correct in these statements? In the first place it is questionable if there has not been other blood imported into it. A German writer says that it has been crossed with other species, but the effect of high breeding must to a certain extent have this effect, and yet surely he would not deny the pains and expense that have been expended in producing for us Master Butterfly or Bend Or, but do we not know that the hardy cow or horse will endure treatment under which these would speedily succumb. But I think it is at least questionable whether this loss of hardiness has really been occasioned. It must have been, says "Peregrine," because when you ask florists about growing it in the open air they shake their heads in true Lord Burleigh fashion, I suppose as it seems so significant, but there are perhaps reasons, and they not altogether idle ones, why this dissent has been made. "Alpinus" has alluded to their dearness. He says, "Compared with Orchids, they are perhaps almost as costly;" and I think if Auricula growers hesitated to make experiments with them in the open air they might well be excused on this ground alone; but there is another point to be considered. The classes green, gray, and white-edged varieties, known as florists' flowers, all possess a mealy paste, and sometimes a slight sprinkling of the same on the edge, and the selfs have the same mealy paste. Now, wet utterly destroys the beauty of this, and, as in the case of many flowers, we prefer keeping them where they may be sheltered from what must destroy or impair their beauty. Some few years ago, before the invasion of the pest that has nearly ruined my collection, I had a few seedlings which were not up to the mark in a florist's point of view, and which, for the sake of seeing what would become of them, I planted out on my little rockery. They have flourished in a very remarkable manner, have spread into large plants, but I cannot say that the result is satisfactory. As soon as the flowers open, if rain comes, they become dragged and dirty

looking, and even in this very dry spring the appearance of even the selfs is anything but prepossessing. The alpinas, as they are called, not having this mealy paste, do not suffer in the same way, and are consequently better adapted for out-of-door cultivation; but I am quite convinced that if "Peregrine" were able to persuade some large grower of Auriculas to plant out some of his choicer varieties, and were to visit them in the following spring, he would be utterly disappointed at the result.

One must deplore the paucity of exhibitors, and, say what we may, there are difficulties connected with its growth. I had a letter to-day from one grower, who says, "I am sure that within the last two years I have lost twelve hundred plants;" another has lost four hundred; my own losses I do not care to think about. Sometimes some uncongenial soil containing some element little expected has wrought woeful havoc, as in the case of one collection in the north that I know of. It increases slowly, and of some sorts it is often impossible to obtain a plant. The demand for them is large, but there are not more than three or four persons who avowedly supply them, though, I believe, many are sold privately; but so many are now engaged in raising seedlings, and so much is reported of the excellence of these (and, indeed, of some of them I can speak most highly from personal knowledge), that there will be less demand for the named varieties, and so, perhaps, more may be tempted to grow and exhibit them.

DELTA.

["Peregrine" pointed out the need of raising handsome hardy forms for the open air not liable to the ills mentioned by "Delta," and that is what is wanted.—ED]

### LILIES AND THEIR CULTURE

THE Lily ranks pre-eminent among herbaceous garden perennials; its brightness, beauty, sweetness, and grace make it a favourite with all. It is more extensively cultivated, in greater request and variety now than ever before, but it has been grown in gardens since time immemorial. Lilies prevail through Central and Southern Europe, in the alpine districts, also the Caucasus, Asia Minor, throughout Siberia to Northern China and Japan. A few fine species occur in the mountains of India, and the United States, east and west, contribute handsomely to the list.

**Succession.**—An uninterrupted succession of Lily flowers may be had in our gardens from the 1st of June till October, which we can govern by a selection of kinds and conditions of growth. With me *Lilium tenuifolium* is the earliest of all, and the double Tiger Lilies the latest; but where they will thrive, *neigherense* and *Wallichianum* would prolong the blooming season for another month. According to a memorandum kept by me of some of our Lilies when in bloom in 1879, the following blooming sequence is obtained: *L. tenuifolium* began to bloom June 5th; *davuricum*, 6th; *pulchellum*, *parvum*, *Martagon*, *Szovitzianum*, *croceum*, and *c. var. umbellatum*, 13th; *Hansoni*, *Washingtonianum*, and *rubescens*, 20th; *elegans*, *e. var. atrosanguineum* and *davuricum var. incomparabile*, 21st; *candidum*, 24th; *canadense*, *Grayi*, *Humboldtii*, and *fulgidum versicolor*, July 4th; *philadelphicum* and *testaceum*, 6th; *longiflorum* and *pardalinum*, 13th; *callosum* and *superbum*, 20th; *auratum*, 26th; *speciosum*, August 2nd; *tigrinum*, 7th; and *tigrinum fl.-pl.*, 10th. These Lilies were not all growing under the same conditions; hence, under other circumstances, a slight variation in time might be apparent.

**Kinds.**—As there are no generally accepted English names for the great majority of Lilies, I must, though reluctantly, use the botanical ones, and thus avoid confusion. The common white Lily is *L. candidum*; the Trumpet Lily is *L. longiflorum*; Canada Lily, *L. canadense*; Wood Lily, *L. philadelphicum*; American Swamp Lily, *L. superbum*; Tiger Lily, *L. tigrinum*; Orange Lily, *L. croceum*; and Turk's-cap or *Martagon*, *L. Martagon*. Beyond these there are but few accepted English names for Lilies; not even is the "gold-

banded" Lily universal for *L. auratum*. For general garden use I would recommend old and tried favourites in preference to new and untried sorts; for instance, *L. candidum* and its variety *speciosum* for white; *longiflorum*, and its varieties *eximium*, *Takesimæ* and *Wilsoni*, white; *speciosum* and all of its varieties, white, rose, and crimson; *elegans* (*Thunbergianum*) and any of its many varieties for scarlet, crimson, orange, apricot, and yellow; *monadelphum*, *lemon-yellow*; *davuricum* and any of its varieties, scarlet, crimson, and orange-shaded, especially its variety *incomparabile*, intense crimson spotted with black; *Szovitzianum*, primrose to golden yellow; *chalcidonicum* (the scarlet Turk's-cap), intense scarlet; *carniolicum*, orange scarlet; *bulbiferum* and its variety *umbellatum*, crimson; *croceum*, orange, and its variety *elegans*, yellow; *tigrinum splendens* and Fortune's double variety, orange-scarlet; *tenuifolium*, scarlet, a little gem; *testaceum*, apricot; *Martagon*, purple, and its varieties *album*, white, and *dalmaticum*, intense crimson-purple; *pulchellum*, bright scarlet, a little beauty; and all the forms of *canadense*, *superbum*, and *philadelphicum*. I would like to add *Humboldtii*, reddish orange, and *pardalinum*, bright orange-red—two splendid Californian Lilies that have done well here.

**New Kinds.**—The following are new, rare, and choice Lilies, which on account of non-extended trial I can only reckon presumably hardy: *L. Parryi*, pale yellow; *Washingtonianum*, white, changing to purple; *rubescens*, just like a pale, rose-purple variety of the last; and *parvum*, yellow, small flowers. These are Californian Lilies, and have a bad reputation in the East, but they have grown and bloomed so well in the Botanic Garden here that I regard them quite sanguinely. Also *Grayi*, like a red *canadense*; *auratum virginale*, white (all the *auratums* are sometimes very fickle; *elegans Batemanæ*, clear orange apricot; *albanum*, yellow; *Leichtlini*, yellow, spotted with crimson; *Hansoni*, golden yellow, spotted with crimson (named in compliment to Mr. Hanson, of New York, and who has an exceedingly fine collection of Lilies); *japonicum*, white, also a pale rose-coloured form—exceptionally fine; and *Browni*, white inside, vinous purple on the outside, very fine. Such of these as will not thrive well out of doors can be successfully grown in pots in the greenhouse. And for pot culture I would likewise recommend all the varieties of the *auratum*, also *philippinense*, white, trumpet blooms 8 in. to 10 in. long on plants 12 in. to 20 in. high; *giganteum*, white, tinged with purple on the outside, the tallest growing of the genus, often 12 ft. high; *neigherense*, white, tinged with pink on the outside, bears larger flowers than any other Lily; they are trumpet-shaped, and 9 in. to 12 in. long; and *Wallichianum*, white, trumpet-shaped, the "prince of the longiflorum section." The three last named are from the mountains of India.

**The Lily Bed.**—The horticultural prescription for a Lily bed is, soil 4 ft. deep, to consist of two parts peat, one part loam, and one part sand. The peat herein inferred is not meadow peat or muck, but that thin fibrous surface-skin often found in woods and hills where water never stagnates, and which is known as upland peat. All kinds of Lilies will grow well in deep, light, rich loamy soil. Unless the peat is good, many Lilies, as *candidum*, *longiflorum*, and *Browni*, positively dislike it; therefore, rather than use meadow peat, I would advise not to use peat at all. *L. philadelphicum*, *concolor*, *pulchellum*, and some others prefer a sandy soil; *parvum*, *superbum*, and *canadense* a moist, peaty one, and luxuriate in meadow peat; and quite a number, as the *Martagons*, *Tiger*, and scarlet Turk's-cap Lilies, while they prefer a loamy soil, will luxuriate in any kind if it be not very dry.

Well-rooted leaf mould is good for Lilies. Green or half-rotted manure should never be introduced to the soil of Lily beds, but old manure, decomposed to an earthy mass, may be beneficially used. The land may be enriched by surface dressings of manure, which may remain



on as a mulching against the winter's frost and summer's sun. A cool, moist, and shaded soil in summer is highly beneficial to Lilies. The soil should be as deep as we can conveniently have it, and as deeply prepared, but it is not necessary to have it 4 ft., or even 2 ft., but the deeper the better. And above all things, let it be well drained.

Lilies will thrive in open, sunny places, provided the ground they occupy is covered over by other plants or a mulching, but many of them, as *philadelphicum*, *candidum*, and our common Lilies, although profited by a mulching, do not demand it. A full sun exposure hastens on and past their flowering time, wilts them in the drouth, and after rain their blossoms oftentimes get scorched. I prefer a sheltered, faintly shaded place, but not under trees. Lilies seem most at home and thrive the best when grown among the bushes, as in shrubbery beds, noting that they be of greater stature than the shrubs; the smaller ones may fringe the front. They look their prettiest dotted in sombre beds of evergreens, but as *Rhododendrons*, *Retinosporas*, *Mahonias*, and the like are greater strangers than Lilies in the farmer's garden, we had better set them in our Rose beds, between the *Deutzias* and *Diervillas*, in clumps along the border, or in old nooks, where little else will grow, and they may rest in peace.

**Planting.**—As soon as Lilies have done blooming they may be lifted and transplanted safely, but it is far better to delay interfering with them till the stems have died down; from which time and till just before they begin to grow afresh is the proper season to shift and plant them. With *L. candidum* this is from July till August; most other kinds from autumn till spring. Lily bulbs should be planted some 6 in. to 12 in. deep, according to their age, size, and kind. In light ground the depth may be greater; in heavy, less. Californian Lilies, especially, should be planted very deep. In planting carefully observe that no piece of manure or clod of peat comes in contact with the bulbs, else rust and rot may ruin them. It is not well to keep Lily bulbs out of the ground and in a dry place for some weeks or months as you would a Hyacinth or Tulip; they are not solid bulbs, but scale bulbs, and suffer much by such exposure. If of necessity they must be kept unplanted, pack them in sawdust, sand, earth, or leaf mould; and if you desire to send them from one place to another, sawdust is about the best thing you can pack them in.

**Propagation.**—This is the most tedious, difficult, and least understood part of Lily culture. All Lilies may be propagated by seeds; some seed freely, others scantily. Seedlings throughout retain their specific identity, though they may differ considerably in variety, as may be seen among our native Lilies in the woods, meadows, and swamps. The seeds had better be sown as soon as ripe in light earth in pots or boxes set in a cold frame, or plunged in some sheltered border, away from drying sunshine and drip; or they may be delayed till spring or summer, and then sown as before stated, or kept in the dwelling house or greenhouse. I find that in a night temperature of 60° *L. tenuifolium* germinates in eight days, pulchellum in ten, longiflorum and davuricum in twenty-one; *Martagon* and *tigrinum* germinate within a few weeks. Mr. C. M. Hovey tells me the seeds of *auratum* and *speciosum*, if sown as soon as ripe, germinate the next spring; if not sown till spring they do not appear till the succeeding autumn, and many of them not till the following spring. I have just sown a number of kinds in order to ascertain the time it takes them to germinate and bloom from seed. It usually takes them from three to seven years to bloom from seed. Lilies are propagated by increase of bulbs at the root, also by bulblets on underground stems, as in *Leichtlini*, or axillary ones above ground, as in *bulbiferum* and the *Tiger Lilies*. To form blooming bulbs, these bulblets have about a year's start of seedlings. Bulbiferous Lilies bear seeds sparingly; but if the bulblets be removed early,

seeds will be borne as freely by other kinds. The outer scales of Lily bulbs are removed and used in propagation in like manner as we use the leaves of *Echeverias*. This method is extensively practised, especially in the neighbourhood of Haarlem, Holland.

**Hybrid Lilies.**—Many have endeavoured to secure new Lilies by hybridisation, but nearly all have failed; indeed, the genus *Lilium*, even in repeated generations, most stubbornly resists an intermixing of its species. To two Boston cultivators, named Francis Parkman and P. Brown Hovey, belong the honour of having raised the two finest hybrid Lilies extant, which are *L. Parkmani* and *L. Hoveyi*. Both are hybrids between *auratum* and *speciosum*; the first is like a deep red *auratum*, and the second like a deep red-banded *auratum*; each one expanded measures 1 ft. across. Beyond these two I do not know nor have I heard of as many as half-a-dozen authenticated hybrids either natural or artificial. —*Country Gentleman*.

### HYBRID PLANTS.

VARIOUS accounts of hybrid *Aquilegias* have from time to time appeared in THE GARDEN, and the remarks that were made about them in a recent number, following the notice of Mr. Rawson, must have struck others, as they certainly struck me, somewhat with surprise. I have always looked upon hybridisation as the mode in which many of our beautiful garden plants are produced; in fact, is it not to this we owe so many of our Pinks, Pansies, Phloxes, *Campanulas*, *Saxifrages*, and other garden flowers, to say nothing of *Roses*? And are not our borders and rockeries in a great measure stocked with hybrid plants? No doubt a great deal of this hybridising is artificial, but there are plants which undergo variation in a natural way without any care on the part of the cultivator, and, so far as my experience goes, no plants are so open to this natural variation as *Aquilegias*. I have an abundance of these beautiful varieties in my garden, but they are all, without exception, the results of natural hybridisation; indeed, though possessing upwards of 1200 distinct perennials, many of which show a tendency to vary from seed, I never hybridised a single plant in my life. I care, in fact, very little for what are called gardeners' varieties, and admit very few of them into my collection; but in some cases, and notably in *Aquilegias*, I find I cannot help myself. After *Aquilegias*, perhaps *Campanulas* (especially those of the *turbinata* type) are the most troublesome in this respect. They seed themselves with me in all directions, and the result is a pleasing, but very confusing, variety of colour, ranging from dark to light blue, pure white and dark with white centre. In one case the variation extends to the form of the flower, which is not bigger than an ordinary *Buttercup*. Now if these natural variations are against good taste in gardening, the question is with those who, like myself, do not practise the art of hybridisation, how is it to be prevented? If there is no remedy for the evil, I cannot see why beautiful plants, the result of natural crossing, are not quite as worthy of notice as those which the hand of the craftsman produces. F. M. BURTON.

*Highfield, Gainsborough.*

**Senecio absinthifolius.**—As to Mr. Wolley Dod's query concerning this, it should have been written *S. abrotanifolius*, which is also distinct from *S. artemisifolius*. Our plant of this we had from Mr. Niven, of Hull. It is a showy, clear, yellow species, with umbels growing 2 ft. above a carpet of Camomile-like leaves. The small heads of which the umbels are composed are about  $\frac{1}{2}$  in. in diameter. The foliage of *S.*

*abrotanifolius* is similar to that of *S. artemisifolius*, but the heads are larger, fewer in number, and of a good orange-yellow colour.—T. D. HATFIELD.

### Souvenir de Malmaison Carnation.

We hear of a gardener in Essex growing this plant so successfully that seventy-five pounds were obtained at a bazaar from one day's cutting!

**Tom Thumb Pinks.**—We have some of these from Messrs. Dicksons, of Edinburgh, about 4 in. in height, cut over at the ground. We hope that such a desirable little race will have encouragement.

**Trollius europæus.**—This is well established on the banks of the river Taff, about three miles from Cardiff, where I have gathered specimens four successive years. *Ornithogalum umbellatum* also grows on the same river-side, about ten miles from the town.—T. CHAPMAN, Cardiff.

**Calceolaria Kellyana.**—This curious and rather ornamental Alpine plant, received recently from Mr. Ware, of Tottenham, is now in bloom in my border. Its foliage almost exactly resembles that of one of the large-flowered *Mimuli*, creeping along the ground and apparently being quick to increase, as my plant has quite doubled itself in size during the three or four months I have had it, and is now bearing fifteen flower-stems of from 6 in. to 9 in. high, with from four to six medium-sized yellow pips on the top of each stem. It is reported to be perfectly hardy, and I should say it would prove an acquisition as an ornament to the rockery.—W. E. G.

**Campanula Waldsteiniana and Tenori.**—We have several charming tufts of *C. Waldsteiniana*, some of them 1 ft. in diameter, consisting of hundreds of erect wiry stems about 5 in. or 6 in. high, bearing beautifully formed pale blue flowers about  $\frac{1}{2}$  in. in diameter. So closely are the flowering stems congregated, that the plants show little else but flowers. They thrive luxuriantly in limestone soil in a sunny position. *C. Tenori* (*C. Thomasi*) is equally beautiful. Its flowers, which are pale blue, are borne on freely-branched, graceful stems about 10 in. high. It is quite as floriferous as *C. Waldsteiniana*, and remains longer in flower. A similar soil and situation suits it. No really good collection should be without these beautiful species, and they might well replace some of the more rambling kinds.—J. D. HATFIELD.

**The Padua Rue** (*Ruta patavina*).—This really charming, highly ornamental, and most free-blooming miniature hardy plant is now in full and profuse bloom in my garden, and is the admiration of all who see it. I received it in the shape of a small plant, early last summer, through Messrs. Rodger, McClelland, & Co., of Newry, from that well-known introducer of new and rare plants, Herr Max Leichtlin, of Baden. The first season it bloomed, but not abundantly. During the severe winter the plant almost disappeared, but grew and extended itself underground to a really surprising extent, and with the spring appeared numerous bunches of small shoots from the roots surrounding the parent plant, each of which, though only from 3 in. to 6 in. in height, is now bearing a good sized truss of clear canary-yellow blossoms, somewhat resembling those of one of the smaller varieties of *Hypericum*. This pretty plant should prove a valuable addition to the list of those suited for the decoration of our hardy rockeries.—W. E. G.

**Clematis Miss Bateman.**—One use to which Clematises are not yet largely put, and for which they are specially adapted, is that of graveyard or cemetery decoration. We have in our little graveyard here a plant of that beautiful white kind, Miss Bateman, trained over galvanised wire, that surrounds a name plate to a grave, and anything more elegant or appropriate it would be difficult to find. By the side of such a floral setting of the few words that record the name of the dead, head-stones look gaunt and bare. This fact further shows that, howsoever galvanised



wire may affect the wood of wall trees, it does not exercise any deleterious influence upon that of the Clematis. Some good effects might be got by planting a spring and autumn blooming kind on either side of a grave, and training them over coarse wire-work, fixed over the mound. Such a combination would keep up a show of flowers all through the summer.—A. D.

**Harris' Lily** (*Lilium Harrisii*).—The following is from the report of the New York Horticultural Society: "Mr. W. K. Harris, Philadelphia, showed a new Lily (*Lilium Harrisii*), which deserves special notice on account of its alleged peculiar characteristics. Apparently a variety of *L. eximium*, it differs widely from that species by flowering when young and much earlier than *eximium* when forced along with it in the same house. Besides its early flowering, it has the peculiarity of sending up flowering shoots from bulbets formed during the season of growth, thus extending its flowering season for a long period. These peculiarities greatly recommend it, not only to the cultivator of cut flowers, but also to the amateur, as capable of filling up the period of mid-winter with the always acceptable flowers of this universally admired tribe of plants. It was awarded a certificate of merit. This Lily seems related rather to *L. longiflorum* than to *L. eximium*. Still, as there appeared some slight difference, it was sent to Mr. Sereno Watson, who decided that it was nothing but *L. longiflorum*. Subsequently a plant of *L. longiflorum* was procured, and both flowered side by side. The leaves are shorter and narrower, and the flowers much longer, but though a good garden variety and worth naming, it is specifically where Mr. Watson placed it, and may be called *L. longiflorum Harrisii*, or *Harris' Lily*.—*Gardener's Monthly*.

**Double Helichrysums**.—These have their merits and demerits. Amongst the former may be named hardiness, thriving well during drought, handsome foliage, and great abundance of beautiful double flowers. The chief demerits are somewhat weak flower-stems, that will not always keep the blooms erect, and the need in rainy weather of some sticks and ties to keep the flowers from falling. Perhaps in time these defects may be got rid of by selecting seedlings that have a stout dwarf habit and strong erect flower-stalks. Still the defects are trifling compared with the many good properties which the plants and flowers possess. When shown as cut blooms at flower shows, visitors have remarked the resemblance which some of the finest double kinds bear to a good double Aster. But these double flowers are shown in a somewhat unnatural form, as when growing on the stems they are elegantly reflexed, and have by no means that stiff, flattened, or globular form found in Asters. For the supply of cut flowers, the double *Helichrysum* is admirable when the plants have become strong, and produce flowers in scores, not large ones, but neat medium-sized blooms, of which, being so abundant, many may be cut, and yet enough left to keep the plant looking gay. As to propagation, nothing can be more simple. The plants need dividing carefully, and that is all; and that should be done in the autumn. Of sorts there are abundance, all pretty, but some of the newer ones are undoubted improvements on the older kinds. The deepest colour, a rich reddish crimson, I have found in Captain Nares, but lighter hues are plentiful.—A. D.

**Zinnias**.—It is surprising, considering the usefulness and brilliant effect which Zinnias produce, that they are not more cultivated than they are, especially as they can be so easily raised and managed, all they require being a little warmth to get the seed to germinate freely, and the protection of a frame till the plants become sufficiently hardened for turning out into the open ground. The way in which Zinnias look best is in masses, such as may be formed by planting them in large circular beds, as then the mixture of colours blend well together and show up to the greatest advantage. To grow them well, with fine heads of bloom, the soil must be rich and deep, for, like all annuals, they are fond of a good

root run; for, unless they can send their fibres well down in search of moisture, they flag, and thus lose much of their beauty. To prevent this it is a good plan to mulch the ground among the plants with leaf mould or very rotten manure, through which they can be watered or receive a soaking or two of liquid manure during hot weather. As Zinnias like sun, the site for them should be an open one, but sheltered. The plants being tender, the great point is not to sow too soon or plant out before the end of May, as they get pinched at starting; and even should they escape frost and survive, they never do so well afterwards. If the seed is got in by the end of April, that is quite time enough, as it is soon up, and the growth is rapid, and particularly if the plants get a slight bottom heat after they are pricked out, which is a great help to them; but to prevent the tops drawing when they are so favoured, it is necessary for them to have plenty of air. Not only do Zinnias make a grand display in beds or borders all through the summer and autumn, but they are suitable for cutting, and last well in water in which they keep fresh for a considerable time.—S. D.

**Plantain Lilies**.—Henceforward we propose to use this as the English name of *Funkia*. It is suggested by Mr. E. Jackson, and we do not know a better name. Anyone who doubts this should see a large bed edged by F. Sieboldi in Hyde Park now, in which the name is almost justified by the resemblance of the foliage to that of the



Variegated-leaved Plantain Lily.

tropical Plantains. The well known London bulb merchant will give the prize in autumn at the planting season. The plants deserve better and more attention at the hands of flower gardeners, and the white Plantain Lily, *F. japonica* (or *grandiflora*) is an excellent plant to grow in pots. It will be found eventually that



Siebold's Plantain Lily.

these plants have more merits than has been supposed. All that is wanted is good culture and well chosen positions. If we only had Siebold's and the beautiful white flowered Plantain Lilies, the family would be an important one; but other plants of the genus are also valuable from a garden point of view, and we hope Mr Barr will follow them up with his usual energy so as to

clear the synonymy, and above all select the best kinds.

**Campanula turbinata var.** This is a saucer-shaped and nearly flat form of this plant named *pelviformis*. It comes from Mr. W. E. Gumbleton. It seems a very good rock plant; there are so many good plants for the rock garden in the family, that one could make a pretty rock garden of them alone.

**Autumn-sown Annuals**.—Is it not strange that so few make a practice of sowing hardy annuals in autumn? When one considers how very hardy many of the finest kinds are, how bravely they pass unscathed through the most inclement winters, and what a grand display they make long before the summer occupants of our garden can present their true character, one may express surprise that this easy method is not general. Many object to the employment of annuals generally in the summer garden, urging that they create a blank in the arrangements just when bare flowerless places are most to be dreaded. However this may be, it is certain that such an objection cannot hold good in the case of such kinds as may be sown in the autumn and brought safely through the winter in the open air. These, steadily gaining in vigour, will have attained considerable dimensions by the time it is considered advisable or safe to commence sowing in the open ground. They come in fact into full bloom just as the spring-sown plants begin to make earnest signs of growth, fulfil their mission, and may be replaced with summer-blooming subjects before June is far gone. Those who may never have grown hardy annuals in this manner can scarcely form a true idea of their value, for even with the best of treatment spring-sown plants never rival in vigour and profusion of bloom those that have been occupied during a period of some six months in getting a firm grasp of the soil. There are few things in the way of a floral display prettier than large highly-developed specimens of *Clarkia pulchella*, *Collinsia bicolor*, and such as have a like manner of growth; or broad patches of *Saponaria*, *Nemophila*, or compact healthy tufts of the bright cheerful-looking *Leptosiphons*. At all times during the summer the display of bloom that such plants afford is grateful, but more especially is it welcome when our gardens are not yet so full of colour as one might desire. About the middle of August choose a piece of ground in as sunny and wind-blown a situation as can be found. Turn it up roughly, and let it lie thus for a fortnight, and then it will have become thoroughly sweetened, and in the best of order for the reception of the seed. Sow in lines some 6 in. apart, and as soon as the young plants are well up thin them out to

3 in. or 4 in. apart, and give them a top-dressing of soot, which will keep slugs at bay, and will impart as much vigour of growth as is desirable at this stage. In the enjoyment of a maximum of air and sunshine these little plants will acquire a sturdy development, and when later on removed to their permanent quarters, they will have gained so much in strength that they may be relied upon to pass the winter safe. The earlier in September they are planted the better, as then they get firm

hold of the soil by winter, and are not so likely to get thrown out by hard frosts.—*Field*.

**Hollyhock Mallow** (*Malva Aacea*). This seems plentiful in the cottage gardens about Ambleside, and it is beautiful; the *Corn Marigold* (*Chrysanthemum segetum*) also ought to be grown in gardens. It is more beautiful than the *Paris Daisy* *Etoile d'Or*, but unfortunately I fear it is but an annual, and it is not to be had in the seed shops.—E. H.



## THE ROSE GARDEN.

### PROPAGATION OF OWN ROOT ROSES.

Few operations are more fascinating than this, and few less difficult to accomplish. The secret lies in beginning at the right time and in using the right sort of materials. August and October are the months in which cuttings may be taken, which, with a fair amount of care, will produce from 60 to 70 per cent. of plants. I am, of course, alluding to plants grown in the open air, and whether standards or in beds or borders, they must be in bad condition if they will not furnish a few cuttings now for this purpose. If you want to make plants at express speed you must have a hotbed specially prepared, but if you are patient a hotbed is not absolutely necessary. With one properly made you can get rooted plants in six weeks, but if you have only an old Cucumber or Melon bed you must be prepared to wait two or three weeks longer. In my own practice, and I have here many hundreds of own root plants, I have invariably struck them in a frame from which a stock of Cucumbers or Melons has been taken, and I have no fault to find with the results.

**Pots and Soil.**—If we begin early in August we must prepare some 6-in. pots by having them well crocked; over the crocks put a layer of rough peat or loam. The best soil for the cuttings to root in is loam and leaf soil in equal parts and a good quantity of coarse silver sand, the whole to be run through a fine sieve. The pots must be filled to within  $\frac{1}{2}$  in. of the rim and well watered. An important point is to have everything ready, so as to do the work off-hand in an expeditious manner, from the moment the cuttings are taken until they are inserted in the pots and shut up in the pit or frame, for if allowed to lie about and flag it takes them some time to recover.

**Hybrid Perpetuals.**—All Roses may be increased in this way; but I am now referring to Hybrid Perpetuals chiefly, and if anyone has a few old plants of these on their own roots planted out in the ground, they will have no difficulty in finding cuttings, for, besides the flowering shoots, they generally send out some strong growths from the base, which, if not too soft, will furnish admirable cuttings; but plants on the Manetti, or any other stocks that have shoots on them which have flowered this season, will furnish cuttings. I prefer moderate sized side shoots of the current season's growth, all of which will answer but the soft sappy tops. They may be cut into lengths, each containing three or four buds. The base of the cutting may be a joint cleanly cut. There must be in every case one leaf left entire upon each cutting, and in some cases two, but one is absolutely necessary in order to sustain the cutting until it has roots to support itself, and what is equally important in the after-management, these leaves must by judicious attention be kept in a fresh green state for at least ten days or a fortnight after the cuttings are put in. Five cuttings should be placed in a 6-in. pot, and no more, as it is important that the leaves should not be crowded, and they should hang as much as possible towards the centre of the pot—not over the side, where they are liable to get injured. The base of the cutting should rest firmly in the soil, which should be pressed quite firm. The proper way is to get a few cuttings at a time, and as soon as they are made and inserted in the pots to give them a gentle soaking from a water-can to which a fine rose is attached; then take them at once to the frame or pit in which they are to be kept. For the first three or four days they should be in darkness, and no air should be admitted.

Every evening both the cuttings and the sides of the frame should be gently damped with a fine-rosed watering-pot. After the fourth day some light may be admitted, but directly the sun shines upon the glass it must be shaded, and the brighter the weather the thicker must be the shading, which simply means that instead of one mat, two should be used. From this time a thin wedge of wood about  $\frac{1}{4}$  in. thick should be placed under the light in the evening on still warm nights, and be removed again in the morning, which will be all the air they require until the cuttings show signs of making growth, and then they may have the same quantity of air during the day except when there is a drying wind. Then the frame must be kept close, as a fierce drying wind will do as much harm as several hours' strong sunshine. As the young plants advance in growth the amount of air must be increased.

**Watering and Repotting.**—The soil about the cuttings must at all times be kept moist, and a fairly moist soil means a genial growing atmosphere which will promote the formation of roots as well as top growth. As a rule, about the end of the fourth week both air and water may be safely increased, assuming always that the cultivator takes into consideration the state of the weather, for, as a matter of course, in dry, parching weather more water will be required than in dull weather when the air is heavily charged with moisture.

**August Cuttings.**—These are best shifted singly into 4-in. pots as soon as they are sufficiently rooted, using a compost of half-leaf soil and loam with some coarse sand. As soon as they are potted off they must be replaced in a close pit or frame for a week or two. Through the winter they should be kept in some glass structure from which the frost is excluded, and in the spring they will be ready for any purpose for which they may be required.

J. C. CLARKE.

### TYPICAL ROSES.\*

TO KNOW the peculiarities which pertain to certain families of Hybrid Remontant and other Roses, would be advantageous to different people in many ways. There are some types, such as the La Reine, Jules Margottin, Victor Verdier, and Giant of Battles families, which are quite marked in their characteristics. If all new Roses were classified or described as being of such and such origin, or as belonging to a certain class, it would be of great value. The nurseryman is unwilling, with some exceptions, to undertake the propagation of a kind which will not root and grow freely; he also desires such as are of healthy habit and good constitution in addition to excellence in colour and form of flower. The amateur, perhaps, would not knowingly purchase a variety devoid of fragrance, or one which is not a free autumnal bloomer. The florist would require, perhaps, that a variety should be of steadfast colour, one that does not quickly fade; or that it should be useful to force, yielding flowers in abundance, &c. If, therefore, new Roses were described as belonging to the La Reine or Victor Verdier type, we should have some very important knowledge of their qualities, since these Roses have imparted to their progeny certain distinct attributes by which they may readily be distinguished from others. A consideration of the different prominent types found among Hybrid Remontant Roses may be studied with interest and profit.

#### Baronne Prevost Type.

The year 1842 ushered in to Rosarians what is now the oldest type of Roses in the class, viz.:

\* Read by H. B. Ellwanger before the Western New York Horticultural Society.

Baronne Prevost. This is not a numerous family, and is also of less importance to us than many of the others, but we can well imagine what pleasure it gave, in years gone by, to the rosarians of the day. This type makes long stout shoots, fortified with red thorns of unequal length, but generally short; foliage rather oval, somewhat crimped; flowers large, or very large, of flat shape, very full, fragrant, of some shade of rose. It is the most hardy type we have. Varieties: Boieldieu (1877), Colonel de Rougemont (1853), Madame Boll, Odeur Vital. They are all free bloomers in autumn.

#### Geant des Batailles Type.

The founder of this family was raised by Nerard in 1846, and doubtless has Bourbon blood in its veins. The colours are various shadings of crimson, very rich and effective when in perfection, but very fleeting; the sun soon gives them a muddy hue. The flowers are well shaped, but small, and have slight fragrance; they are very freely produced in the spring and summer months, but, as a rule, not in the autumn. The shoots are of moderate or short growth, short jointed, erect, very stiff, and covered with very numerous reddish thorns. The foliage is of lustrous dark green, very subject to mildew. They are difficult to propagate from cuttings, and liable to injury from frost. The leading sorts are: Arthur de Sansal, Cardinal Patrizzi, Crimson Bedder (1874), Emperor de Maroc, Eugène Appert, Eveque de Nîmes, Lord Raglan, Louis Chaux, Mrs. Standish, Vainqueur de Solferino.

#### Jules Margottin Type.

In 1853 Jules Margottin, of Bourg-la-Reine, near Paris, sent out a fine Rose, which he called after himself; though he has been raising seedling Roses ever since, none of them have quite come up to this in worth. Wood, light green; sharp, red thorns, somewhat numerous; shoots rather stout and generally of vigorous growth. Crimped foliage. Flowers of large size, very full, somewhat flat shape, mostly shades of rose and carmine, almost without perfume; generally free in the autumn. They are very hardy; as a rule difficult of propagation from cutting, but making very vigorous plants when budded. Abel Grand, Achille Gonod, Berthe Baron, Bessie Johnson (quite fragrant), Charles Margottin (reddish crimson), Claude Bernard, Comtesse de Serenye, Duchesse de Vallombrosa, Edouard Morren, Egeria, Emily Laxton, John Hopper, Magna Charta, Madame Gabriel Luizet, Madame Lacharme, Madame Louis Leveque, Mademoiselle Thérèse Levet, Marchioness of Exeter, Marguerite de St. Amand, Marquise de Castellane, Miss Hassard (scented), Monsieur Noman, Peach Blossom, Princess Mary of Cambridge, Rev. J. B. Camm (very sweet), are the leading sorts.

#### Victor Verdier Type.

The head of this family originated with Lacharme, of Lyons, and was sent out by him in 1852. It is doubtless from one of the La Reine type crossed with some monthly Rose, probably a Bourbon. The descendants are very numerous, and in spite of their rather tender habits form a valuable group, being the most free flowering of them all; had they but fragrance they would be unrivalled; but, alas! they are devoid of scent, and therefore cannot rank as high as the others. Fine feathers alone do not constitute fine birds, and surely fragrance is to the Rose what song is to the bird. The shoots are of moderate growth, stout, upright, nearly smooth, of a reddish green, with an occasional reddish thorn; the foliage is very large, of a deep lustrous green, very attractive. The flowers are large, well built up; generally shades of rose and pink prevail. It is the best



adapted for forcing in winter of all the families. The leading varieties grown are André Dunand, Captain Christy, Charles Verdier, Countess of Oxford, Etienne Levet, Hippolyte Jamain, Julius Finger (1879), Mme. Geo. Schwartz, Mme. Devert, Mme. Eugène Chambeyrat, Mme. Louis Donadine, Mme. Maxime de la Rocheterie, Mdle. Eugénie Verdier, Marie Cointet, Marie Finger, Mrs. Baker, Oxonian (somewhat fragrant), President Thiers, Pride of Waltham, Rosy Morn, Souvenir de President Porcher.

### La Reine Type.

In 1844, Laffay introduced what he loyally named Rose of the Queen (Rose de la Reine). This variety bore royal sway for many years; it not only still sells well and is to be considered a useful Rose, but it should also have our esteem as being the parent of a most useful family. The wood is light green, furnished with occasional thorns, of strong growth; foliage pale green and crimped. Flowers various shades of rose, generally of semi-globular form, large, somewhat fragrant, free in the autumn, quite hardy, enduring more cold than any of the other families except Baronne Prevost. The leading sorts are—Anne de Diesbach, Antoine Moutin, Auguste Mie, Belle Normande, François Michelin, Gloire de Vitry, Lælia, Louise Peyronny, Madame Alice Dureau, Mme. Nachary, Paul Néron, Reine du Midi, Ville de St. Denis.

### Gen. Jacqueminot Type.

In 1852, the head of what is now considered the most valuable type made his bow to an admiring world; clad in rich crimson livery, he still commands respect and admiration, and marshalled under his generalship is the army of dark Roses which so excite and please our senses by their charms and loveliness. This family probably originated from the old Hybrid China Gloire des Rosomanes; they are moderately hardy, but less so than those of the Baronne Prevost, Jules Margottin, and La Reine types. The flowers are invariably shades of red and crimson, generally highly perfumed, freely produced in the spring, but varying greatly as to their autumnal bloom. As a family they are much more shy in the autumn than any of the others. The shoots are of vigorous growth, not very thick, generally upright, with quite numerous light green spines; the foliage handsome, rather pointed. It is now the most numerous of the families, popular taste inclining more towards crimson than to light coloured Roses. The leading varieties are Alfred Colomb, André Leroy, Anne Alexieff, Beauty of Waltham, Camille Bernardin, Charles Lefebvre, Duke of Edinburgh, Empress of India, François Fontaine, Gloire de Santhenay, Marie Baumann (mod. growth), Marie Rady, Maréchal Vaillant, Maurice Bernardin, Oriflamme de St. Louis, Pierre Notting, Prince Camille de Rohan, Prince de Porcia, Prince Arthur, Sénateur Vaisse, Triomphe d'Amiens, Triomphe des Beaux Arts, Triomphe des Rosomanes, Xavier Olibo (dwarf growth). Sub-divisions of this type occur, which may be classed as follows: Charles Lefebvre family, with light reddish-green wood and foliage, and occasional pale red thorns. The flowers are more wavy in outline than in the other families; the growth is somewhat less vigorous, the wood more smooth. Dr. Andry, Glory of Cheshunt, Harrison Weir, Horace Vernet, Lord Macaulay, Mme. Anna de Besobrasoff, Marguerite Brassac, Mrs. Harry Turner, Paul Jamain, and W. Wilson Saunders are the leading kinds. A second division of this type would be the Duke of Edinburgh family, with long growing, light green wood, and a few small light green spines. Flowers are thinner in petal than the others,

rather smaller, burn much more quickly in the sun, and are not constant in autumn. It is a very beautiful family when grown in a moist, cool climate, but there are very few of the members that will do well under our hot sun. The varieties best known, mostly of recent origin, are: Brightness of Cheshunt, Dr. Hooker, Duke of Connaught, Duke of Teck, Robert Marnock, S. Reynolds Hole, Sultan of Zanzibar, The Shah. A third division takes in the Alfred Colomb family, having a similar habit of growth to the Gen. Jacqueminot type, but the thorns are less numerous and with more of a yellowish hue. The flowers are more globular, stand the sun better, and are much more freely produced, constituting a most valuable family. The varieties are: A. K. Williams, Fisher Holmes, Wilhelm Koelle. A fourth division includes the Sénateur Vaisse family. This is of moderate growth, with smoother wood than most of the others, and rather more perfectly formed flowers. The foliage is more round, and perhaps of a deeper green. Madame Victor Verdier, Mons. E. Y. Teas, and Mrs. Laxton form the leading members.

### Monsieur Boncenne Type.

This type was introduced in 1864 by Liabaud, and gives us the darkest Roses we have. From appearances we should think it originated in a natural cross between varieties of the Giant of Battles and General Jacqueminot types. They are of dark green wood, with few thorns, rather long shoots of somewhat spreading habit. The two varieties first named are of very vigorous growth, and resemble each other so much as to be considered synonymous. None of these bloom freely in the autumn, but they are magnificent in their dark velvety shades as seen in the spring. Baron Chaurand, Baron de Bonstetten, Abel Carrière, Henry Bennett, Jean Cherpin, Jean Liabaud, Jean Souperet, and President Leon de St. Jean comprise the family. This about exhausts the divisions which can be considered distinct types. Though there are other Roses which stand aloof, they have no followers. Such are Baroness Rothschild, Mabel Morrison, Caroline de Sansal, and a few others. On examination it will be found that none of these types combine all excellencies, but that the Alfred Colomb, Charles Lefebvre, and Sénateur Vaisse families have more good points concentrated in them than the rest. It is from these types that we have the most to hope for, as the seed parents of the better varieties which shall be raised in the immediate future; but hybridisers should seek to blend the excellencies which pertain to other families with the good features of these. Having this aim in view, we may hope in confidence for a deep crimson Marie Baumann of vigorous growth, a fragrant Eugène Verdier, a white Alfred Colomb.

**Roses in Cool Houses.**—One of the most delightful uses to which a cool house could be put would be the protection and gentle advancing of a great number of beautiful hardy plants and shrubs. Our climate allows of the growth of an immense number of things from all countries, which, owing to our variable springs, are often spoiled just as they bloom. This may be observed in the case of the flowering of many things, from that of the Christmas Rose to the Lilac bush. Some great advantages we should secure in the case of many of these things by the cool house, large, well constructed, permanent, placed in a sunny, sheltered, and well-drained spot: by growing a number of the flowers just named properly and shrubs in pots, we should be able to gently advance their blooming season by a few weeks, and also protect the bloom efficiently during the whole of the flowering period. In talking to Mr. George Paul the other day about the possi-

bility of the culture of Roses in this fashion, either planted out or in pots, he said that a great deal of a most desirable kind of Rose culture could be carried out in the cool house. Some of the best Roses he ever showed were, he said, brought forward in an unheated house. The only difficulty would be mildew, which, after all, might be overcome by some other mode of distributing the fumes of sulphur than that afforded by hot-water pipes. In the case of Roses in pots, a movable roof would not be necessary; but in planting out Roses on the system so extensively adopted in America, or in any other way in such houses, it would be necessary to have the roof-light movable, so that the whole can be exposed to the healthful influence of the open air in summer. In this way we could secure a noble bloom of Roses indoors, and prolong the season of the Rose without artificial heat.—V.

### RAMBLES OF A PLANT COLLECTOR.

I was asked one day by Messrs. Veitch if I would like to collect plants for them in Japan, and without a second thought I said yes, my greatest ambition being to go abroad. I left London on February 1, 1877, and in due time arrived at Hong Kong, and then Ningpo. My object in visiting Ningpo was to find a "Lilac" I had heard about. It was said to be in a certain garden, easily found. I knew the owner of the garden, and obtained permission to take any plant I found there. I searched in vain, however, and therefore made up my mind to start at once for the Snowy Valley, some 60 miles up the Ningpo river. We travelled all night with the tide, and in the morning anchored at the foot of the hills. As Fortune says, they were a mass of white, from the numerous Spireas and Exochordas which grow on them. Lauro-petalum chinense was in masses, creeping over the rocks, covered with creamy-white flowers. A pretty Habenaria grew along the damp edges of the rocks, and a miniature Vanda, like V. teres, covered them in many places. Pinus sinensis, Cunninghamia sinensis, and Taxus were growing in a few places. Trees were very scarce. I found a spring-flowering variety of Angraecum falcatum on the large Yew trees round the Chinese graves. This is evidently different from the Japanese variety in its season of flowering, the latter being August. I am speaking now of about April 10. I found the natives here rather troublesome, so I determined to try another place in order to get up the hills to the temple in the Snowy Valley mountains. In a few hours we reached a place called Ning-cum-jow, and on our way there we passed a high cliff on the left bank of the river covered with Polypodium and Spireas, with here and there a Wistaria hanging down sometimes 50 ft., and covered with flowers. As I walked over the hills I found the plants most common were Daphne indica alba, rubra, and Cæsalpinia sepiaria, Akebia quinata, Cerasus japonica, Pinus sinensis, evergreen Quercus glabra, and a deciduous Oak forming the thick scrub bushes. After leaving the town I saw some well-kept vegetable gardens, in which were grown Garlic, Onions, Cabbage, Fritillaries, Cotton, Rape, Wheat, Beans, and Peas. I did not find the "Lilac" or anything new to me here after searching the hills several days, so I returned to Ningpo and Shanghai.

I now prepared to proceed to Japan, and as the steamer was leaving the following day I went to get my ticket. As I came out of the office I was struck by seeing a bunch of lilac flowers in a native's hand on the opposite side of the road; it appeared to be Persian Lilac. I asked him where it grew, and he said in his garden. I asked him for a flower, and he gave me the lot. Then I found out to my inexpressible delight that it was the very "Lilac" for which I had been



looking. I went with the man to his garden, or rather small nursery, in the midst of some Rice fields, and there I saw about 160 large bushes of my "Lilac" in full flower—a perfect mass, intermixed with young purplish leaves. I found it was not a Lilac, but a *Daphne*. The flowers issue from every joint in bunches on shoots  $2\frac{1}{2}$  ft. long. I have seen flowers from the ground to the top bud like a stick bound round with Lilac. It is in bloom from the latter end of March till May, and I think when properly understood and acclimatised in England, it will prove a valuable plant for forcing. It thrives only in yellow loam and leaf-mould; the Japanese variety I afterwards found is not so particular as to soil, but the flower is inferior. These plants have proved perfectly hardy in England; some of them planted in stiff gravelly clay have done remarkably well, having made shoots over 2 ft. long. I returned to the hotel in Shanghai with a lot of the "Lilac"—perfectly happy now that I had found the very plant I almost came from England to discover.

Shanghai is not on the Yangtse river exactly, but on a branch stream about 12 miles from the main stream. The town is divided into four portions: 1st, the American, a straggling place with the wharves in front; 2nd, the English. This possesses a pretty public garden, in which are Roses that would astonish some of the Rose growers in England, both as regards quantity and quality, and such Hyacinths and Tulips! Shanghai-grown, too. Mr. Corner and Mr. Tapp, two of the principal amateurs there, told me that the flowers from native-grown bulbs were much finer than those from imported ones. 3rd, French "concession"—rather a mixture of all sorts of nationalities and styles of building; and 4th, the Chinese walled city of Shanghai.

The road on each side the English "concession" is lined with trees of *Sterculia platani-folia*, *Calliandra Tweedi*, *Salisburia adiantifolia*, Willows, *Cleyera japonica*. Japanese shrubs of all kinds grow in the gardens. Of course all these have been introduced by Europeans along with most of our common English flowers—sweet reminiscences to the exile from home in these strange lands. I visited the native market one morning about 5 o'clock. There I saw, as in some country towns in England, men and boys with their produce in baskets squatting along the side of the street. It consisted of Onions, Garlic, Leeks, Souchou Cabbage, like a monster Cos Lettuce (used as a salad and also boiled), *Trifolium* leaves (very good eating, something like Spinach when cooked), Spinach, Celery, Cauliflower, Yams, Bamboo shoots, also a good vegetable. The land round Shanghai is an alluvial deposit of the Yangtse, and with a little cultivation produces good crops. The country is very level, and has a perfect network of canals and creeks. There are no real roads, most of the traffic being carried on in boats. Two crops in the year are generally obtained. Wheat or Beans first, then Rice or Cotton, Melons, &c. The only manure used is human excrement, scrupulously collected all over the country. The ground is dug or ploughed very shallow, and the crop is generally sown broadcast. The nurseries I saw were miserably poor, and did not by any means come up to what I expected to find from Fortune's description of them. I never, in fact, saw a native Chinese garden to equal anything I saw in Japan.

**Nagasaki.**—On April 18, 1877, I left Shanghai for Japan. The thermometer was standing at 65° in the shade at noon, not particularly hot for this latitude. The ship I sailed in sighted Nagasaki at sunrise on the 20th. The general appearance of the land was hilly, and as we neared I could see that many of the hills were in terraces almost to the summit, yellow

with crops, principally Rape, grown for the oil; masses of Pines and Firs everywhere, but we could not see Nagasaki town till we had passed through a very narrow channel, round the Papenberg Rock, and then the scene was charming—a perfectly land-locked harbour, with trees to the water's edge; masses of *Azaleas* everywhere mixed with *Deutzias*. The town is prettily situated on the right hand of the harbour, and many pretty bungalows are to be seen some distance up the hillsides, where a cool breeze can be obtained in the summer. These are European merchant's houses, some of which have nice gardens and famous collections of plants.

In Nagasaki we found plenty of flowers of many species of plants; double Cherries were remarkably fine; a few *Camellias* were still in bloom, but I saw nothing to come up to the accounts I had heard of Japan. I saw a very interesting garden belonging to one gentleman whom I met, a Mr. Ringer; he had a greenhouse, too, and many choice Ferns, and quantities of our English plants were growing there, giving the place a home aspect. We left Nagasaki at midnight, and were soon tossing about on the ocean again, for the wind was blowing strongly. I was, however, agreeably surprised next day to see the Straits of Simonosaki, the entrance to the inland sea—considered one of the most beautiful seas in the world. As we passed the first lighthouse (a fine building on a solitary rock in the sea, some ten miles from land), the ship appeared to steer direct for the shore, and we could not see any indication of an entrance. However, after several turns round points of land, for the most part covered with Fir trees, we passed another light, and the channel was now seen twisting among the trees, for really very little land could be seen, except the hills all round us now. Everything was covered with vegetation, and looked beautifully fresh and green after the tropical scenes I had lately passed through.

The town of Simonosaki is built at the foot of a good-sized hill, and is a large town, very clean looking. The strait bends inland on both sides, and, from the ship, looked like a lake; no outlet could be seen; the scenery all round is fine. The boats that came alongside brought plenty of fruits, both fresh and dried. I noticed a beautiful looking Pear, of a yellowish-russet colour, some of them weighing  $\frac{3}{4}$  lb., perfectly Pear-shaped. This was the middle of April, and these Pears had been kept from last season. They were very inferior in flavour, but might prove very valuable for crossing with some of our late fine-flavoured varieties. Unfortunately I lost all the plants I procured. I found enormous plantations of this fruit in the northern provinces. I tried the dried *Diospyros Kaki* also, and found them very good eating. They were threaded on strips of Bamboo, and had previously been rolled in sugar and Rice flour. We weighed anchor, and steamed out of the little sea in front of the town, and appeared to be going ashore again when suddenly the ship swerved half round and then we saw a glorious sight. Looking up the strait in front, we saw the sun setting on the horizon in the inland sea, his beautiful rays thrown everywhere, the terraced fields perfectly yellow, mixed here and there with black Pines and patches of bright green foliage of deciduous trees. I never remember such a beautiful sight. Soon, however, night came on and left us steaming across a large portion of this sea. The channel just past Simonosaki is only about 200 yards across. I was roused up at daybreak to see the islands amongst which we were threading our way; on one side a lighthouse was perched on the top of a perfect cone of rock rising out of the water, and four or five similar cones were

scattered round near. Sometimes we see a little shrine with its row of wooden posts bordering the path, winding through the fine trees. Here and there were a few neat houses with patches of Corn and yellow Rape round; other islands were barren except the ridges, which were planted with a row of Pines from the water to the top point. One small rock nearly 6 ft. out of the water had a solitary Pine growing out on the top and spreading its tabulated branches far over the water. Islands were dotted about in all directions, and it was a marvel to me how a pilot could possibly take a large ship like ours through in safety. We were so near land sometimes that it was quite possible to throw a stone on shore. This continued for about forty or fifty miles, when we entered another broad sea; after crossing that we made the Hiogo Straits, or Kobi, here the hills seemed rather barren and sandy, but I afterwards found them to be far from that. The inland sea has the appearance of a land submerged, leaving just the hilltops above water.

On April 24 I took my first trip to the hills in Japan. I was up by daybreak, and made for the high hill at the back of Kobi. I began the ascent to the waterfall, one of the sights here; but I was too intent on the masses of *Wistarias* and *Deutzias* on the steep banks near me to notice much else. *Deutzia scabra*, *D. crenata* (double) were magnificent, the long-stemmed Pines overshadowing all. I came at last to the waterfall, only a short distance up the hills. The water runs over a ledge of rock, and falls down into a basin about 100 ft. below. The rocks near the fall are covered with Mosses, *Selaginella japonica* (like miniature Tree Ferns), *Funkias*, and *Rhynchospermum*. *Azaleas* grow in great profusion on the hillside, chiefly *A. mollis*. The only forest trees were *Pinus densiflora* and *P. Massoniana*, if there is any difference. I left the waterfall and descended to the other side of the hill. Here I found a most beautiful little *Azalea*. I took it to be *amœna* at first, but afterwards it proved to be another species. I was very fortunate to introduce this alive, and it has flowered in England. The flowers are crystal white, borne in great profusion; the leaves are very small, and the plant has a tabulated habit. I doubt if it is hardy coming from such a sheltered valley. I found it growing with *Adiantum monochlamys*, covering its roots in damp situations, shady, and hanging over a mountain torrent. It grows well in a greenhouse in England, and I think will be invaluable for decoration and bouquet-making.

With the *Azalea*, as I mentioned before, was *Adiantum monochlamys*. This is a beautiful hardy, or nearly hardy, Fern. It is silvery-white underneath, and has a very dry frond, quite evergreen. It is peculiar in having only one spore-case on the end of the pinne. Under cultivation at Messrs. Veitch's it has thriven well, and will make a very useful Fern. Further up this beautiful valley I found a flowering shrub, *Aronia asiatica*, I think, having a most beautiful almond-scented white flower. When I brought home my plants of this I cut flowers off them almost every day from Singapore to England; in fact, I cut the last spray of bloom in the Thames on January 3, a fact which proves that it will force well in pots. It will, probably, be quite hardy. *Woodsia polystichoides*, *Veitchi*, *Woodwardia radicans*, *Pteris serrulata*, *Lygodium scandens*, *Adiantum pedatum*, *Lastrea opaca*, Violets in abundance without scent; *Primula japonica*, *Akebia quinata*, *Rhynchospermum*, *Wistarias*, *Weigelas*, *Deutzias*, *Camellias*, *Azaleas*, were found here. *Quercus*, many species; *Abies Tsuga*, *A. firma* (of Masters), were scattered about in places. As I came near the



summit, about 1000 ft., I came to a splendid grove of *Cryptomeria*, huge trees, many 6 ft. in diameter, and near the top a fine specimen of *Sciadopitys*, plenty of trees of *Retinospora obtusa* and *pisifera*, I should think 150 ft. high, were growing here. The trunks of the *Cryptomerias* at the bottom were covered with *Hymenophyllums*, three species, and *Dendrobium japonicum* covered the branches along with *Davallia Mariesi*. The white flowers of *Dendrobium* cropping up amongst the bright green of the Ferns had a striking effect. I came at last to the top of the mountain, and rested on the verandah of the fine "temple of the moon." The scenery was grand; far across the Bay of Osaka could be seen the mountain of Kii, where the *Sciadopitys* has its home, and Kaya-san mountain was pointed out to me. *Cephalotaxus* is very abundant as an undershrub on this mountain. It never attains above 10 ft. high. Here I saw a double white *Camellia* tree with a stem 1 ft. in diameter. *Camellias* grow wild under the shade of other trees. I returned to Kobi in the evening after a very pleasant ramble over the hills.

**Pæonies.**—I next visited Ikeda. The specialities here were tree *Pæonies*, *Maples*, *Camellias*, and *Azaleas*. Of the latter I obtained several of a very fine class, like the old *A. obtusa* of various colours in perfect masses of flower. As they were likely to prove hardy I procured plants of each. I also obtained the rare double white *Camellia Sasanqua*, and I am glad to say all reached England in good condition. They are most beautiful plants in their native country. One nursery had large beds of each planted thickly—a perfect blaze of colour, the white *A. obtusa* being particularly fine. At one nursery there was a grand display of tree *Pæonies* of all conceivable colours, some of the flowers of which measured 10 in. across. They were planted on a slope, the colours being mixed and well arranged, and shaded with Bamboo—a magnificent sight. The plants were grafted in the autumn on seedlings or roots of the ordinary tree *Pæony*. After grafting they were buried in ashes till spring. This is a secret with the Japanese nurserymen, each of whom prides himself on some "happy way" of increasing special plants. Ikeda is certainly the best place in Japan for *Pæonies*. They are even sent from here to Yokohama and Yedo, as the nurserymen there do not know how to propagate them.

C. MARIES.

## ORCHIDS.

### ORCHIDS AT REGENT'S PARK.

THE exhibition of these plants in the garden of the Royal Botanic Society the other day did not quite fill the large bank usually devoted to them, nor were they quite so good in quality as we have been accustomed to see them at the earlier exhibitions. A good deal has been written and more spoken about the system of "making up" plants for exhibition. I do not think anybody likes the plan of doing this now in practice. It began no doubt by exhibitors placing two or three plants of one variety together, in order to obtain a larger specimen. It was also found that some species of Orchids succeeded best in small pots. *Cypripedium barbatum*, for instance, is grown in 5-in. pots, and a score or more of these small potfuls have to be placed together in one large pot while in bloom a few days before the show to be returned to the small pots when the exhibition is over. Exhibitors have gone even much beyond this within the last few years; a dozen plants of as many varieties of *Cattleya Mossiæ* have been crammed into one pot regardless of the injury sustained by the plants owing to the roots being damaged. If the object of exhibitions is to encourage good cultivation, it can only be

secured by favouring exhibitors who show their plants in the pots in which they have been grown year by year. If Mr. Paul or Mr. Turner were to make one large specimen *Rose* by turning out a dozen varieties into one large pot, they would at once be disqualified, and yet the same judges encourage an exhibitor to turn a dozen varieties, less or more, of *Cattleya Mossiæ* into one pot to make an effective specimen, simply because it has become the custom. Orchid shows would be improved if a clause were inserted in the schedule that "made-up" plants would be disqualified.

The collection of Orchids exhibited from Sir Trevor Lawrence's garden at Dorking was a remarkably good one—no "made-up" plants. Sir Trevor would not allow that even if Mr. Spyer were inclined to do so, which he is not. Some of the specimens in this group were well worth special notice; the Necklace Orchid (*Renanthera Lowii*), for instance, though only about 2 ft. high, was well furnished with leaves, and had a strong drooping spike consisting of 34 flowers—orange, with a buff ground densely blotched and spotted with maroon-crimson, the two flowers close to the stem being quite different from the others both in form and colour. This species, being from moist districts in Borneo, likes a high, moist atmosphere when making its growth. I have seen this remarkable plant about 9 ft. high, and producing two spikes 12 ft. in length. *Dendrobium McCarthiae* was also shown in this collection in grand condition. When this plant is well grown it is one of the best for purposes of exhibition, but the plants do not increase in size, and are liable to get into bad health. It ought to be grown on a block, or in a basket, and be suspended near the glass in the warmest house, and should receive plenty of water when making its growth. The pretty *Dendrochilum filiforme* had 44 spikes; these were long, and drooped gracefully. This is an easily grown species, but the leaves are liable to be attacked by red spider, which ought to be destroyed by sponging them off with soapy water. It likes a high temperature and plenty of water when making its growth. *Epidendrum nemorale* has flowered well this season, but the large plant in the Burford Lodge collection is the best I have seen. It bore 18 spikes of remarkably well developed flowers, and the plant was in excellent condition, forming a beautiful object at the back of the collection.

Mr. B. S. Williams, of Holloway, had, as usual, a grand collection of Orchids, amongst which were the easily grown and useful *Brassia verrucosa*; this species does well in the warmest end of the *Cattleya* house, and should be grown where there is plenty of room. Its singular looking green and white flowers are very interesting. There was also a major form of the old *Aerides odoratum* well furnished with numerous spikes of beautiful white and pink sweetly scented blossoms. This is not so often seen at exhibitions as it used to be, but it is one of the easiest Orchids to grow, and is altogether a very desirable plant.

Mr. Dorman's fine specimen and very beautiful variety of *Oncidium curtum* was well worthy of special notice. I had not previously seen a better variety of this, nor is it usual to see it flower so late. Being a native of Brazil, it should be grown in the warm house and in a basket near the glass. *Oncidium phymatocilium* was also well shown in Mr. Dorman's collection. It is a distinct habited species, and should be grown in a pot, with the growths left to ramble over the sides, when a perfect wig of roots is formed each season from the base of the pseudo-bulbs. J. DOUGLAS.

**Orchids at Drumlanrig.**—"M." states (p. 61) that "not many years ago there was no Orchid house at Drumlanrig." When, however, I was there, about 1852-53, there was a long low house devoted almost exclusively to Orchids, which were mostly all grown in baskets—perhaps one of the best collections in any private garden at that time, but which I believe continued to be added to till Mr. McIntosh, brother of Charles

McIntosh, the author of "The Book of the Garden," left previous to Mr. Thomson's going there, who has no doubt added to the collection. The Orchids were there when I went to Drumlanrig, and had been there for I do not know how long before. They consisted of some of the finest *Stanhopeas* and other kinds of the period I ever saw, and there was a plant of the shy-flowering *Renanthera coccinea* which covered a block the whole length of the house, some 50 ft. or 60 ft. long or more. The house in my time was so crowded with baskets that one could hardly get your head up anywhere, and I have a lively recollection of the task of watering them every morning—not a very agreeable job. I believe Mr. McIntosh is still alive, and if he is he could confirm my statement, as could also the present able superintendent there. It is of course not long since what are called "Orchid houses" became a feature of private gardens, but the one at Drumlanrig was the nearest approach to it in its day I ever saw.—AN OLD DRUMLANRIG MAN.

## THE GARDEN FLORA.

### PLATE CCXCIV.—CLIANTHUS DAMPIERI.

THIS, the Lobster-claw or Glory Pea of Australia, is one of the brightest of leguminous plants, and when well grown, most striking. Though long in this country, it is seldom seen in perfection. It has been tolerably well grown in several of the London nurseries, but nowhere better than in that of Messrs. Carter, at Forest Hill, from which material was obtained for the preparation of our plate. It produces seeds freely, and they grow readily, but must not be afterwards disturbed. All the finest specimens I have known have been grown from the seedling state in a border in which they have never afterwards been moved in any way, and thus treated, I have known a single plant in the course of a season to produce over 150 spikes of bloom, each spike being furnished with from three to six flowers. It thrives best where it has unlimited root room in a well-drained border in a mixture of equal parts of rough-chopped loam, peat, and river sand. It needs copious supplies of water while growing. The seeds should be sown in autumn where they are to remain, watering the plants carefully during the winter to prevent damping off, to which they are peculiarly liable. It should also be protected round the collar or neck with cotton wadding to keep off slugs, which are great enemies to this plant during its young stages. It is also liable to be attacked by red spider, but when once it gets a fair start in spring, it pushes onward with great vigour, flowering and ripening seeds until late in the autumn, when it dies apparently from absolute exhaustion. I have never known it to flower a second year.

In its natural habitat it is said to grow and flower freely in dried-up creeks or small water-courses in summer. I have tried to increase it by means of cuttings, but without success, and I have never yet succeeded in doing much good with it as a pot plant; however carefully managed, it nearly always seems to damp off after being potted or transplanted. As has been already stated, it does best in a border somewhat raised in a low span-roofed house trained upright towards the roof, and then led horizontally and exposed to the full rays of the sun. I have often thought that something good might be obtained by crossing the older and hardier *Clianthus puniceus* with this, but never had an opportunity of making the experiment. It is one of those capricious plants that, notwithstanding every possible care, one cannot invariably make sure of success. When











one does succeed, however, the display made by its showy blossoms amply repays one for occasional failures. It is an admirable flower for cutting purposes, lasting from a week to ten days in water, and I once saw a striking tiara made of the single blooms mounted.

T. C. B.

**Culture in Pots.**—Concerning this, Mr. Baines writes as follows: "This *Clianthus* comes from New Holland, and is doubtless identical with *C. Oxleyi*, from the same region. It is best propagated from seed, and although perennial in habit it often assumes a biennial character, not unusually dying off after it has flowered, which it does, if all goes well, the second year. There is generally no difficulty experienced in getting the seedlings to grow freely enough until the time comes for giving them more root room, after which, unless very great care is taken not to disturb or interfere at all with the roots, the plants usually at once cease to make progress, and assume a stunted condition, from which they rarely, if ever, recover. In this *Clianthus Dampieri* is similar to the blue *Leschenaultia* (*L. biloba*), a free-rooting plant, yet so impatient of having its roots disturbed, that if even a few bits of the drainage crocks were removed at the time of re-potting, I could never afterwards get it to move so as to be of any use. Seeds may be sown at any time during the spring or summer, but with me they succeeded best put in about April, which gives the plants time to get strong before winter arrives. As the tender character of their roots exists in all stages of growth, it is best to sow singly in small pots, say 3 in. or 4 in. in diameter. This *Clianthus* likes light open material to grow in, such as a combination of turfy-loam, one half to an equal portion of the best fibrous peat, a liberal addition of leaf-mould and sharp sand. The pots should be drained and filled with soil of like description, covering the seeds about  $\frac{1}{4}$  in. and placing the pots in an intermediate temperature where the plants will soon vegetate, after which they must have plenty of light, a fair admission of air, and sufficient water to keep the soil moderately moist. Continue this treatment until the plants have made some progress, but they must not remain in small pots until their roots get all matted round the sides, or grow through the hole at the bottom, for if not either planted out where they are to remain, or if to be grown in pots transferred to those in which they are to bloom, the mishap which I have already spoken of is almost certain to occur.

"It is needless to say that this one-shift system of treatment necessitates the soil being used in a lumpy state, and of the turfy, fibrous texture recommended; otherwise, it would be liable to get into a close, adhesive condition before the roots took possession of it. A warm greenhouse temperature is what the young plants should have, *i.e.*, it is all the better if they are kept through the winter in a warmth similar to that which best suits *Pelargonium*, viz., 45° at night with more by day, in accordance with the state of the weather. In spring they will progress rapidly, and come into flower about April or the beginning of May, producing from the leaf-axils the peduncles, on which are borne their glowing flowers, which keep opening for a considerable time. This *Clianthus* varies in height from 4 ft. to 6 ft. or 8 ft., proportionate to the more or less vigorous condition to which it attains. To keep up an annual succession a few seeds should be sown every year.

**Varieties.**—The Glory Pea belongs to a limited genus, only some three or four of which are in cultivation. Of these *C. puniceus*, a

well known, but much neglected species, is very easily managed. It is an excellent plant for clothing a pillar in a conservatory, or it can be trained round a few sticks inserted in the pot in which it is grown. It strikes easily from cuttings, and will succeed in any ordinary soil. It should be cut back slightly each season after it has flowered. It is a native of New Zealand. *C. carneus* bears light pink or flesh-coloured flowers, and is of a somewhat scandent habit. It comes from the Philippines, and blooms in spring, thriving best with a little more warmth than the preceding kinds, but succeeds with the same treatment as to soil and other matters that answer in the case of *C. puniceus*."

#### NOTES FROM NEW ENGLAND.

**Kalmia glauca.**—I was pleased with your reference (p. 488) to this little gem. I never saw it so beautiful as in its native wilds in the sub-alpine regions of the New Hampshire Mountains, where in early life it is in floral perfection. Its slender vine stems are full of lilac-purple flowers. They scramble over beds of Sphagnum Moss and intergrow with Creeping Snowberry (*Chioenes*), Dwarf Bilberry (*Vaccinium cespitosum*), *Phyllo-doce taxifolia*, Alpine Willows, Dwarf Cornel, Peck's Geum, White Bluets, Twisted Stalks (*Streptopus*), and many other mountaineers. But it is prettiest when alone upon its Mossy bed. The soil it grows in is always wet, but on those great steep hills no moisture stagnates; its roots run very far to meet and stretch into the earth, and form a webbed mat among the Sphagnum sod.

**The Labrador Tea** (*Ledum latifolium*) is another mountaineer that grows in great abundance there, and quite pretty when in bloom. I did not find it so strong or copiously flowered in its wild state as under garden care. When in the mountains I avoided all hotels, and laid me down to sleep wherever night overtook me—a smooth place big enough whereon a man could lie and rest I seldom found; but I usually mended the unevenness of my bed with Labrador Tea, and for a pillow used a bundle of the same. Its spicy fragrance was delicious, and helped to cheer me through many a dark and wakeful hour when cold denied me sleep.

**The Alleghany Bluet** (*Houstonia serpyllifolia*).—About a month later than the common Bluet begins to bloom in comes this mossy species with the bluest flowers of all. It creeps along the ground making a thick sod or carpet, is copious and pretty, hardy if sheltered from the searing frosty winds of spring, and loves a damp and slightly shaded place to grow in. It abounds in great profusion in the mountains of North Carolina, adapts itself very kindly to cultivation, and may be increased greatly by division.

**The Four-leaved Milkweed** (*Asclepias quadrifolia*).—A deliciously fragrant flower and the earliest to blossom of the hardy species of the genus, coming into bloom as it does about the first of June. About three weeks ago I found a lot of it on the sunny face of a steep rocky hill at Waltham, where it was growing in a bed of disintegrated rock. It grows 1 ft. to 2 ft. high, has one or two whorls of four leaves about the middle of the stem, but the other leaves—lower and upper—are in pairs, and terminal heads of lilac-tinged white flowers that are sweet and pretty.

**Ramondia pyrenaica.**—At p. 514, Vol. XIX., this is mentioned as being often found to be a difficult plant to grow. In the spring of last year I sowed some seeds, and as the seedlings were small, I planted them in rows in a north-facing cold frame behind a high hedge. There they formed fine little rosettes. Some I planted out in the rockery in the autumn, but the most of them were left in the frame till last April and then planted out. In both cases they did well and blossomed splendidly; indeed, they are not now (June 24)

quite out of bloom, but those wintered in the frame were twice as strong as those planted out last year. I am highly pleased with it as an alpine plant, as well as with its easiness to grow.

**Sweet Fern and Wax Myrtle.**—These two shrubs, botanically known as *Comptonia asplenifolia* and *Myrica cerifera*, are very common here growing on dry and sterile places, sandy or rocky. The foliage of both is fragrant; that of the Sweet Fern somewhat resembles a small Fern frond, and that of the Wax Myrtle has the air of an evergreen about it. It is needless to say they are both quite hardy. We are often at a loss for shrubs that will grow on dry gravelly banks, on the summit of high rockwork, and elsewhere under impoverished circumstances, and I am sure our wilds suggest no more appropriate subjects than these.

**Leavenworthias.**—These are small, rosetted, and exceedingly profuse cruciferous annuals or biennials from the barrens of Kentucky and neighbouring States. Last autumn Dr. Gray gave me some seeds marked *L. stylosa* and *L. Michauxi*. I sowed them in the winter time in the greenhouse, pricked, and afterwards potted off singly the seedlings into small pots, and in early May planted them out in our rockery. They are now and have been for some weeks dense little tufts 2 in. to 4 in. high, and more blooms than leaves. The larger tufts have yellow flowers and the smaller ones white with yellow "eye"; the blossoms are somewhat *Oxalis*-like. On the white and some of the yellow branches the peduncles are one-flowered and radical, whereas on the larger yellow as many as twenty buds are on a scape, but this I am inclined to think is partly owing to liberal culture. At any rate these *Leavenworthias* are beautiful plants and worthy associates of *Erinus alpinus*, *Celsia bugulifolia*, *Aubrietias*, and the like. There is considerable confusion among the species of this genus.

**The Pennsylvania Pink** (*Silene pennsylvanica*).—In May and June, dotted here and there on exposed rocky ground, skirting rocky woods, and massed in colonies underneath and about the bushes in better ground, the wild Pink, as it is also called, is one of our brightest and prettiest of wild plants. When in flower it is 6 in. to 8 in. high, but the cultivated plants are larger specimens than the wild ones; the colour of the blossoms is pink-red, which varies a little in deepness in different plants. A few weeks ago, in the Waltham woods, I found two of these Pinks having pure white flowers. They make charming little garden plants, are exceedingly profuse, and easily raised from seed. Wild plants transposed to the garden grow very well, but as they have stout, fleshy, deep-reaching roots—tap-root style—much care has to be exercised in gathering them.

**Arethusa bulbosa.**—I find this charming little Orchid growing in wet meadow land, local, and not over plentiful. It blossoms in May and June, each plant bearing a bright rose-purple flower that shows conspicuously in its sombre bed of Sphagnum and Cranberry, Grass, Sedge, and the like. I can hardly say the little bulbs are growing in the soil, but instead in a mossy mat formed by the roots and decaying herbage of other plants and moss. Although it grows so cosily in its meadow home, it takes unkindly to garden care. In pans it does fairly year after year, as it oftentimes does the next season after being planted out in the garden, but the following year it usually fails to appear.

**Celsia bugulifolia.**—Under the name of *Ianthé bugulifolia* we got some seeds from Max Leichtlin in the spring of 1880. I sowed them forthwith in a pot in the greenhouse; they soon came up and were pricked off. Because of their smallness instead of planting them out of doors I planted them in a cold frame, where they remained till last April, when I transferred them to the rockery. During all this time they were very small, merely 3-in. to 4-in. wide rosettes; towards the end of May they blossomed and kept in bloom till the



second week in June. Each plant had a single spike 8 in. to 10 in. high, and thickly set with most curiously coloured (a mixture of chocolate-green and yellow) flowers, that to me were pretty and pleasing. It is a little Mullein, a native of Turkey, hardy at zero at any rate, and, if I mistake not, a biennial. It is one of my favourites.

**The Hardiness of Limnanthes Douglasi.**—I am not so sanguine as "J. C. B.," p. 631, Vol. XIX., of the hardiness of this plant. Last autumn a lot of seedlings of it came up where the plants had bloomed in summer. I transferred about two dozen to a cold frame—covered with one sash, and over that some 3 in. of Sedge Grass—and wintered them there, and left the rest unprotected in the bed where they were growing. In the spring time over two-thirds of those in the frame were dead, and every one of them that were left out were killed. Severest frost, 10° below zero.

**Star Grass** (*Hypoxis erecta*).—Growing among the Grass bordering meadows and scattered through the open woods, this little Amaryllid is a common wild flower, and in its modest way a pretty one too. It has bunches of Grass-like leaves 6 in. to 9 in. high, and numerous scapes of yellow, star-like flowers that are borne the summer through. In a cool moist place in the garden it grows quite nicely.

**The Bird's-foot Violet** (*Viola pedata*).—With reference to this Violet in THE GARDEN (Vol. XIX., p. 534), I observe "the plants are free in growth in a light rich soil and partial shade." In its wild state it prefers dry, gravelly, or rocky, soil, and an open, shadeless situation, seeks the same and as carefully avoids wet soil or shade. It blooms in full in May and early June, and a little in the autumn. Last November I gathered a lot of wild plants, set them out in clumps in the rocky here; this spring they blossomed full and are now growing strongly. There is a white variety, but it is scarce; the bicolor variety is exceedingly rare.—W. FALCONER, *Botanic Gardens, Cambridge, Mass.*

## THE FRUIT GARDEN.

### PLUM TREES IN POTS.

PLUMS from trees in pots will be found most serviceable coming in as they do after Cherries are over and maintain the supply until open air fruits get abundant. The best way to get good bearing trees in a short time is to buy some well furnished dwarf pyramids that have been well pinched in at the nurseries and furnished at the base with short stubby spurs. Pot them in 12-in. pots in November, using good turfy loam, small crushed bones, and a little old mortar rubbish, well rammed into the pots, which after a good soaking of water may be plunged into a good thick bed of dry Oak or forest tree leaves. These will keep the roots in a favourable condition for making a vigorous start in the spring, when the plunging materials may be reduced down to the rims of the pots for convenience of applying moisture to the root, a most important item in regard to fruit culture of any sort in pots. They should be in a position open to the sun, but screened from cold winds or draughts, and during the first year they should be grown entirely out of doors. The principal labour required will be attention to watering, pinching the strongest shoots as soon as they have made three or four leaves, and keeping the foliage clean by syringing. If fly appears use tobacco water or some such remedy. The trees will usually make wood quite strong enough without any stimulant in the way of liquid manure, for wood of medium strength well ripened is almost certain to produce flower buds sufficient. As soon as the leaves fall the pots may be placed close together, filling between and around them with dry leaves. These keep the roots in an equable state as regards moisture and temperature.

**Pruning.**—Presuming that the trees have had their strongest shoots pinched in the summer, there will be very little pruning necessary in the

winter, and the trees may have a little of the old surface soil removed, the drainage put in order, and a top-dressing of fresh soil and a little manure added before they are taken under glass, a transition which must be regulated by the time the fruit is required to be ripe. In the case of trees not previously forced it is best not to hurry them too much beyond their natural season; if they are brought into a cool house, say in January, and started with solar heat, and a little fire-heat on frosty nights, early kinds of Plums will be ripe in June, and later sorts in July, and by introducing them under glass a little earlier each year they may be safely forced, and the same trees will bear good crops for many years.

By following the above directions, and after the third year giving the trees a shift into 14-in. pots, and using plenty of weak liquid manure when heavily cropped, we have 'Rivers' Early Plum now past, Jefferson's and Victoria fit for table, and Kirke's Plum, Transparent and Green Gage ripening. Many other kinds may be added to the list, but the main object of any selection would be to get sorts that ripen in succession, so as to give as long a season as possible, for a healthy tree in a 14-in. pot will bear several dishes of fruit.

J. GROOM.

### THE BEST PEARS.

**Josephine de Malines.**—*Synonym*—*Joséphine de Malans.*

**DESCRIPTION.**—Wood, strong. Branches, numerous, spread out, thick, and rather short; not elbowed; clear chestnut colour; finely and plentifully speckled, with the callosities nearly flat. Eyes, large, round, ovoid, separated from the wood, with the scales disjointed. Leaves, of medium size, rounded, elliptical, regularly serrated, borne on a short, thick, but excessively flaccid stalk. Fertility, average.

**CULTURE.**—It is of average growth; the graft increases in size with great slowness. It grows better on a free stock than on a Quince. The pyramids it forms, although somewhat irregular in growth, are nevertheless fairly handsome.

**FRUIT** generally below the average, but sometimes larger. Shape varies between the compressed turbinate, irregularly and slightly blunted, and the very much rounded turbinate stalk short, rarely strongly curved, well grown, especially at the base, inserted obliquely or perpendicularly in the centre of a shallow depression, having the edges only slightly raised. Eye, small, round, open, and only slightly sunk. Skin, pretty thick, lemon-yellow, strongly speckled with grey and light yellow, marbled with brownish fawn-coloured streaks, spotted with the same round the stalk, often bronzed in the basin, and generally of a reddish hue on the side next the sun. Flesh, yellowish-white, very fine in texture and very melting, juicy, and only very slightly granular at the cone. Juice, very abundant, sugary, slightly acid, with a peculiar odour which reminds one of that of the Hyacinth, and which adds greatly to its flavour. Season, from the end of November to January, and even to February. Quality, first-rate.

**HISTORY.**—The name of this delicious Pear sufficiently indicates the place of its birth. It was raised at Malines by Major Esperen, who has been especially lucky in raising new varieties. He first grew it in 1830, and named it after his wife, whose name was Josephine. In spite of its many merits it was a long time before it penetrated into France, having been introduced in 1843 by M. Lervy, who in that year grafted it for the first time.

**Marie Louise.**—*Synonyms*—*Marie Louise Duquesne, Marie Louise Nova, Van Donckelaar, Braddick's Field Standard, Forme de Marie Louise, Princesse de Parme, Marie Louise Monvelli, Marie Louise Delcourt, Van Donckelaar Corchorus, Marie Louise Donckelaar, Marie Louise Van Mons, Marie Louise de Jersey, Van Donckelaar.*

**DESCRIPTION.**—Wood, rather strong. Branches,

very numerous, spread out or bent down, thick, and of average length, very much kneed, slightly downy, brownish green, thickly and finely speckled with prominent callosities. Eyes, pretty large, ovoid, sharp, fixed close to the wood with the scales badly joined. Leaves, average size, numerous, elliptical or rounded, with the edges deeply indented, borne on a long and thick stalk. Fertility, average.

**CULTURE.** This Pear should be grafted on a free stock; as if grown on a Quince the crop of leaves is extremely scanty. It forms handsome pyramids, and is fairly vigorous in its growth.

**FRUIT,** above the average or medium. Shape, variable; it is often more or less elongated, conical, and very cylindrical, and it sometimes occurs regularly ovoid. Stalk, long or rather short, generally bent, pretty thin in the middle, but swollen at the base, inserted perpendicularly or obliquely in a wide cavity of no great depth with irregular sides, or else placed level with the surface of the fruit and surrounded with a very distinct fleshy fold. Eye, large, regular, open, rounded, prominent, or slightly sunk. Skin thin, light yellow on the sunny side, greenish yellow on the other, speckled with brown, stained with red and spotted with the same top and bottom. Flesh very white, fine grained, melting, juicy, somewhat granular round the pips. Juice very plentiful, sugary, vinous, with a very delicate aroma.

**SEASON.**—The end of September and the whole of October.

**QUALITY.**—First-rate.

**HISTORY.**—For some thirty years past I have been in the habit of cultivating this Pear, and I have purchased it, but always as a supposed novelty under many of the numerous names, an authentic list of which heads this account. I cannot, therefore, help agreeing in opinion with those pomologists and growers who now unite under a single and identical named variety the Pear so long sold under the names of Marie Louise Duquesne, Marie Louise Nova, Van Donckelaar, Princesse de Parme, Marie Louise Delcourt, Marie Louise de Jersey, &c. The true name, which was the primitive of this Pear tree, was given to it by the Abbé Duquesne, who was the first to raise it, and who at the beginning of this century lived at Mons, in Hainault, where he engaged in fruit culture. He first had seedlings of it in 1809, and not in 1813, as has been frequently stated, and named it in 1810 after the second wife of the great Napoleon, the Archduchess Marie Louise of Austria, who was born in 1791 and died in 1847. Porteau, who first imported it into France in 1833, described it in 1834 in his "Théorie Van Mons," and assigned to it this same grower and date of raising. It was grown in England before it was introduced into France; for Dr. Lindley as far back as 1830, after having given all its characters with his customary precision and minuteness, says: "It was raised by the Abbé Duquesne, and sent by Dr. Van Mons, of Brussels, to the Horticultural Society of London in 1816." If we consult the "Transactions" of the same society we shall find that in the volume for 1820 the source from which Lindley took his description, with an additional fact that it is well to note, "That the Abbé Duquesne saw fruit for the first time simultaneously with the Napoleon Pear, of which the Abbé was also the raiser and namer." It is clear, then, that if this latter tree dates from 1809, the Marie Louise variety was then twelve years old.

**Remarks.**—The false variety Marie Louise Nova, which is laid at the door of Van Mons successors, is often made synonymous with the very doubtful variety, known as the Comte de Lamy; but some confusion worse confounded must have arisen here, for the Pear which goes under this doubtful name is connected rather with the Beurré Curtel, as both Mr. Thompson and ourselves have proved. The same remarks apply to the names Marie Christine and Marie Chrétiën, under which appellation the Marie Louise has been frequently sent out for sale. Prevost in his



"*Pomologie de la Seine Inferieure*" pointed out this error in 1845 in describing the Marie Christine, a variety which I have never yet been able to procure. In 1865 the Paris *Journal de Horticulture* mentions that there is a Pear under the name of the Marie Louise d'Uccle, which it would appear is only a sub-variety of the ordinary Marie Louise, grown at Uccle, near Brussels. We point out this Pear, but having already received specimens of the true Marie Louise under new names, it behoves us to be careful in accepting the Pear described by the English journal until we get some more precise information, more especially as it is stated that the only difference noticeable between the true Marie Louise and the Belgian variety so-called is a "peculiar aroma."

**Duchesse d'Angoulême.**—*Synonyms*—Eparonnais Pear, Duchess Pear, De Pézenas Pear.

**DESCRIPTION.**—Wood, very strong. Branches, numerous and slightly spread out, thick, long, very much elbowed, light ashy-yellow, with whitish lenticular markings, which are very close and distinct, with the callosities somewhat prominent. Eyes, voluminous, elongated, pointed, downy, with the scales badly joined together. Leaves, pretty large, oval, often acuminate, deeply indented or crenated, borne on a long stalk of moderate thickness, but so weak and flaccid that it is very much curved, and even sometimes bent down entirely. Fertility, remarkable and constant.

**CULTURE.**—This Pear tree soon develops its graft, which grows vigorously on any kind of stock. Its pyramids leave nothing to be desired, whether for the vigour of their growth or for their regularity.

**DESCRIPTION OF THE FRUIT.**—Size, voluminous and often enormous. Shape, a slightly cylindrical ovoid, strongly knobbed, or a regular ovoid, but very swollen at the base. Stalk, short, or moderately long, thick, bent downwards, sometimes swollen at the point of junction, implanted more or less crookedly in a large hollow, the edges of which are very irregular. Eye, medium, half closed, or even shut, irregular, placed either in the centre of a large basin, which is usually in the shape of a funnel, or else in a slight hollow. Skin, thick, rough, yellowish-green, speckled and marbled with greyish-red, spotted with dark green, and sometimes—but very rarely—tinged on the sunny side with pale pink. Flesh, white, pretty snowy, fine or medium in texture, very melting, juicy, and free from grittiness. Juice, very abundant, vinous, and possessed of an exquisite aroma. Season, from the middle of October to the end of December, and sometimes lasting even into the month of January. Quality, first-class.

**HISTORY.**—The origin of this choice variety of Angou Pears, which were dedicated to Marie Thérèse of France, Duchess of Angoulême, and daughter of the unfortunate Louis XVI., is not always given correctly. In a work published in Belgium in 1831, the author, no doubt through a misprint, described it as a native of Antwerp, the words Angou and Anvers being easily mistaken for each other. Again, most pomologists state that it was first raised on an estate in the commune of Cherré (which ought properly to be written Querré), where, according to some, it first bore fruit in 1808, or according to others again in 1819, but the doubts on the subject were finally set at rest by the Horticultural Society of Paris, who in 1852 published the following account of it in its "*Annales*," which, it will be seen, corrects a number of errors which up to that time were current with respect to this delicious Pear. In 1809, Anne Pierre Andusson, a gardener of Angers, who died in February, 1845, noticed a Pear tree growing in his farm in Eparonnais, in the commune of Querré, near Champigné, and belonging to Comte Germain de la Forest d'Armeville, which had sprung up naturally, and bearing both large and beautiful fruit. The Count allowed him to take grafts of it, and he did so, and in 1812 first began to send cuttings of it into the market after having named the new variety the Des Epa-

ronnais Pear after his farm, by which name it was known up to the year 1820, when having sent a basket of these delicious Pears to the Duchesse d'Angoulême, with a humble request that he should be allowed for the future to cultivate them under the name of this royal princess, his request was granted, as will be seen by the following hitherto unpublished documents, copied from the originals, which are carefully preserved by the descendants of the late M. Andusson:—"To M. Andusson (sen.), Gardener and Nurseryman, Angers. Paris, October 16, 1820. Sir,—Her Royal Highness Madam the Duchess of Angoulême has received the basket of Pears which you have sent to her. It is with great pleasure that I inform you that the Princess has been good enough to grant you the request which you have asked of her—to be allowed to call this variety of Pear by her name, Duchesse d'Angoulême.—Signed, CHARLET, Secretary and Privy Purse to Her Royal Highness. P.S.—I may add that Madam found the Pears excellent." Five weeks after receiving this letter, M. Andusson sent to Paris six young Pear trees of this variety to be planted in the gardens of her Royal Highness. These gifts were also acknowledged with thanks by the Princess's secretary as before. Such in all their simplicity are the facts relating to the double baptism (so to speak) of this famous variety. As far as the real age of the parent tree grown at Querré goes, we now know much more about it than in 1852. M. Millet, formerly president of the Horticultural Committee of Angers, and well known for his botanical and scientific labours, states in 1862 that the birth of the Duchesse d'Angoulême Pear dated back to a period that it would be difficult to name exactly, but which may be looked on as being rather remote if we take into consideration the size and height of this famous tree, which at a distance really might be mistaken for a small Oak instead of a large Pear tree were it not for its difference of habit. The tree had been decaying for a number of years, and in 1863 I heard that it had died the year previous. From this extract we may conclude that this famous wilding must have been more than 100 years old at the time of its death. Now-a-days the fame of the Duchesse d'Angoulême Pear has spread all over the world, and is sent to enormous distances regardless of cost, just as was the case some few centuries since with the Bon Chrétien d'Hiver.

M. Liron d'Airolles in his "*Notices Pomologiques*" tells us that this famous fruit is easily sent long distances, so much so that in France it has literally become one of the most important imports amongst *articles de luxe* for the table. It would be difficult to say how many thousands of Duchesse d'Angoulême Pears are annually exported from Nantes and its neighbourhood to England, Holland, Spain, Portugal, the ports of Russia and the north of Europe generally, but more especially to Paris, where these Pears are highly prized and as highly paid for. We may add to these interesting details the following extract from the *Jardinier Fruitier* of M. Eugène Forney. "We may," says this pomologist, "without exaggeration value the Pears of this variety which is very largely grown at the present time annually sent out of midland France at over a million of francs (£40,000)." From these extracts we may easily see that from Angers, which is the cradle of this Pear the quantity sent away must be very considerable, without taking other places into consideration. It may be mentioned that as a rule over 230 tons of Pears are annually sent away from Angers by rail during the months of September and October, more than half of which belong to this variety.

**REMARKS.**—The fruiting qualities of this variety are often prodigious, as well as the size of each fruit. In 1863 the *Union* of Paris in speaking on this subject says, "According to a Vervins paper, a Duchesse Pear tree was last year seen in this locality which bore one thousand Pears; this year (1863) we have to notice a tree of the same variety which has borne fruit of an enormous

size, some of them weighing from 500 to 800 grammes, one being 14 centimètres in height, without counting the stalk, the circumference being 35 centimètres, proving that the Duchesse is a Pear tree and one that particularly suits the climate and soil of this part of France. The neighbourhood of Vervins, which is situated in Picardy, is not the only one which has the privilege of growing Duchesse Pears of this enormous weight. We have seen one which weighed no less than 915 grammes, and at various fruit shows at Paris, Chartres, Namur, Berlin, and elsewhere, we have noticed many specimens which weighed over 750 grammes. We may conclude by remarking that Mr. Charles Downing, the American pomologist, applied the synonym of Beurré Soulé, a variety which is probably unknown in the United States. This synonym we should have been glad to accept had Mr. Downing quoted the source from whence he drew his information, but he has not done so."

**Forelle Pear.**—*Synonyms*—Trout Pear, Forellenbirne, Corille, Truitee (speckled), Corail, Grain de Corail, Petit Corail.

**DESCRIPTION OF THE TREE.**—Wood, pretty strong and greyish red. Branches, few in number, slightly spread out, thick and long, not much kneed, downy and wrinkled, of a fine dark red, with fine and distinct lenticular markings, callosities almost absent. Eyes, small, ovoid, downy, flattened against the bark. Leaves, small, seldom abundant, yellowish-green, ovoid, acuminate, downy, serrated regularly with the stalk short, thick, and stiff. Fertility, great and sustained.

**CULTURE.**—We may graft either on the Quince or a free stock. It grows but slowly, but in the third year the pyramids formed by it are pretty fine, but their ramification leaves much to be desired.

**DESCRIPTION OF THE FRUIT.**—Size, large, or at any rate above the average. Shape, very variable. We sometimes see it pass from the long and knobbed cylindrical to the blunt and swollen turbinate. Sometimes, again, it closely resembles the Calebasse Bosc. Stalk, short or pretty long, though generally swollen at the extremities, more or less curved, obliquely or perpendicularly inserted in the centre, of a slight depression, one of the edges of which is generally mamelliform. Eye, large, half closed, reversed slightly, much surrounded with knobs. Skin, greenish-yellow, speckled with fawn colour, and spotted with the same near the stalk and often entirely tinted with deep and very brilliant vermilion, except on the shady side, where this bright colour becomes dull, or only appears in the shape of spots. Flesh, white, firm grained, compact, although completely melting, juicy, rarely granular in the centre. Juice, very plentiful, sugary, slightly acid, and with a delicious perfume. Season, from the middle of November to the end of December, and exceptionally up to the beginning of January.

**HISTORY.**—Forelle, the name of the fruit which has just been described, is a German word signifying *trout*. The English and French generally pronounce the word as a dissyllable, but it ought to be pronounced as a trisyllable, and should rhyme with umbrella. Some two hundred years since Dom Claude Saint Etienne published in Paris the second edition of his book on fruit growing, entitled *Nouvelle Instruction pour connaître les bons fruits*; and as he mentions there a Pear to which the name of Truitee (Trout) had been given, we at first thought that this fruit was French in its origin, and that the Germans had simply translated its French name into their own tongue; but this supposition afterwards turned out to be inadmissible, and for the following reason, that Dom Claude Saint Etienne only knew this fruit by name, and had never even seen it, and that since his time none of our pomologists of either the seventeenth or eighteenth centuries have spoken of it again. We may therefore conclude that from such a lack of mention on the subject of so valuable a variety, the author who speaks of it as growing in France in 1670 did so, no doubt, in accordance with false information



drawn from some German source, and that its real introduction into French gardens dates from about 1830 only, which was about the date when the Angers horticulturists began to propagate it. Our opinion on the origin of this Pear is, however, the same as that of the principal German horticultural writers, as will be seen by the two following quotations, the first translated from an article by J. V. Sickler (1803), and the other by Professor Diel (1806): "The Forelle Pear," says Sickler, "which I received from Dr. Hennig, of Wittemberg, in Saxony, is most likely of German origin. I leave it to those who come after me to solve this question, but I nevertheless feel inclined to lean towards the affirmation, seeing that French authors do not seem to know it, at any rate under the name of Forellenbirne" (*Deutsche Obstgärtner*, 1803). "It is to Mr. Buttner, of Halle, in Saxony," writes Mr. Diel, "that I owe my Forelle Pear tree. With the intention of adding to the number of our fruit trees I ransacked all the fruit gardens and orchards on both banks of the Rhine; wherever, in fact, where the French varieties are best known, but I did not find a single specimen which at all assimilated with the Forellenbirne. We may, therefore, with commendable national pride look on this Pear as having been raised in Germany, and very probably in Northern Saxony" (*Kernobstorten*, 1806). I may add that I can easily understand that in 1845 the Belgian growers yielded to the temptation to sell us the Forelle Pear under the false name of Corail or Grain de Corail (Coral, or Coral Bead), because its colour reminds one of the beautiful tint of this precious zoophyte.—*Dictionnaire de Pomologie*.

**Peach Early Beatrice.**—We gathered the first dish of early Peaches from this variety on the 12th inst. The tree is growing on the back wall of a lean-to house which is not heated. After trying all the early Peaches raised by Mr. Rivers this proves to be the most satisfactory, as the tree is a good grower, and produces fair-sized fruit of fairly good quality. I like it better than Early Rivers or Early Silver, both of which were raised at Sawbridgeworth. I do not, however, consider it very far ahead of the Early York or Early Annie, but, compared with Royal George and Early Gros Mignonne, there is a clear gain of a fortnight under the same treatment. With me the Early Beatrice is rather a shy bearer; do other cultivators find it to be so?—J. C. CLARKE.

**Cherries in Pots.**—I am no advocate for growing fruit in pots that can be grown to greater perfection when planted out; but, next to Strawberries and our very earliest batch of Grapes, I look on the Cherry as the most useful fruit for growing in pots that we have. A dish of fresh Cherries in May for dessert is worth a little trouble; for when a number of dishes has to be made up, the list of fruits is rather limited in most places that depend on home-grown fruit, and the Cherry may be had in excellent condition in May from quite a cool house. It is one of those fruits that do well under glass with gentle forcing, but resents anything like a severe strain by generally shedding its crop altogether. Having trees well established, however, in fair sized pots of about 14 in. diameter, the same trees may be kept for years in good bearing condition by annual top-dressings, and by the application of liquid manure when the crop is swelling. We had some this year that produced a beautiful crop. Afterwards they were put out of doors in a sunny aspect to ripen their wood, the pots being plunged in litter to prevent evaporation or the sun from striking the side of the pots. The soil we find most suitable is turfy loam cut from an old pasture, mixed with old mortar rubbish and dry cow manure, potting very firmly, about Christmas. We usually introduce the trees to a cool house, from which frost is excluded, and they are brought on very gently with late Peaches. When in bloom they are set with a camel's-hair brush, and the same routine of culture suits Plums in pots admirably. We have had this season little pyramids loaded with fruit of River's Early, Victoria or Dauphin, Kirke's Plum, Transparent Gage and

Green Gage, and Jefferson. If they cannot be plunged in the soil of the house they should be mulched over the pots, as they require far less water, and are much more satisfactory than when the pots are exposed; and if a few roots get through during the growing season they will take no harm from having them cut off when the crop is gathered.—J. G.

**Two Strawberry Plants in a Pot.**—I agree with Mr. Groom (Vol. XIX, p. 576) that putting two Strawberry plants in one pot is more retrogressive than progressive, and as the season has now arrived for preparing the stock of plants for forcing next season, perhaps a few words on their production may be acceptable. Some growers procure their runners from old forced plants, which by being earlier are judged the best, but the adage that a good start is half the battle is applicable to pot Strawberry cultivation as well as to other things. Procure strong healthy runners from outside beds, leave 1 in. of stalk before and after the runner, pot them singly in 3-in. pots, using a fine loamy soil; place the pots close together on an ash bottom, and cover with a 1, 2, or 3-light box, according to quantity required; keep them well shaded, and syringe morning and evening. Thus treated, they will soon take root, and will be fit to pot into their fruiting pots in about a month; of course, as soon as sufficiently rooted, shading must be dispensed with and air given, or they will become drawn, stocky plants being essential to success. In my opinion large pots for Strawberries is a great mistake, 4½-in. for early work and 6-in. for the main batch being most suitable. The soil should consist of two parts good loam, and one of manure from an old Mushroom bed. When the plants are potted place them on ashes, thin out, and keep them clear of runners and weeds. In the autumn they should have all the sun possible to ripen their crowns. If worms are troublesome give them a watering with clear lime water. Frames are the best places in which to winter Strawberries plunged in ashes; it is preferable to stacking them out of doors. They can be introduced to early Vineries, Peach houses, or, what is still better, a Strawberry house, as required. They will not require repotting, though I have seen them turned out of 6-in. pots, the bottoms of the ball cut clean off, which of course destroys the main portion of the roots, and potted into 8½-in. pots, the argument being that it prevented them from getting dry. Of course, as may be imagined, the result was anything but satisfactory. What is required in the case of pot Strawberries is a potful of roots, and not soil, when they are introduced to the forcing house. Careful watering is necessary and a dry atmosphere when in flower and ripening. Vicomtesse Héricart de Thury, President, and Sir Joseph Paxton are good varieties for forcing.—ANON.

**Gooseberry Caterpillars.**—Will your correspondent, who states (p. 39) that he clears his trees of these by means of "middlings," kindly say what is meant by that term?—H. T. E., *Clyst St. George*.

**Grapes.**—J. P.—They are "rusted," but without knowing particulars as to the mode of growth, we cannot point out the cause. "Rust" is an injury to the skin of the fruit frequently caused by over-heating and over-dry, hot air. Too much sulphuring will similarly injure the skin and cause "rust," and some gardeners say cold currents of air will even rust Grapes. You should look carefully to these points in future; there is no fungus.—F.

#### SEASONABLE WORK.

**Vines.**—It is now generally known that the best coloured and most highly finished Grapes are cut from Vines the roots of which are lifted and relaid in fresh compost. To carry out this system successfully, they should have the run of internal and external borders, one of which may be taken out at any time from the cutting of the fruit to the ripening of the foliage; but the sooner after the last bunch has been cut, the more successful will be the operation, as the roots will take to the new soil, and the Vines will make fresh laterals before the leaves fall. By way of example, we will assume that an early house of Grapes has not finished in a satisfactory way, and that it is now empty. The first operation should be the preparation of the compost in near proximity to the border. The house should be closed, shaded, and syringed, in order to preserve the old foliage during the time the work is going on, and despatch being an important item, a strong body of men should be set to work with a will, using steel forks, and carefully

preserving every root, until the whole of the border has been removed. Having secured the exposed roots by covering up with damp mats or frigi domo, correct the drainage, wheel in the new compost, make firm by treading, relay the roots, sprinkle with warm water, and cover with 4 in. to 6 in. of new soil. When all is finished, cover with a layer of fresh stable litter that will not impede the passage of solar heat, while it checks evaporation; gradually reduce the shading, and syringe daily until new growths set in. This will be observed in ten days, when the usual treatment may be resumed.

**Pot Vines.**—Vines in pots intended for early forcing should now be in a fit state for turning out of the house in which they have been grown. If thoroughly ripe and the buds are prominent, a sheltered situation against a south wall, with some kind of covering for the roots, will answer very well. It will be necessary to secure the canes from injury by nailing them up to the wall, and in order to prevent premature ripening of the foliage, an occasional syringe after a hot day, and a moderate supply of water to the roots, will for some time be advisable. Later vines now ripening their wood will require more air and less moisture. Keep the foliage clean and healthy by syringing occasionally, and give sufficient water to the surface roots to insure the proper filling of the buds that are to give fruit.

**Pines.**—Pines in all stages will now take more water than at any other season; but plants swelling off fruit will derive most benefit from daily feeding with diluted liquid, syringed into the axils of the lower leaves, and closing with strong solar heat and atmospheric moisture every afternoon. The great drawback to the use or abuse of excessive moisture is the enlargement of the crowns; but this may be moderated by keeping the fruit close to the glass, giving plenty of air through the day and using the thinnest possible shading for a short time on very bright days. To secure bright highly flavoured fruit, every plant should be removed to a dry, warm, airy house or pit as soon as the pips begin to change colour, and if it be thought necessary to keep them for any length of time they may be placed in a room or coolinery to finish.

**Successions.**—If plants intended to throw up fruit this autumn incline too much to growth, a general turn over and rearrangement in a renovated bed will often produce the desired effect. Queens intended for starting in February should have more room so as to secure full exposure to light and air. Keep them near the glass, ventilate freely, and guard against sudden checks by maintaining a temperature of 85° to 90° about the roots. If fruiting stock is likely to run short, another batch of the strongest successions may be potted into 10-in. and 11-in. pots. Keep young stock moving on, shift suckers before they become pot-bound, and insure firm texture by growing them with plenty of heat and light. W. COLEMAN.  
*Eastnor Castle.*

#### LATIN PLANT NAMES.

At the risk of being called "pedantic," I am, with your permission, going to protest against what I consider errors too commonly seen in our botanical nomenclature, and the pronunciation thereof. In the first place, why will people speak of a plant from China as being "chinensis"? Such a formation is impossible; they mean "sinensis," which would be the nearest approach in Latin to describe the country of the Seres, whence came our silk.

It is to be feared our botanists know less of Latin than of their own department of knowledge. We see such names as "Phlox Nelsoni;" the "crude form" of that gentleman's name being "Nelson," the nominative in Latin would be "Nelson," genitive "Nelsonis;" so we ought to speak of "Phlox Nelsonis."

Before leaving these Latin names might I suggest that they require quite as much consideration as the English ones we are now seeking to give our flowers? As an example of what I mean, take "Lilium speciosum, more usually but erroneously called lancifolium." Well, I would submit that lancifolium, as it gives us some information as to the character of the plant, would be preferable to a vague adjective like speciosum." This "descriptive" system, too, might tend to limit the habit of naming plants (in barbarous Latin compounds) after persons, a practice carried to excess. To read some of these appellations is almost as painful to a scholarly eye as is the decipherment of the labels at Kew, the majority of which are written vertically, for the greater comfort of the earnest student.

As for pronunciation; would it not be better to call that elegant climber the Clématis, instead of pronouncing it, as most do to rhyme nearly with Tomatoes! On my principles, too, Veronica is preferable to Verónica, as well as more correct. As for getting my friends the gardeners to give up speaking of the Gladiolus (when they mean the



(*Gladiolus*) I simply despair of it. It may be said that usage is against me; but I maintain that to usage based on indolent ignorance no authority can be ascribed.

BOTANICOMASTIX.

## TREES AND SHRUBS.

### THE NORWAY SPRUCE.

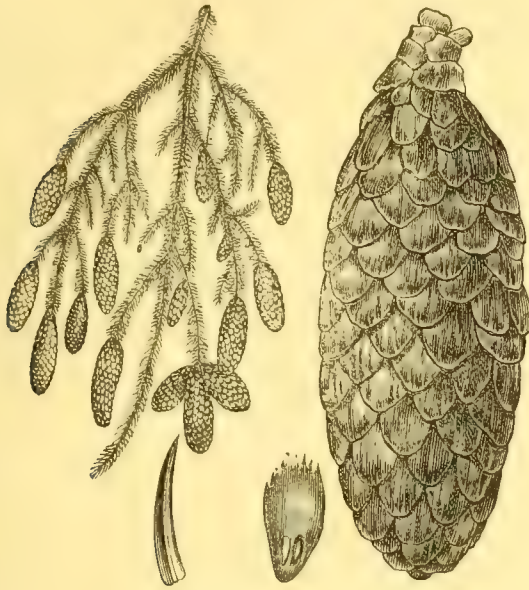
(*ABIES EXCELSA*.)

ALTHOUGH not indigenous to Britain, the Norway Spruce has been introduced so long, and is so extensively planted, as to be one of the most

forests, in which, where conveniently situated for transit, the trees are being rapidly thinned, as it is from this kind that the white deal of commerce is derived. This species seems unusually liable to sport, as there is an almost endless number of varieties of it, and while some can be accounted for by its wide geographical distribution, yet the majority have originated in this country; indeed, where grown extensively, it is an easy matter to pick out many distinct seedling forms.

Of the dwarf or hedgehog Spruces there is quite a group, among which *pygmaea*, *Clan-brasiliana*, *brevifolia*, and *Gregoriana* are the most distinct. Of variegated kinds, there are *aurea* and *Finedonensis*, while others, whose names are sufficiently descriptive, are *pendula*, *monstrosa*, *attenuata*, *horizontalis*, and *stricta*. As stocks on which to graft many of the rarer kinds this Spruce is largely used. Another allied species is *Abies obovata*, so called from the shape of the cones which constitute one of its principal distinctive features. In habit it much resembles the Norway Spruce, but its growth is somewhat slighter and more pendulous. The cones, however, are so distinct that there need be no fear of confounding the two kinds, being in the Norway Spruce 6 in. or 7 in. long, with the scales pointed and rugged at the edges.

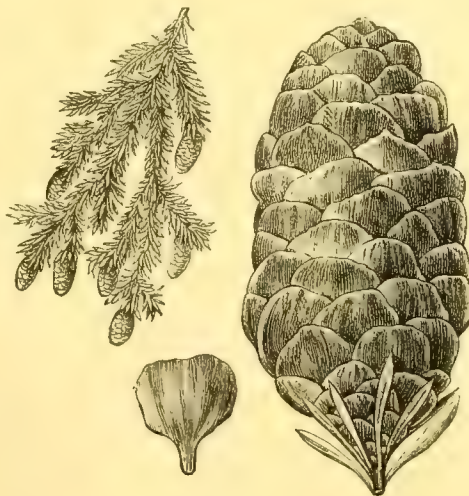
while in *A. obovata* they are not more than 3 in. long, almost egg-shaped, and the edges of the scales are perfectly smooth. *A. obovata* is a native of Siberia, and therefore quite hardy,



Norway Spruce (*Abies excelsa*).

common of all Firs met with in this country. It forms a beautiful pyramidal tree when allowed to properly develop itself, but it is mostly too thickly planted or used as a nurse tree for other, and more tender subjects, and cut down when they have attained sufficient size to take care of themselves. Its thorough hardiness is a great point in its favour, being proof against such winters as we have lately experienced, while many presumably hardy Pines have still a browned and unhappy appearance; at the same time I do not suggest that we should depend wholly upon some half-a-dozen sorts, such as this Spruce, *Pinus austriaca*, *Laricio*, *sylvestris*, *Pinaster*, and *Strobus*, for planting, as many of the less-known sorts are thoroughly hardy, and succeed perfectly in this country.

The Norway Spruce is by no means limited to the country from which it takes its name, but is found more or less throughout Central and Northern Europe, in many places forming huge



*Abies obovata*.

but the climate of this country seems unsuitable to its requirements, as it is rarely seen in a flourishing condition. It succeeds best in an open, airy, sheltered spot.

ALPHA.

### BASKET WILLOWS IN SCOTLAND.\*

SCOTLAND is not distinguished as a Willow-producing country, not because either the soil or climate is unsuitable, but because the subject has not received sufficient attention. Few countries in Europe of similar dimensions produce so small a quantity, or are so dependent upon foreign supply. The total area now under cultivation probably does not exceed 120 acres, and the year's produce would not supply the trade with more than a tenth part of its requirements. The deficiency is met by importations from Germany, Holland, France, Belgium, and England, the best qualities coming from England, chiefly from Nottingham, and the inferior from Germany and Holland. Willows for basket-making purposes, of large size, have, however, been grown in Scotland, and there is no reason why Scotland should not produce all she needs for her own consumption, and of a very superior quality to the greater part of which she now imports. It is only within the last twenty years that Willow cultivation has received the attention it deserves. Up to that time it was generally supposed that Willows would grow anywhere, and required neither care nor attention. It was thought only necessary to push a few cuttings (collected at random) into any swamp or useless corner, and leave them to chance in order to obtain a crop; and even now scores of water-logged patches are suffered to exist, with a few miserably starved Willow stumps dotted about, the crops of which would not cover the cost of harvesting, and yet there are few crops will yield a better return when properly managed. But in order to secure the best results many old and deeply-rooted errors must be cleared away, not the least of which is that Willows grow best in swampy, undrained land.

The Species of Willows are numerous, and much confusion exists in their classification. There are, however, only about six species, with their numerous varieties, that are of any commercial value, or worth cultivating with a view to profit. Three of those species are essentially basket Willows, and the other three are adapted for poles and timber trees, and they differ so much in character and constitution, that the treatment and soils adapted for one are very unsuitable for the others. The tree forms or species of basket Willow most in use are *Salix viminalis*, *S. triandra*, *S. purpurea*, and their numerous varieties, about sixty of which are in cultivation; but at least two-thirds of this number might be discarded with advantage to both grower and consumer.

*Salix viminalis*, or the Osier proper, is the most important variety under consideration. This class may be easily distinguished by its long narrow leaf, widest near the base, but seldom exceeding three-quarters of an inch at its widest part; the leaves are slightly dentated at the edges and of loose texture; they are smooth above, and covered with a white, silky pubescence below, and are entirely destitute of stipules. The bark of the twigs is smooth to the touch and sweet to the taste. Between 30 and 40 varieties of this species are now in my possession, differing much in the colour of the bark, size of growth, toughness of wood, &c., but all may be known by the above description, and, what is of equal importance, the description cannot be made to apply to any other species of Willow. The six best varieties of the Osier are known in the trade by the names of White Osier, Brown Osier, Merrins Osier, Basford Osier, Belgian Osier, and Longskin Osier, and this number is sufficient for all practical purposes of the basket-maker. The *S. viminalis*, or Osier proper, is the best adapted of all Willows to the rich soils found on river margins, where it is subject to occasional floods. It is a vigorous grower, very hardy, and must be well fed by the deposits of floods or by artificial irrigation to maintain it in continued perfection; and it bids fair at no distant date to solve one of the questions of the present day, viz., the disposal of surplus sewage. Its capacity for absorbing sewage has already been tried with

\* Mr. Scaling, in Highland Society's Transactions.



success upon several farms, as, for example, at Northampton. *S. triandra* is the type of the next group of Willows used in basketmaking. It might be supposed that the name *triandra* was a sufficient guide to identification, but as the inflorescence of Willows is too variable to be depended upon, a more simple and certain means of identification is necessary. There are a great number of varieties of this Willow, more than twenty of which are under cultivation, but all may be easily recognised by the circumstance that from three years old and upwards they all annually shed their bark, and as this is not the case with any other Willow, no one can fail to identify it. The *S. triandra* yields the best results when planted in a rich loamy clay. It is a native of Northern Europe and very hardy in constitution. The wood is harder than that of the Osier, and it is slower in taking root; but when it has obtained a good hold in suitable land, it will last longer without replanting, and under favourable conditions it is a very profitable Willow to grow. The best six varieties to cultivate are known under the following trade names: Brown Norfolk, Green Norfolk, Italian, Black German, Black Mule, and French.

*S. purpurea*, the type of the third group of basket Willows, is of more slender habit and more precarious to grow than those previously named; indeed, it may almost be said that none but professional Willow-growers can deal with them profitably. They grow well in sandy loam, and will do moderately well in a gravelly soil. There are more than 20 varieties of this group, but only 2 that grow well in Scotland, *S. purpurea* and *S. Kirksi*; the latter is known by nurserymen under the name of Whipcord. The demand for this Willow is somewhat limited, and it cannot therefore be recommended for general cultivation.

**Conditions of Growth.**—One of the first and most important is that no Willow intended either for poles, timber, or for basket-work can be profitably grown in a sour swamp or in waterlogged land. No reasonable amount of flooding nor of artificial irrigation will injure Willows, provided the water can get away and not remain to become stagnant. Another matter of importance is the careful selection of cuttings. When forming a new plantation not only is it advisable to have the best kinds, but it is of equal importance to take care that there is no mixing of different varieties. Not only each species, but each variety must be kept distinct; any mixture of sorts is fatal to success. Mixed basket Willows, however good each sort may be, are of small value; besides, no two varieties grow precisely alike; one variety always overpowers the other, and uniformity of crop is destroyed. Cuttings may be taken from either one or two-year-old twigs. If taken from one-year-olds, not more than three cuttings must be taken from any rod, however large it may be, for if large there is a risk of the top not being sufficiently ripe to grow; but if taken from two-year-old twigs, they may be cut up to the extreme growth of the first year. The recognised length for cuttings is 12 in.; the thick ones may be 1 in. or 2 in. longer, and the thin ones 1 in. or 2 in. shorter. They should be cleanly cut, without any splinter, and with one stroke of the knife. The trade price for cutting is 10s. per 1000 for mixed or unselected sorts, and 15s. per 1000 for guaranteed sorts. The number of cuttings per imperial acre should range from 20,000 to 30,000. Professionals often plant many more, but the extra care involved by so doing would not do for general practice. The following distances at which cuttings may be planted will be found well adapted for general purposes: *Salix viminalis*, 20 in. by 16 in.; *S. triandra*, 18 in. by 15 in.; *S. purpurea*, 16 in. by 13 in. It is not always advisable to follow a hard-and-fast rule in planting; something in all cases must be left to the judgment of the planter. Therefore, in giving the distances just named it is with the idea that a margin is left to the judgment of the person who has the work in hand. It may, however, be said that it is safer to err on the side of over-close

than over-wide planting when it is considered that the value of a basket Willow depends more upon the twigs being long, straight, and clean, than it does upon the toughness and elasticity. All basket Willows grow crooked and covered with lateral twigs when too much space is allowed; and for the same reason they are not of much value when grown in long narrow plantations. To be good they must be massed, and receive light and air from above, and not at the side.

**Land for Planting.**—In the preparation of this much must be left to the superintendent of the work. Where steam power or horse power can be applied, it is cheaper than the spade and quite as effective. The chief thing to insist upon is, that by whatever means it is done, the hard pan or subsoil must be broken up to a depth of 12 in. to 14 in., and the surface brought into a good free mould before planting. The planting may be done at any time when the ground is free from frost between the middle of November and the end of March. There are some advantages in early planting, but those advantages chiefly arise from having the work well in hand, for if deferred, the spring frosts may necessitate the work being done under unfavourable conditions; but in so far as the ensuing crop is concerned, it is of very little importance. When the land is in suitable condition the cuttings are easily planted. The palm of the right hand should be protected by leather, for the purpose of pushing them down to the required depth; and when pushed in, the soil must be firmly trodden around them, taking care not to bruise or bark them in so doing. Many cuttings die from this being imperfectly done. I regard this as of so much importance, that I always appoint one man to attend to it, and at the same time to see that the work is neatly and uniformly done. The whole operation is simple; each man will plant from 2000 to 3000 cuttings in a day when he has got used to the work. After planting, the land must be kept clear of weeds. This is especially important for the first two years, after which time less attention will suffice. But it must not be forgotten that if a profit is to be made by growing Willows, they must not be allowed to struggle for their existence against weeds.

**The first crop of Willows is seldom of much value;** but however poor it may be, it must be harvested or cut off; for if it was allowed to stand over until the second year, the united produce of the two years would be nearly worthless. If the first year's crop be carefully cut, without disturbing the rooted cuttings, the second crop will be of considerable value, from which time there will be a gradual increase of value up to four or five years, and should all circumstances be favourable, a plantation of *S. viminalis* should last (without re-planting) fifteen to twenty years, and a plantation of *S. triandra* from twenty to twenty-five years, and a plantation of *S. purpurea* from fifteen to twenty years. All Willows for basket work should be cut as early in the winter as possible after the leaf has fallen. The knife used for cutting is shaped like a sickle, but not so large in the circle, and in using it the cut is made from the ground upward, the left arm encircling, and the hand grasping the twigs whilst the cut is made. The grass and weeds must be shaken out of the twigs before they are tied into bundles, for if this is not done, the Willows are apt to mildew. The size of bundle that is most convenient for moving about is 36 in. in circumference at the band. The bundles must be tightly tied, and the band should be 12 in. from the root ends. The appearance of the Willows is much improved by neat and uniform tying, and extra care in this operation will not be thrown away when they are offered for sale. As soon as tied, they should be carried off the ground, and set on end; and in this state they are ready for market.

**The cost for Willow planting under ordinary circumstances may be stated at £25 per acre for *Salix viminalis*, £30 per acre for *S. triandra*, and £35**

**per acre for *S. purpurea*, and when let by contract this is the usual price. The current expenses attending cultivation will be as follows, under ordinary conditions:—**

Weeding per acre	£1 0 0
Cutting and tying	1 10 0
Rent and taxes	2 10 0
Interest on outlay	1 5 0
Deterioration	1 5 0
Incidental expenses	1 0 0
	£8 10 0

The value of Willow crops will range from £10 to £20 per acre, according to the state of trade and the seasons. Occasionally they are worth more than twice that amount. But I should not advise any one about to plant to base their calculations upon extreme profits, lest disappointment ensue. A good return for the outlay may be relied upon in the average of years, and it may safely be said that few, if any, crops will give better results, provided the rules here laid down are duly observed.

## THE INDOOR GARDEN.

### OLD AND NEW CYCLAMEN SEED.

I AM surprised that four-year-old Cyclamen seed should have germinated days before that which is newly ripened. This result is so diametrically opposed to all my experiences in the matter of seeds sowing of nearly all sorts, including that of the Cyclamen, that I feel inclined to suspect some error has crept into the matter. May not your correspondent who makes the assertion (p. 36) have accidentally mistaken the pan or pot containing the old seed for that containing the new by the unintentional displacement of the labels or otherwise? I have always found that the older the seeds the more tardy they were in vegetating, and if very old, that they did not vegetate at all. I am aware that there are many kinds of seeds (the seeds of most weeds, for instance) which will retain their vitality for an indefinite period when buried to a considerable depth in the soil, or in some way excluded from the action of air. But, generally speaking, however carefully seeds may be kept in paper bags, air-tight drawers, or otherwise, their vitality, I have always been led to suppose, gradually diminishes until they finally become quite dead. The length of time which the different kinds of seeds may be kept differs, of course, very considerably, and much also depends upon the manner in which they are kept. The subject is one of considerable importance, as, if your correspondent's experiment is correct, it is possible that valuable seed may not infrequently be thrown away as worthless.

P. GRIEVE.

### KALOSANTHES.

THESE when well grown are brilliant plants. The only thing that injuriously affects their flowers is damp, which causes the petals to become spotted; but if kept in a dry atmosphere they are always free from this defect, and remain in first-rate condition for at least six or eight weeks, and that at a time when such bright-coloured subjects are scarce. Not only are they very durable and exceedingly effective, but they are also fragrant. The most useful sized plants for general purposes are such as may be grown in 6-in. or 8-in. pots, as, being of a succulent nature, they require but little root room, and may therefore be kept in a limited space in the most perfect health if their wants as to water are duly provided for. The great mistake many people make, however, is in keeping them too wet during winter; when this is done it destroys the very fine hair-like fibres which are their principal feeders, but which during the short dull months of the year are comparatively dormant, as the leaves are then gorged with sap, and make only very slight demands on the roots. Cuttings may be made of such of the young shoots as are not showing bloom. The strongest and best should be chosen, which, when



cut off and made ready for putting in, ought to be about 6 in. long. The way to prepare them is to turn the leaves sideways, so as to bring away the part that envelops the stem, which should be bared about a third of its length, so as to admit of that much being inserted in sharp sandy soil, in which they will root readily. The best place to ensure their doing this is on the shelf of a greenhouse, where they can be covered with a bell-glass tilted a little on one side, as when kept quite close there is a danger of their rotting, especially if watered, which should not be done unless they appear to be shrivelling, all that is necessary being to prevent this for a week or two, when they will be found sufficiently advanced to bear exposure. After being potted singly, and having had time to get hold of the soil, the heads of the shoots may be nipped out, which will cause them to break again and flower the following year. To enable them to do this, however, they must be so managed as to secure their thorough maturation, which can be best effected by growing the plants in full sun during the summer, and, when winter sets in, placing them in a very light, airy position, with their heads well up to the glass. When there they must be kept quite dry till the days begin to lengthen, when they will gradually take an increase of water till the flowers expand. As soon as the beauty of these fades the plants should be set outdoors to get them ripened preparatory to cutting them down; as soon as this is done it is necessary to keep them quite dry, to prevent bleeding, and enable them to break again, which they soon do, when they are ready for shaking out for the purpose of being repotted. This should be done in good fibry loam, with a sprinkling of sand added, and the plants should then be placed in a cold frame, where they can be kept close for a week to give them a start, after which the more exposure they get the more sturdy will the young shoots be. These are generally emitted so close as to require a little thinning, which should be done so as to leave them regular throughout, and lay the foundation, as it were, of the future specimen. Grown to a large size, *Kalosanthes* make grand exhibition plants, and are most striking objects in a conservatory, and more particularly so if they can be set singly in vases in conspicuous parts.

There are several varieties of *Kalosanthes*, all of which are very showy; the brightest coloured one among them is the old *K. coccinea*, the flowers of which are quite dazzling to look on. Those who may have any plants that were cut down late last year will do well to keep them steadily growing on, as they cannot be expected to flower, and it is only by keeping them over in this way that the best results are obtained, as, from the longer time they have, the shoots become perfected, and set their buds in the autumn. Excepting greenfly, *Kalosanthes* are not subject to insects; but this aphid, if not destroyed, gets among the young opening flowers, and disfigures them to such an extent as to quite spoil their beauty. To obviate this, it is always advisable to fumigate the plants just before they reach the stage mentioned, which will carry them safely through; or the heads may be dipped in or syringed with tobacco water instead of the fumigating—the latter, however, being preferable, as then every insect is reached.

S. D.

#### FUCHSIAS.

THERE are cultivators to be found who treat *Fuchsias* in such a way as to show what can be accomplished by studying their requirements, but these are exceptions, and there is little question that *Fuchsias* are not nearly so well grown now as they were in times past. The habit of the plants is such that they naturally grow away with a single leading stem, which produces drooping branches so profusely that, with anything like proper management, they will all but hide the pots they occupy. There is no arbitrary rule that *Fuchsias* should be grown to any one particular shape, but the sharp pyramid, formed by a single stem densely clothed with drooping branches, is the habit most natural to the plants; moreover,

this form contrasts so pleasingly with most other plants cultivated in pots, that on this, if on no other ground, it is most desirable to so have them. The bare naked bottoms and badly-furnished examples, so thin of side branches as not to be more than half clothed, are the results of indifferent cultivation. Young plants are much preferable to old ones, and the ease with which they can be propagated and their freedom of growth is such, that there is no necessity for keeping the old scraggy examples that are more the rule than the exception. Provided cuttings are struck at the proper season, even where very large specimens are required, they can be grown in twelve months from the time in which the cuttings are put in.

**When to Strike Cuttings.**—Pretty little plants full of flowers as they can hold can be had by the middle or end of May from cuttings struck in the early part of the year, and this is the time the market growers, who manage these little plants so well, strike them; but for larger examples from the middle of July to the beginning of August is the best time for striking cuttings. If such as are of the right description—that is, composed of free growth, not the thin flowering wood which does not grow freely—are put in about the above time, where they can be kept close and moist, they will at once strike, after which move them singly into 4-in. pots and keep them through the autumn and winter in an intermediate temperature in a house or pit where they will be close to the glass. Thus circumstanced they will keep on growing slowly, and the leading shoot should be stopped to cause a sufficient development of side branches if the habit of the variety is such as to require that attention. About the beginning of February give them a little more warmth and move them into pots 3 in. or 4 in. larger, using good turfy loam with a sprinkling of leaf mould and some sand. Thus treated they will thrive apace. It is desirable to get them on in size early in the season, for the natural disposition of the plants is to flower when the weather becomes hot, and it is difficult then to get them to do anything else. By the middle of April they should be moved into their blooming pots, the size to which will require to be regulated by the size to which the plants are wanted to grow; a 13-in. or 14-in. pot will support a large specimen. Stopping the leading shoot and also the side branches will in the case of most kinds have to be done once or twice, according to the habit of the particular variety and the character of the house or pit in which they are grown; the lighter the structure and nearer the glass they are kept, the more disposition they will have to branch out, but it is a bad plan to let them go too long without pinching out the points of the shoots, as this lays the foundation for fully furnishing the future specimen.

**Old Plants.**—I have said that young *Fuchsias*, managed as above, are preferable to old ones, from their being better furnished. Still, even old plants may be much improved in this respect. The best way of accomplishing this is to head them down to within 6 in. or 8 in. of the bottom, instead of the ordinary pruning back, which often results in their breaking so much stronger towards the top than at the bottom, as to leave the base insufficiently furnished. After heading down in this way, it is necessary when they have begun to grow freely to stop the leading shoots several times to cause the side growths to push freely, otherwise from the presence of so much root-power, the leader rushes up too quickly without being sufficiently furnished with side branches. Some kinds are more disposed than others to spire up in this manner, but the judgment of the cultivator brought to bear on this will easily regulate the growth.

T. BAINES.

Southgate.

**Winter Blooming Plants.**—I wish to know the names of some plants and annuals for winter blooming in a greenhouse and porch. They should be pretty hardy, as the porch is cold. I have *Chrysanthemums*, and I wish something to come in before *Primulas*, *Cinerarias*, and

[*Calceolarias*. Would Balsams do in winter or Asters?—G. Neither Balsams nor Asters would do. The following would be the most likely plants to meet your wishes, viz., *Bouvardias*, *Tree Carnations*, and the hardy zonal section of *Pelargoniums*. Of annuals the following might do if sown in pots now and grown on in the open air, viz., *Collinsia bicolor*, *Limnanthes grandiflora*, *Nemophila insignis*, dwarf *Salpiglossis*, *Silene pendula compacta*, and *Virginian Stock*.—W. W.]

**Fuchsias.**—J. H.—You say truly, the “eyes of your *Fuchsias* seem eaten out.” Such malformed growths are common where mites and aphides abound. These creatures are very partial to “eyes,” and as you sent us a fair stock of mites and aphides with your *Fuchsia* branches, no doubt they are the depredators. The small holes in the leaves have also been eaten away by insects.—F.

## GARDEN DESTROYERS.

### OAK CATERPILLARS.

DURING the last week or two these seem to have all disappeared, and gone I presume into the chrysalis state. In the almost total absence this season of their more numerous and deadly enemies, the starlings, the rooks and jackdaws did good service in some of our woods by attending at the feast of caterpillars as long as the banquet lasted, every day, early and late, and kept up an incessant noise and deadly warfare against the destructive plague of leaf-eaters. The young pheasants, too, that are being reared in the woods also shared in the feast of creepers to, I should think, satiety, judging from the greedy manner with which the young chicks picked the caterpillars up after the latter had spun cocoons and dropped in myriads from the trees. They seemed to thrive better on them than on the artificial food supplied to them by the keepers; indeed, the latter tell me that the young birds have not done nearly so well since the disappearance of the caterpillars. There was evidently the prospect of a heavy crop of Acorns on the Oak trees this season, but I should think that the denuding of leaves to which the trees were subjected will prevent the crop from maturing it. It is, however, even surprising to see how quickly those trees that were almost quite bare of foliage are recovering the pent-up sap for want of leaves to feed on it, and the genial weather and high temperature that we have lately had have, no doubt, conduced in a great measure to convert the bare leafless trees in so short a time into green ones. Fortunately those insects that prey on the leaves of the Oak tree appear only to have one brood of caterpillars during the year; I notice also that they are strictly gregarious in their habits, for some parts of the woods were completely cleared of leaves, not only in the case of the Oak tree, but also that of Hazel and other underwood.

Not only are flowers and fruit superabundant this season, but insects and grubs of all kinds swarm, so to speak, everywhere. A glance at the cottage gardens when passing through villages hereabouts shows the havoc that has been done to crops, more particularly Onions, Gooseberries, and Currants. In my own garden Onions have nearly all gone back through the grub, but in the case of the Currant and Gooseberry I have saved the crop by hand-picking the caterpillars. Insectivorous birds of all kinds are very scarce, particularly robins, chaffinches, and tits of various kinds, hence the greater necessity of strong measures being used to battle against all the plagues to which this eventful year of over-productiveness is heir to. One who has tried the experiment of Fir-tree oil as an insecticide tells me that a free application of it with the syringe is certain death to the Gooseberry blight. Of course, every new brood of the caterpillar must receive a dose of the mixture as soon as they appear; soft or rain water should be used to mix with the oil, for hard water will not blend. Doubtless, the only drawback to it is the expense. When whole quarters of fruit trees require dressing, the work becomes costly. Soot and Hellebore powder are also effective, but their application renders the fruit more or less objectionable, whereas the oil is said to be perfectly harmless and not offensive. GEORGE BERRY.



## MARKET GARDENING IN THE NORTH-WEST OF FRANCE.

Those who may carefully study the following pages will doubtless be struck, as I was, with these two facts: (1) That the market gardens in the districts which I have selected are on very poor land; and (2) that the quality of the land has much less to do with its productiveness than the available supply of water. Indeed, if one were to divide the market gardens into separate orders, classes, or other divisions, the result would be very much as follows:—

1. Market gardens with water under the soil.
2. Market gardens with water on the soil.
3. Market gardens with water above the soil.

In the order just mentioned it will, perhaps, be as well to take the three classes of market gardens, namely (1), those near Amiens on water-logged peat; (2), those irrigated by sewage near Paris; (3) those near Paris watered by artificial means. In addition, some notes will be given on the methods of cultivation of certain plants, such as Asparagus, Dandelion, Figs, and Vines, which are pursued in certain localities in the north-west of France. Englishmen will read with some astonishment the enormous amount of care bestowed across the Channel on the cultivation of salads, and the large proportion of garden land occupied by them. But it must be remembered that neither the déjeuner nor the dinner is in France considered complete without a well-made salad. The consumption of Lettuces, Endives, Radishes, Cresses, and things of that kind is something enormous per head of the population; and so discriminating is the public taste that each of these plants is divided and sub-divided into varieties, each one of which has its proper season and uses. All this care is not confined to the production of the plant; it is continued into the kitchen, and is completed in the dining-room. Indeed, there are few French ladies who consider their daughters' education complete if they cannot make a salad in a manner which will at the same time satisfy the requirements of the artist, the *savant*, and the *gourmet*. But for this special feature of French living, it is doubtful whether the market gardeners of Vaugirard, for example, could afford to pay half the rent they now do.

**Amiens Peat District.**—Every one who has travelled from Boulogne to Paris on the Northern of France Railway must have noticed near Amiens a tract of peat-bog, consisting of alternate patches of land and water, the former nearly swamped, but nevertheless bearing crops of garden produce. A day spent in exploring this region would well repay, not only the professional market gardener, but every one interested in political economy. The district is about 2000 acres in extent, parcelled out in patches of small size. These patches are divided by ditches varying in width from 6 ft. to many yards, and all sufficiently deep to allow the easy passage of canoe-like boats which are universally used by the gardeners to convey manure from the town to the gardens, and produce from the gardens to the river-side market. The gardens rarely exceed  $2\frac{1}{2}$  acres in extent, and one of that size would be managed entirely by a man and his wife, but then the work is simple slavery. In the summer the women work on three days in the week from half-past two in the morning until ten o'clock at night, and on the alternate days from five a.m. to ten p.m., making an average of about eighteen hours per day! In the winter they work from daylight until dark. Similar hours are observed by the men, and they do the heaviest portion of the work. If the workpeople are hired, the women receive about 1s. 5d. a day, and the men 2s. 4½d. In some cases the gardeners are

owners, and in others they are tenants of their land. The drier land is let at an average rental of nearly £5 per acre; and the good land, with a portion of it peaty and only slightly decomposed, lets at still higher prices, while the value of the fee simple exceeds £160 per acre. Considering that one-fifth of the so-called acreage consists of water and only four-fifths of land, it should be interesting to learn how the gardeners manage to pay such rents and earn their livelihood out of such small gardens; and how they obtain a gross produce, estimated to average £35 per acre, out of a peat bog. The following description, in which it is assumed that a new garden is to be made, is drawn from information which I obtained partly from M. Mannechets, President of the Society of Agriculture and Horticulture of the Somme, but chiefly from M. Racquet, Professor of Agriculture at Amiens.

**Preparation of the Soil.**—A certain quantity, generally a thickness of 6 in., of peat, which forms the subsoil, is brought up to mix with the top soil, and thus give it a fertility which it does not naturally possess. The depth from which the peat is obtained varies, of course, with the nature and depth of the surface soil, but from 2 ft. to 3 ft. may be taken as an average. Beneath the peat is a layer of impermeable clay, which is never touched in any case. After the peat has been mixed with the surface soil, and in some cases coincidently with the mixing, a double dressing of stable manure from Amiens, namely, from 20 to 24 tons per acre, is given. This manure costs 11s. per ton, and probably the great demand for it is the explanation of its very high price. No lime is used as manure, and the great object of the gardeners is to preserve the vegetable fibres in the peat as long as possible. After a certain time, however, varying from twelve to twenty years or more, the land gets "tired" of the continual cropping, and then its fertility is renewed by an admixture with it of the same quantity of peat as before, followed by a double manuring as just described. I have stated that one-fifth of the nominal acreage consists of water. Therefore the owner or occupier of the garden has the right to renew the fertility of his land by obtaining peat or mud from his side of the bed of the adjoining ditches, instead of from the subsoil of his land. When the land has been fairly brought into cultivation it is dug by hand every winter two spits deep, and in spring it is manured with from 10 to 12 tons per acre of stable manure, which is forked in immediately before the first sowing. During the last few years a sewage manure, manufactured by the Goux process, has been somewhat extensively used at the rate of rather more than 1 ton per acre, with less than 1 ton of stable manure. The Goux sewage manure is said to contain  $2\frac{1}{2}$  to 3 per cent. of nitrogen, 3 to 4 per cent. of phosphoric acid, and  $1\frac{1}{2}$  to 2 per cent. of potash, and its price is £5 per ton, which is as high in proportion as the cost of the stable manure.

**Courses of Cropping.**—Doubtless many variations in the system of cropping which I shall describe may be found in the Amiens market garden district, but I believe the following statement will give a fair general idea of the system pursued. It should be noted, in advance, that the gardeners generally grow their own seed, as they assert that seed obtained from even the best seedsmen generally fails, and it is quite conceivable that a process of acclimatising both seeds and people is necessary to a successful result under the circumstances.

(1) In February the land is sown with a mixture of short Radishes and Tongrés Carrots, and as these are gathered they are succeeded by a mixture of Onions, Leeks, and winter Let-

tuces, which come off in succession. The Lettuce is called "giant," meaning glossy or shining, and has its leaves bordered with a reddish tinge. Amongst the Onions a few seeds of Cauliflowers are sown for the purpose of bearing seed. It is impossible to say what the portion of land devoted to the above course in one year will bear the next, but it may be assumed that it will be one of the following, and probably all of them will be taken in turn. In fact, the course just described appears to occupy about one-third of the gardens every year, and thus Onions are not taken on the same ground more than once in three years.

(2) This course is essentially devoted to the Marjolaine Potato, which is planted in February. Between every second row of Potatoes, and in place of a third, shoots of Artichokes are planted in April, the plants remaining not more than two years. The distance between the rows of Potatoes, or of Potatoes and Artichokes, is about 18 in. Sometimes the bed is planted entirely with Potatoes, and in that case they are succeeded by Cauliflowers with Lettuces between them, or with Lettuces and Chicory (Endive) in place of Cauliflowers.

(3) In the August of the previous year, Batavian Lettuces have been sown and pricked out in October or November; they are gathered in May, and are succeeded by Haricots sown in May or June.

(4) In November of the previous year, about the 25th, Peas having been sown in double rows 1 ft. apart, with a distance of 4 ft. 6 in. between each double row, a line of Savoys is planted in May in that interval, and, like the Peas, gathered as soon as ready, and as the ground is cleared various salads are planted.

(5) This course consists of winter Cabbages, which have been sown in August or September, planted out as soon as possible, and gathered in June. The Cabbages are followed by Carrots, which are again succeeded by Chicory (Endive) in August or September. It should be added, that a piece of land is devoted to the raising of seedling Cabbage, Savoy, Lettuce, and other plants, to be pricked out as required.

**General Remarks.**—The quantity of land cultivated by one person is generally in a number of pieces, more or less distant from one another. This is not objected to, as an accident happening to one part of the district, such as a flood or a storm of wind or hail, is not then so likely to affect all the plots belonging to one man to an equally injurious extent. Very ingenious temporary and movable fences are made of Willow twigs, mats, and all kinds of refuse material, in order to protect the plants from frost and from the prevailing winds. The drier season the better for this kind of gardening, as vegetables and salads are dearer in dry weather, and the Amiens marsh gardens rarely or never want watering, in consequence of the water level being so near the surface of the land. The porous nature of the soil is increased, or, at any rate, carefully preserved, by the annual diggings and manurings. The produce of these gardens is very large in quantity, but the quality of the vegetables is not the best. Although rarely or never watered, the crops are nearly always watery and deficient in flavour. Thus, market gardeners who cultivate ordinary light land, and who frequently have to water their crops, can sell Cabbages, for instance, at 10 centimes each, when the Amiens gardeners have to content with 4 or 5 centimes apiece for most of theirs. Still, there can be no doubt that a large amount of valuable produce is economically obtained from a soil which an uninitiated observer would consider impossible to cultivate under the circumstances which I have attempted to describe. When



taking leave of one market gardener I mentioned the bogs of Ireland, told him of their neglected condition, and their microscopic rents, and asked him whether it would not be worth his while to make a personal examination of them with a view to emigration. His exclamation, evidently sincere, was: "Ah! if I were young."

**Sewage Market Gardening.**—The object of this notice is to draw attention to the manner in which sewage is profitably applied in the vicinity of Paris to the growth of market garden crops. It is obvious that all cultivators cannot turn market gardeners, if only because fresh vegetables deteriorate by being carried long distances. On the other hand, land that is utilised for the defecation of sewage is nearly always close to a large town, where market garden produce is in great demand. In England this question is at present a matter of experiment, while in France, on the sandy plain of Gennevilliers, it has for some few years been demonstrated to be a success by the experience on a considerable scale of many occupiers of barren land which had hitherto been nearly worthless from either a horticultural or an agricultural point of view. It is stated that there were, at Heathcote, near Leamington, 7 a. 3 r. 6 p. of sewage market garden ground in 1872, cropped with Cabbages in 1873. In 1874 there were 10 a. 1 r. 34 p. of Parsnips, Potatoes, and Carrots, followed in 1875 by Rhubarb, Mangold, and Cabbage, and in 1876 by Rhubarb, Grass, &c. At Doncaster rather more had been done, though some little doubt appeared to exist as to the value of the sewage for fruit crops. Besides ordinary garden vegetables there were Strawberries, Gooseberries, and Currants, all of which had been sewaged, and owed their productiveness, in some measure, so it was believed, to the occasional irrigation which they had received. At Bedford more attention is paid to market garden crops, as Rhubarb, Cucumbers, Cauliflowers, Red Cabbage, Asparagus, Vegetable Marrows, &c., are all grown, in addition to large acreages of Potatoes, Onions, and Carrots; and at Wrexham, where Colonel A. Jones makes his sewage ground profitable, the market garden plot is one of the most productive.

**Sewage Gardens at Gennevilliers.**—In contrast to this brief sketch of the slow-growing germ of sewage gardening in England let me trace briefly the rapid extension of this means of utilising sewage which has taken place on the sandy plain of Gennevilliers. Commencing in 1869 with less than 18 acres of land under irrigation, the area devoted to the utilisation of sewage has annually increased, until in 1877 it amounted to between 800 and 900 acres, and in 1878 to nearly 1000 acres, while the rent of the land per acre has been augmented four-fold. This increase of rent is some measure of the value attached to the sewage as a fertiliser, because a mere nominal charge is at present made for it, and each cultivator is allowed to turn on to his land as much or as little as he chooses, and at such times as he considers it desirable that his crop should be irrigated. Land which, before sewage irrigation was possible, let at no more than from 25s. to 35s. per acre, although so near Paris, now easily commands from £5 5s. to £7 7s. The produce of the land has changed from a miserable yield of 12 to 16 bushels of Rye or Oats to such enormous receipts as a gross money return of from £48 to £64 per acre from Cabbages, and of from £80 to as much even as £160 yielded by Cauliflowers. Other vegetables, such as Carrots, Onions, and Artichokes, have yielded nearly as large a return, as also have Peppermint, Absinthe, and other savoury herbs. The sewage is conveyed from the pumping station to the fields in large

closed conduits, and not until it is diverted into the main carriers on the land is it exposed to the open air. In this way the nuisance which is inseparable from sewage is reduced to a minimum. On the land itself there are the usual series of main and secondary open carriers, and the latter are placed at right angles to the ridges. These ridges, on which the crops are grown, are not more than broad enough for two rows of Cabbages. The sewage is turned out of the small carriers or gulleys into the furrows between the ridges, and thus do not come into actual contact with the growing plants, as is the case when they are grown on the flat. Generally, two parallel rows of Cabbages, Cauliflowers, &c., are planted on each ridge, and scarcely a crop is to be seen without another and smaller or later crop coming forward between the plants of what may be termed the main crop. These peculiarities in the methods of cultivation and irrigation, in addition to the porous nature of the soil, have probably much to do with the successful application of sewage to market garden crops at Gennevilliers.

**Results.**—According to a report of a commission appointed by the Prefect of the Seine to inquire into the results of the application of sewage to market garden crops, it appears that general yields were 30 to 50 tons per acre of Cabbages, 48 tons of Beetroots, from 20 to over 50 tons of Carrots, and 6 tons of Haricot Beans. But these figures by no means represent the total produce of the land in the course of the year, for not only is there generally an intercalated crop, but after the Cabbages, &c., are sold off there is generally time to take another crop between the plants of what was the "intercalated crop," but which after the sale of the Cabbages becomes the main crop. Of other and more valuable crops than those already quoted, the following yields are given: Artichokes, 14,000 to 32,000 heads per acre; Cauliflowers, 8000 to 12,000 heads, weighing from fourteen to sixteen tons; Garlic, fifteen tons; Celery, more than forty tons; Onions, twenty-four to thirty-two tons; Leeks, twenty-four tons; Potatoes, twelve to sixteen tons; Pumpkins, forty-eight to fifty-six tons; and Salsify, 4000 to 5000 bundles, weighing as much as ten tons. The reporter of the commission adds, that if these figures are compared with the produce of land not irrigated, the difference will be found in some cases to be even five times in favour of the irrigated land. Not less satisfactory have been the results obtained from the growth of scent-bearing and savoury herbs; for instance, Peppermint has yielded from sixteen to twenty tons per acre in two cuttings, Absinthe from forty-four to forty-eight tons, and Angelica over eleven tons the second year. The quality of the herbs and vegetables has been found excellent from every point of view, and many of the large hotels in Paris regularly obtain their supplies from the sewage gardens of Gennevilliers; but it is found necessary in the case of savoury herbs to avoid irrigation for at least a fortnight before gathering the crop. With regard to fruit trees and nursery plants generally, the commission express themselves in equally favourable terms, while acknowledging the greater difficulty in bringing these products of the soil to so satisfactory a comparative test as can be easily done in the case of vegetables, flowers, and herbs.

The general conclusion arrived at by this commission were formulated as follows: (1) The application of sewage to horticultural products, and particularly to large vegetables, is practical and sanctioned by experience. It presents considerable advantages from three points of view: (a) The abundance and the beauty of the products obtained. (b) Their

quality and their healthiness. (c) The money return from their cultivation. (2) Green vegetables, such as Cabbages, Celery, Spinach, Lettuces, Endive, as well as the edible roots and the savoury herbs, are all specially adapted for sewage irrigation. (3) The quantity of sewage absorbed by one acre cropped with vegetables may at present be 21,000 cubic yards per annum. That quantity will probably be reduced by the effect of improvements in the processes of irrigation. (4) The distribution of sewage by means of irrigating furrows is the method which appears most commendable. (5) The irrigation should be moderate, intermittent, and frequently renewed. (6) The sewage should not be allowed to come into contact with the foliage or stem of the cultivated plants. (7) It is desirable that the position of the furrows should be frequently changed.

It may be asked whether, if so large a measure of success has attended the application of sewage to market gardening at Gennevilliers, the system will not be extended so as to flood the Paris markets. At present this contingency is so remote that it need not be seriously discussed. One circumstance alone renders the extension of the sewage gardens more and more difficult, and that is the cost of labour and the difficulty of procuring it. At present the ordinary pay of a garden labourer ranges from 4s. 6d. to 5s. per diem; but, *en revanche*, the day's work round Paris averages fourteen hours.—*Royal Agricultural Society's Journal*.

## THE KITCHEN GARDEN.

### POTATO PROSPECTS.

ALTHOUGH we have now passed the middle of July and the period when the Potato disease usually manifests itself, yet little has been heard of it, and that little has arisen chiefly from confounding the results of scald on the leaves with the well-known Potato fungus. The heat and drought are doubtless holding the latter in check; it cannot germinate without moisture, and what rains have fallen have been too heavy and rapid to enable the spores to get hold of the foliage. So far, therefore, as regards the Potato plant, the heat and drought have been productive of good. But, on the other hand, the crop is not an early one, and what early kinds have been or are being lifted are small. At planting time the soil was even then fairly dry, and both that and the atmosphere cold. These things did not conduce to an early and even starting, and it was almost universally noticed that in fields the haulm in its early stages was weak and spindly. From out of that condition it has never fully come, and though much of it looks well, it is by no means robust. Much of this comparative lateness and weakness, however, results from the excessive cold of last winter. Vast quantities of tubers that were apparently uninjured by frost were yet so far affected as to have their constituents somewhat changed, and the eye buds so far injured as to necessitate the starting of other and, of course, weaker ones from the base. This led to a certain amount of backwardness, and this, allied to a cold, keen spring, caused the summer early sorts to be much later than usual in maturing. Of course to these causes we must largely attribute the comparative smallness of the tubers now being lifted, but much is also due to the dry state of the ground.

**Garden Potatoes** planted in rich soils, and which have been from time to time deeply trenched, will not materially suffer from drought, and, in fact, may find this hot summer just the conditions needed in rich soils for the production of a good crop. Last year in such gardens the haulm growth was quite abnormal. In some it was enormous, and resulted in much disappointment, as the tuber crop was far from being



commensurate. This year rich deep soils should have the advantage, and good clean crops should be lifted. Even without richness deeply trenched soils show by far the best results, as there is moisture yet within reach of the roots, and, let the season be what it may, the best crops will always be found where the soil has been deeply moved, even though but little manure may have been added. These advantages cannot be given in field culture, except where steam machinery is brought into operation, and that is not always possible; in fact, steam is less employed in connection with the culture of the Potato than perhaps with any other field crop. In ordinary field culture the moving of the soil to a depth of 10 in. with the plough is thought to be a great effort.

#### THE ASPARAGUS PRIZES AND MR. HIBBERD.

SOME time ago I offered annual prizes for the improvement of Asparagus culture, having no motive to serve beyond a wish to see the culture of Asparagus improved in private gardens and our markets supplied by our own growers. Now, thousands of pounds worth of Asparagus come to Covent Garden in one day sometimes, and that long after Asparagus is fit to cut in this country. The first prizes were competed for at Tunbridge Wells, and, notwithstanding the novelty of the competition, and the fact that a block in the railway arrangements caused exhibits not to be delivered, a very fair beginning was made. When I began to observe and write about Asparagus culture the foreign supply of our markets was put down to the superiority of a foreign climate. I knew it did not arise from that, and my object in the competitions is to prove that as fine Asparagus may be grown in England as in any other country. This was proved in the very first competition. Excellent Asparagus came from various parts of the country, and grown on soils not all so fitted for it as those in which the great supply is grown at Argenteuil. Mr. Harwood, of Colchester, showed three bundles, which were probably the finest ever seen at a show in England, and which won a prize of five guineas. From Kent (Barham Court), from Norfolk—in quite a different soil and country—from Sussex (Hailsham), from Sandwich excellent Asparagus, which would be saleable in any market in Europe, was shown. Therefore, the very first year the object of the prizes was attained as far as could be expected.

Good taste would have suggested to most men who felt they could not aid such a competition that at least they would not endeavour to mar its usefulness. But Mr. Hibberd publishes statements concerning it that are untrue. He has on various occasions deliberately made the statement that the prizes were given to encourage "white" Asparagus; whereas the exhibitors were left free to show it as they liked in this respect, and not one word was said in any schedule of the prizes as to the Asparagus being required white, or as to how it should be blanched. The growers were left quite free in this respect.

He next states, and that repeatedly, that the lots at Tunbridge Wells were green, whereas the best prize market lot (Mr. Harwood's) and the best prize private garden lot were blanched to the same degree as Asparagus is in France, or in the market gardens round London, and to a greater extent than the Asparagus that comes from Dijon, Versailles, or Toulouse. White Asparagus is only grown by the Dutch and Belgians. Their ways have not entered into the question, nor has anyone advised that their plan should be followed, though no person who had looked into the matter could say that Asparagus in these countries was either tough or tasteless.

Having shown how he distorts the truth and betrays no care as to facts, such as a conscientious man should while commenting on the doings of others, I now give a few quotations from a rich store in his books which may serve to show what Mr. Hibberd's own ideas are, and how he illustrates them. Nothing is set down in malice, no words are used but his own, and the illustrations are exact reproductions, though diminished in size in two instances.

This gentleman has original ideas of his own, which require for their support all the time he gives to the work of those who do not interfere with him, except when his mis-statements become so gross as to make it desirable to correct them. The following is his suggestion for a means of "averting the Potato disease":—



Mr. Hibberd's proposal for improved Potato culture. (From his "Kitchen Garden," p. 134.)

"In a wet season," the author says, "when disease rages, Potatoes grown on tiles are scarcely touched, and the quality of the tubers is above the average. On the other hand, in a very hot, dry season the tile system does not pay so well, as the plant is apt to be starved through lack of moisture. Our tile Potatoes are always planted in January or February, that the plant may make a good root-hold as soon as the ground is warm enough to be the better enabled to withstand a drought. On light, dry land tiles are not to be thought of; on heavy lands they will make a good return for a reasonable outlay."

Mr. Hibberd also has paid some attention to Melons, and we find the woodcut illustration given below in the same book. It shows a *Melon in the open air!* The old gardeners, who



A Melon in the open air (ibid. p. 139.) (Eleven fruit are shown on one side of the hillock.)

were good Melon growers if nothing else, used to think eight in a large pit-light a good crop; but Mr. Hibberd belongs to another generation, and his drawing shows eleven fruits in a fair

state of progress (pictorial). True, he adds, the "elements have you at their mercy," and "if you do not cut ripe fruit before September is out, you will not cut any at all." But there is hope and more good advice, for he adds "you may cut the nearly ripe fruit with some length of stem attached, and ripen it in a warm greenhouse. The instant that the stalk of a Melon begins to crack away from the fruit, the ripening process is completed, and the Melon should be eaten."

**Mr. Hibberd on Landscape Gardening.**—To his various talents he adds that of landscape gardening.

**The Arch and "Root Ornament."**—"The construction is simple, but produces an agreeable effect by means of a few accessories. The base on each side of the walk is flanked by a rough lattice of selected tree toppings, and the walk leads to a lawn, in the centre of which stands a root ornament, covered with a profusion of trailing plants. This and the shrubberies beyond form a picture to which the arch acts as a



"Arch and Root Ornament."

framework, and the eye is gratified by a judicious disposal of a few very simple elements."—"Rustic Adornments," p. 392.

**The Relief of Avenues.**—"The gloom of green foliage is delightful, but how much is the joy of an avenue enhanced if light is seen at its termination."



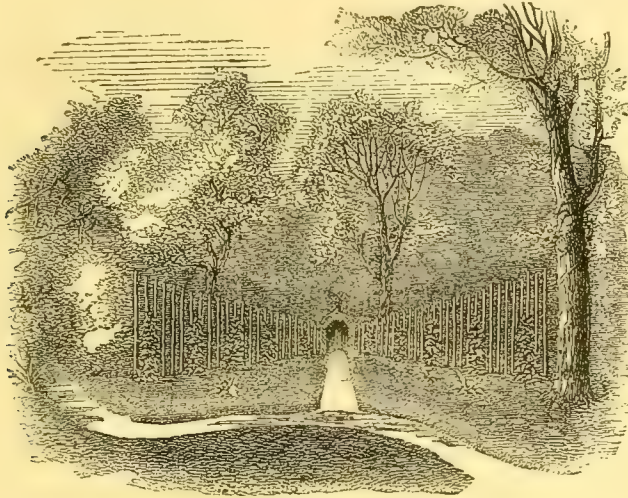
"Rockwork" (Hibberd).

"Now, a border of Ferns, a bosky corner, or walks diverging into other scenes, may form the



vanishing point of your perspective, and the calm shade has no relief therein. Let the gardener get together a barrowful of white stones of any kind, the larger the better, and let these be thrown down 'anyhow' at the end of such a walk, and in an instant the entire aspect of the scene is changed. So far the object is accomplished; a bank of light stones is evidently just the thing to make the avenue charming. It is of course not to remain for ever a mere barrowful 'flung into the void,' but is to be built up neatly and properly planted, and may at last become a cairn after the fashion of the adjoining figure."—*Ibid*, 332.

"As an example of a pardonable trick, here is



An elephant trap (Hibberd).

a figure of a screen which bears the designation 'elephant trap' in a part of a garden which overlooks a road that no one in the house desires to see. The trees in the scene are real, but the contrivance is a delusion—the screen being flat, and the seemingly long winding path being taken up a gentle rise by a curve which lengthens it without seeming to do so. It answers its purpose, and that is one proof of merit."—*Amateurs' Flower Garden*, p. 14.

**Conservatory Building.**—"The conditions imposed upon us by the scientific view of the subject, which is the only one to be taken if

a design for a frontage to a conservatory, showing how a most fantastic façade of the Chinese pattern may be adapted to a ridge and furrow roof (which in effect is a flat roof) concealing the harsh lines of the roof itself without the smallest violation of propriety."—*Ibid*, p. 202.

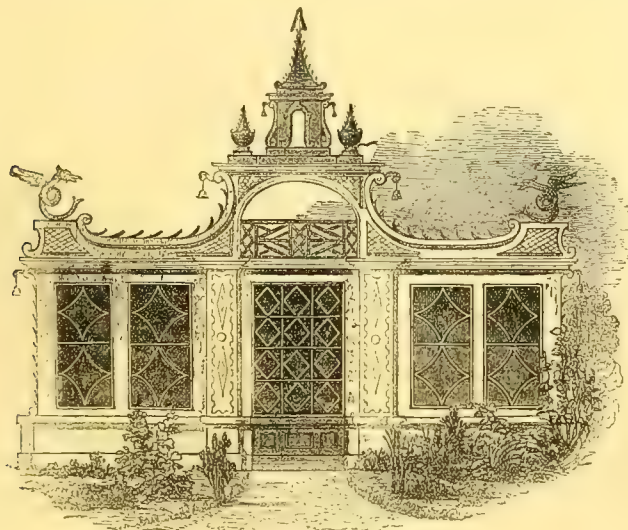
These illustrations are given here in fulfilment of a promise made in *THE GARDEN*, in December last, that if obliged to deal with Mr. Hibberd's uncalled-for attentions again I should do so by the aid of illustrations from his own writings. He no doubt understands his own proposals, and they require able support;

he certainly does not understand mine in the above case, and therefore he may enjoy the reconsideration of more familiar ground.

W. R.

#### SEASONABLE WORK.

**Sowing and Cropping.**—About the last week in the month is a suitable time to get in a good breadth of Lettuce and Endive for use through the autumn. Endive transplants well, but where space is not an object, Lettuce always does best when sown thinly where it can remain on heavily manured ground. Moss-curl Endive is generally grown for early use, as it turns in quickly, and, being more tender than the broad-leaved Batavian, is best adapted for



Façade for a Conservatory (Hibberd).

satisfactory results are desired, are quite compatible with all the requirements of art. Here is

placing under glass before autumn frosts come on. Where Spinach is extensively used, a good batch of the prickly kind sown at once will carry on the supply until Christmas

or even later, by which time the main crop sown in August will have become thoroughly established and the better able to withstand severity. If not already done, a dry, warm border should be well dressed with wood ashes and sown with Early Horn Carrot for use through the winter. Owing to the ravages of the Turnip beetle, early Cauliflower and Broccoli plants are not looking so promising as they might; but the planting out of such kinds as Stadt-holder and Walcheren must be closely followed, as with a fine autumn they will form a good substitute for Eclipse and Autumn Giant where the latter have failed. With convenience for covering with lights in the autumn, another sowing of some quick kind of French Bean, like Osborn's or Sion House, may be made on a warm border open to the south and west. Tall Peas and Scarlet Runners will take copious supplies of water, and where they are not planted in prepared trenches, a mulching of some kind will greatly improve the quality of the crop and increase the quantity. Late Celery for spring use may still be planted, and early crops now growing freely will be in a fit state for flooding with diluted liquid. Herbs of different kinds will now require attention. They should be cut when quite dry and spread out thinly in an open airy shed or room. As a good supply of winter Parsley always redounds to the gardener's credit, sowings along the foot of a west wall or near a hedge should be made forthwith. When the plants are large enough the thinnings may be placed in pits, pots, or boxes for giving a supply in bad weather.

**Cucumbers.**—The end of this month is a good time to sow seeds or propagate cuttings of a strain of Telegraph for taking up the bearing after those now occupying pits and frames are over or their quarters are wanted for other crops. As these plants generally succeed Melons in hot-water pits, the latter should be thoroughly scalded and limewashed to free them from woodlice and red spider. The surface at least, if not the whole of the bed, should also be removed and replaced with fresh fermenting material. Good turfy loam and lime rubble free from manure make an excellent mixture for Cucumbers. The hills should be made small at first, and when the heat in the bed has declined to 90°, there will be no danger of burning the soil or the roots at the outset. Old plants that have been long in bearing will take liberal supplies of tepid liquid. They will also benefit by an occasional top-dressing of light rich turf and rotten manure. When the summer supply is obtained from frames it is a good plan to take a few lights in hand, divest the plants of all fruit, cut out old vines and leaves, top-dress and partly bury the stems that are left in fresh soil, and keep moist with slight shade until new growth is secured.

W. COLEMAN.

Eastnor Castle.

#### NOTES OF THE WEEK.

**Anomatheca cruenta**, from seed saved from last year's flowers, and sown immediately after being gathered, comes from Mr. Edwin Jackson; the plants are about as strong as usual.

**Vanda (Renanthera) Lowi.**—We are informed that this fine Orchid is now in flower in the Victoria and Paradise Nurseries. The plant is 7 ft. high, and is furnished with six spikes about 7 ft. long—in all 194 flowers. This is supposed to be the best specimen of the kind in Europe.

**The Weather.**—Mr. Chas. Turner writes from Slough that the heat of the past week has burnt the blooms of his plants up before they had time to open, adding that he had not seen a good bloom of anything for some days past. Last Friday the temperature in London was 95 deg. in the shade.

**New and Rare Plants.**—Among those in flower in Mr. Bull's nursery, Chelsea, are *Cienkowskia Kirki*, the handsome African Gingerwort lately noticed; *Disa grandiflora Barrelli*, *Anthurium Andreanum*, *Blandfordia flava*, one of the finest of the genus; *Lilium cruentum*, a red-banded kind; *L. auratum*, *Odontoglossum vexillarium Chelsoni*, *Monolophus secundus*, and the double-flowered *Bouvvardia Alfred Neuner*.

**Rhododendron Duchess of Edinburgh.**—This greenhouse *Rhododendron* is one of the finest of the section to which it belongs, as the flowers are large of fine shape and texture, and the colour—a bright orange-red—is a striking contrast to the broad green foliage. The trusses, moreover, are large, and produced numerous on small plants. It originated in the Royal Exotic Nursery, Chelsea, where it is now beautifully in flower with many others, among which is a noteworthy specimen of the pretty rosy-flowered *R. Taylori*, one of the best of its colour.

**Ixora Burbidgei.**—This new Bornean plant promises to be a valuable addition to stove flowering shrubs, and distinct from other kinds. It is



somewhat in the way of *I. salicifolia*, but has broader leaves, and it possesses the desirable character of producing clusters of flowers all along the upper part of the stem. The flowers are very showy, being of bright orange-scarlet, and the long pointed flower-buds and sharply-angled corollas give it a distinctive character. It may now be seen in flower at Messrs. Veitch's nursery at Chelsea.

**Datura sanguinea.**—The huge specimen of this fine Solanaceous plant in the greenhouse (No. 4) at Kew has been wonderfully fine this year, being covered from base to top with its long tubular flowers of an orange red colour. It is planted out in free soil in one of the central beds, which no doubt accounts for its large size. A fair sized plant of *D. suaveolens* in a pot has likewise been very fine, the plant being quite a mass of large white, trumpet-like blossoms. Both are worthy occupants of any greenhouse.

**The Yellow Asphodel.**—Mr. Betteridge, Chipping Norton, sends a spike of *Asphodelus luteus*, about 2 ft. long. He says it has been in flower since early in May, and it has a bold spike not unpleasant in colour. We have so often noticed this plant do little good on clay soils, that one always doubted its merit for general cultivation, distinct and hardy as it is. In all these considerations as to the merits of plants we look at the matter always in view of the immense number of really good plants that do not find a place generally.

**Littonia modesta.**—This is an extremely graceful plant with twining stems and tendrilled leaves similar to those of a *Gloriosa* or *Methonica*, as it is now called. The flowers are bell-shaped and nearly 1 in. across, of a soft, orange colour, and they droop prettily from short hair-like stalks from the axils of the leaves, chiefly from the upper part of the stem. It is a native of the Cape of Good Hope, and thrives admirably in an ordinary greenhouse, growing freely in pots, while the branches ramble freely along the rafters or up a pillar. In flower now in the T range at Kew.

**Beautiful Stove Climber.**—One of the prettiest of stove climbers in the Palm house at Kew is *Solanum venustum*, a South American plant, much in the way of *S. jasminoides*, now fairly well known as a beautiful greenhouse and even hardy climber. It is of rapid growth, and produces slender shoots furnished with narrow leaves and terminated by large loose clusters of mauve-tinted flowers, which droop in graceful profusion. It is a capital plant for a small house, as it may be easily kept within bounds, and, moreover, it furnishes a supply of flowers throughout the summer and autumn and far into winter.

**Rhododendron retusum.**—This is the name given by Mr. Mangles, Valewood, Haslemere, to the pretty small red-flowered shrub received last week from Mr. Luscombe. Mr. Mangles adds a few interesting particulars respecting it. "Mr. Henshall, at one time Messrs. Rollisson's collector, found it in Java. That firm hybridised it with *R. javanicum* and raised *R. Prince of Wales* (see *Floral Magazine*, plate 155). Mr. Davies, of Ormskirk, exhibited this year what seems to be the same cross under the name of *R. Daviesi* (see *GARDEN*, May 7, 1881, p. 464). This species is not very numerous in English gardens."

**The Orchid Album.**—The first part of this new work is before us. It contains four coloured plates (12 in. by 10 in.), accompanied by appropriate letterpress. The subjects chosen are *Oncidium concolor*, *Lælia Schröderi*, *Cattleya Mendelli grandiflora*, and *Epidendrum vitellinum majus*. The letterpress consists of a paragraph embodying a botanical description of the species in English, with authorities, synonyms, and reference to figures, &c., followed by the history of the plant and remarks on its cultural treatment. Notes on Orchids of current interest are, we find, interspersed throughout the work, which will be interesting to Orchid growers. The authorities for some of the names, we observe, are omitted,

and though the artist has failed to reproduce the exact shade of colour in some of the plants, the work will form a useful addition to illustrated books on Orchids. It is published by B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway.

**Batatas paniculata.**—Few stove or warm greenhouse climbers are more showy than this which is now finely in flower in the old Lily house (near the Palm house) at Kew. The blossoms, which are bell-shaped, 2 in. across, and of a rich violet purple inclined to crimson in the throat, are produced in clusters from the axils of the deeply-cut leaves. It is a plant that one should procure who requires a roof of a stove quickly furnished with foliage, as the long slender shoots grow rapidly under ordinary pot culture. The plants should have an abundant supply of water during summer, and should be cut back to the thick root-stock in winter.

**Tropæolum Bedford Rival.**—This is one of the compactum section, and bears most profusely flowers of a bright orange-scarlet tint, well thrown up above the foliage. It is now in bloom in one of the flower beds at Chiswick, where it may be seen and compared with other kinds. The plants there are from cuttings, of which it is possible to obtain an ample stock from old plants in the autumn, but it also comes quite true from seed. These compactum *Tropæolums* do well in such seasons as the present. They do not require much moisture, and the abundant leafage serves to keep the soil about the roots wet. From the first moment of blooming till cut down with frost they are always in flower and always gay.—A. D.

**Mountain Bladderwort** (*Utricularia montana*).—One of the most engaging plants just now in the Orchid houses at Kew, is this extremely beautiful epiphyte in hanging baskets; though not an Orchid, it so much resembles one that the uninitiated would be unable to detect the difference. The flowers, which are about 1½ in. across, are singular in shape, as one petal overlaps the other in a peculiar way. The colour is pure white, with a conspicuous blotch of yellow on the lower lip-like petal. The flower-stems are slender, and bear several blossoms that hang gracefully on all sides of the basket, as well as from the bottom through which they protrude. The bright green foliage and the curious bladder-like tubes also add considerably to the attractiveness of the plant. Of the newer species, *U. Endresi*, we also saw, a short time since, a good specimen in flower at Kew. The colour of the flowers of this is a violet-purple, forming a beautiful contrast with that of its congener. It was the subject of a coloured illustration in *THE GARDEN*, Vol. XVIII., p. 432.

**Carnations at Chelsea.**—It was quite a relief to turn from the Carnation show at South Kensington, where the blooms were all so unnaturally "dressed" and bedecked with the conventional white paper collar, to plants growing free in the open borders in Messrs. Veitch's nursery, where they are and have for some time past been extremely attractive. Here Carnations and Picotees are grown in a natural manner without the disbudding and other little details which the exhibiting cultivator considers indispensable. All are planted out, and in most cases one variety occupies a bed; therefore the masses of colour are well varied and imposing. The healthy vigour of the foliage, and the extreme floriferousness of the plants, combined with the fine quality of the blooms with regard to size and form, point to the fact that neither Carnations nor Picotees require that skilful cultivation which people are apt to imagine they do in order to obtain beautiful flowers. The plants are shaded by a light canvas awning, as the excessive heat in a short time impairs their beauty. The most conspicuous masses are the Clove Carnations, of which there are several sorts. The true Old Crimson, with its deliciously scented blooms, is grown largely, and when seen *en masse* is very fine; Crimson Pet is in some respects an improvement upon this, as

the flowers are brighter and of better quality, but rather deficient in perfume; Ethiopian is also similar to the old crimson, but more floriferous, therefore better adapted for cutting. The best scarlets are Coroner, a finesort, having large flowers of good form; Fire Eater, a rosy-scarlet, also large and fine; Fireman, much in the same way as the preceding; Dan Godfrey, a beautiful flower, remarkably bright in tint; and Magnum Bonum, one of the best; it is in the way of Coroner, but dwarfer, and hence in some instances more desirable. Among the purples the finest are Auctioneer (finely formed and bright), Lord Rosebery (large and full), Purple Prince, Walter Ware (dark plum colour), Prince Arthur, and Elegant. The whites are very beautiful; the best of them are Princess Alice (with delicately fringed petals), The Bride (very pure, with large smooth petals), and Mrs. Matthews (the purest white of all and free). Elysian Beauty is a lovely bright rose coloured kind, and Gertrude Teigner, a delicate pink, both good. Yellows and yellow ground sorts are now, we find, becoming popular. Sulphur King, Chromatella, and King of the Yellows are pre-eminently the best in the Chelsea collection, and very beautiful they are. Lady Armstrong is a lemon ground Picotee, exquisitely edged with crimson, and seems to be a prolific flower. The above selection forms the principal masses in this nursery, but there is an infinite variety of others in flower in borders near them, representing the finest of the older kinds as well as many of the newer, consisting of Carnations, scarlet, crimson, and pink bizarre, and also daked-flowered sorts in all colours, besides red, purple, rose, and scarlet-edged Picotees, the whole making a most attractive display, and scenting the atmosphere by their delicious perfume.

#### NOTES FROM DUBLIN.

Few shrubby *Spireæas* surpass—indeed, but few equal—*S. arizæolia* either when grown as a wall shrub, or as a bush on the Grass or shrubbery border. Its white plumes are now quite lovely waving in the hot July wind. It grows freely, and flowers on the young or current year's growth; hence, like *Hydrangea paniculata* and other plants of that class, it should be cut back pretty freely in early spring just as the buds begin to push. Thus treated, it forms a charming object, even when quite young and in a small state.

A word of praise for *Campanula lactiflora*, which grows 6 ft. high in our borders, each stem being much branched, and bearing just now hundreds of milk-white blossoms. The wand-like stems are stout and elastic, strong enough, in fact, to do without the torture of staking; indeed, much of the grace of this and of other plants is lost when we rob it of its bend-before-the-wind kind of habit. One might as well attempt to stake a Lombardy Poplar.

Of dwarf-growing rock plants there are but few which exceed *Acena Novæ Zealandiæ*, or as it is sometimes called *A. microphylla*, in beauty at this season. The flowers are not at all attractive, being in dense rusty-coloured heads, but as the fruit elongates after flowering and attains a rich glistening ruby red colour, then the plant is seen at its best, and continues in perfection for several weeks. On warm, dry soil it forms dense carpet-like patches a yard or more across, but as a rule it is best grown among the stones of a rockery.

The time of Lilies is one of the most enjoyable of all times in a good garden. The silvery sheen of the white Lily is of all things lovely on warm July evenings, and its fragrance delicious. The golden-rayed Lily of Japan opened its first flowers with us on July 13 in the open air, and will now go on flowering until the frost.

*L. Krameri*, with its soft pink bells, has proved quite hardy, and as I now write I stand before two stems of *L. testaceum*, each over 6 ft. in



height, the one bearing eleven and the other eight flowers. Both stems are the produce of a single bulb nearly 8 in. in diameter. *Lilium Washingtonianum* is a lovely July Lily. We have two forms, one with from fifteen to twenty flowers, borne erect and of a rosy colour, dotted profusely with purple, the other with much larger flowers, and only three or four on a spike, and they are of snowy whiteness, no spotting or suffusion of any kind. In addition to other distinctions, this white variety of *L. Washingtonianum* has a most delicious odour, being even preferable in that way to the old white Lily itself.

*Primula japonica* is in some places plentiful enough to be considered a weed. It comes more or less freely from seed self-sown or sown as soon as it ripens in the pods. If once the seeds are preserved for any length of time so as to become hard and dry, then one may have to wait a year or longer ere the young plants appear above ground. Sow at once is the best motto for all home-ripened seeds of *Primulas* and of many other things.

Among dwarf annuals, *Grammanthes chlorantha* (sometimes called *G. gentianoides*) is neat and effective in the sun. It forms *Sedum*-like cushions of fleshy glaucous stems and leaves, and when its star-like flowers expand the plant is almost hidden by them. The colour varies from pure yellow to vivid orange scarlet. Like *Ionopsisidium acaule* and *Leptosiphon roseum*, this *Grammanthes* is a little gem worth a place even amongst the choicest of perennial rock plants.

A graceful plant is *Phlox glaberrima*—not too well known—just now bearing its trusses of pure rosy lilac flowers on slender stems 15 in. in height. Cuttings struck under a bell or hand-glass in autumn are now blooming freely, and it is well worth growing, for its flowers last well in water when cut for indoor decorative uses. A dwarfier plant which blooms earlier is *P. amena*, which Mr. W. Falconer sent me from the Harvard collection some time ago.

The vivid blue cups and the dusky buds of *Gentiana septemfida* are now very lovely—I mean the dainty turquoise blue kind with a neat bit of fringe inserted between each of the corolla lobes, the sort sometimes grown under the name of *G. gelida*. A clump of it with twenty stems each 1 ft. in height is now very pretty contrasted with the golden chalices of *Papaver nudicaule* and masses of the rose *Silene Schafta*.

The dwarf, crimson, velvet-like Sweet William with double flowers is admired by everyone. Cuttings struck last autumn and planted out in March last are now blooming at 6 in. in height, and remind one of Cockscombs, so solid and rich are the dense trusses of bloom, and then each truss is fringed by a circle of young growths of a fresh green colour which enhances the effect. For masses, clumps, or single specimens, this plant is indeed well worth a place amongst select perennials.

As a pillar plant or roof climber for a greenhouse or conservatory, the old *Fuchsia corymbosa* deserves attention. It is of free growth, good distinct leafage, and its dense clusters of drooping scarlet blossoms are produced for several months in succession during the summer and autumn.

*Jussiaea natans* is a most interesting aquatic plant now blooming freely, its Evening Primrose-like flowers being of the size of a florin and of a vivid yellow colour. A singular trait of this plant is the production of thick pithy adventitious roots or bladders which seem to serve as strainers through which moisture is absorbed, or perhaps also as floats to buoy up the plant to the water line.

It may not be generally known, but it is a fact, that now is a good, if not the best, time in which

to replant bulbous plants of the spring blooming type—I mean *Scillas*, *Snowdrops*, *Narcissus*, *Snowflakes*, *Tulips*, *Hyacinths*, &c., all of which are as near being at rest now as they ever are, and all of which commence to push out their roots about the time when the autumnal rains begin. For trade purposes it seems necessary to dry the bulbs and keep them in places where the moisture of the rains of autumn on the hot ground means nothing to them; but in practice it is best to dry off bulbs as little as possible and to plant them as early as is convenient, and in all cases before the protrusion of the new rootlets takes place. There may be exceptions; for example, *Iris susiana*, some *Anemone* and *Ranunculus* roots, also those of *Narcissus Bulbocodium*, *Ixias*, *Sparaxis*, and Californian bulbs of the *Mariposa* Lily, and the Butterfly Tulip types are benefited by being dried off after blooming, and this is especially necessary on cold, wet, or clay soils. When we come to Lilies, *Narcissi*, and *Squills*, however, the good rule is to replant early, as soon, in fact, as the leaves die off, and they then root freely in autumn and become fairly established before winter.

It is easy to grow *Droseras*, *Pinguiculas*, *Campanula hederacea*, and other delicate little bog plants when you know how to do it. This is the way: Fill the bottom of a deep seed-pan with peat, and then fill the upper half with living *Sphagnum Moss*. Make the Moss into a rounded cone 1 in. or 2 in. above the rim of the pan in the centre, and level with the rim all round the sides. Press the Moss in quite firmly, and surface the top with the fresh green tips of the Moss only. Water thoroughly, and then prick in the *Sundews*, *Butterworts*, *Bog Pimpernel*, *Campanula*, and any other delicate little bog plant, even *Dionaea muscipula*, and *Cephalotus follicularis*, and the lovely little *Cape Sundews*, if you are lucky enough to have them; water again thoroughly, to settle them in their places, and then place the base of the pan in a shallow saucer or plate full of water, and always keep it full. An overhead shower bath twice a week will be sufficient to ensure this, and after keeping the pans thus filled in a cold, closed frame for a day or two until the little plants feel their way, place them on a shelf in a cool house as near to the glass as you can get them, and in the full sunshine, and then they are sure to prosper—better, as I think, thus than in any other way.

F. W. B.

## LATE NOTES AND QUESTIONS.

**Walnut Trees.**—I have two large Walnut Trees in my garden. What will grow under them, and will the dead leaves make good manure or leaf-mould?—MOLESEY.

**Mushrooms.**—My Mushrooms rot off when they are about the size of Peas. Can anyone tell me the reason of this? The bed was well made, and is under an old shed.—MOLESEY.

**Melon Leaves.**—*Sub.*—They swarm with green fly. Fumigate with tobacco repeatedly until it is destroyed.

**Phyllocactus crenatus.**—This is beautifully scented at night, and very powerful when in a closed room. The specimen sent is much smaller than usual on account of its being the last bloom.—H. J. E. [The plant is the excellent one described as flowering so well in Mr. Peacock's collection some weeks ago, and which we hope to illustrate.]

**Best Site for a Garden.**—If a person of moderate means wished to obtain a few acres of land to build a small house upon, and to grow flowers and fruit naturally and under glass partly for profit, where, within about twenty miles of London, could be found the best soil, taking into consideration also the healthiness and prettiness of the neighbourhood, and facilities for obtaining at low rates fuel, manure, and other garden requisites?—ENQUIRER.

**Names of Plants.**—*Mrs. L. B. (Lewes).*—*Lilium testaceum*.—*E. H.*—1, *Cattleya Acklandiae*; 2, *Onocidium curtum*.—*H. J. E.*—1, *Begonia nitida*; flowers of others had dropped.—*W. J. E.*—1, *Epipactis palustris*; 2, *Orchis incarnata*; 3, *Erythraea Centaurium*; 4, *Farnassia palustris*.—*Climber.*—*Lycium barbarum*.—*K. M. B.*—1, *Digitalis leivigata*; 2, *Veronica longifolia* var.; 3, *Mulgedium Plumieri*; 4, *Platycodon grandiflorum*; 5, *Calystegia oculata*; 6, *Astrantia major*; 7, *Aconitum*; *Antirrhinum*; 9, *Phlox Herbacea*; 10, it is our rule to name only our plants at a time.—*Mac.*—1, *Spiraea Ulmaria*; 2, *Sedum reflexum*; 3, *S. spurius*.—*W. R.*—1, *Peruettya mucronata*; 2, *Spiraea cana*; 3, *S. callosa*; 4, *Euonymus radicans variegatus*; 5, *Lithospermum prostratum*.—*T. L. B. (Chepstow).*—Apparently *Trifolium Lupinaster*.

## SOCIETIES.

### NATIONAL CARNATION AND PICOTEE. JULY 19.

ON Tuesday last, the southern section of this society held its annual exhibition in the Royal Horticultural Society garden, at South Kensington. There was a very creditable display of flowers, though not so numerous as on previous occasions; nor was the quality so high, a circumstance doubtless attributable to the unfavourable weather for the Carnation and Picotee. The exhibitors were much the same as in former years and the majority of the exhibits came from the suburbs of London, clearly indicating that the Carnation and Picotee are pre-eminently flowers for town districts. One would imagine that the Carnation and Picotee would scarcely need a society specially devoted to their culture and improvement, but it is a noteworthy fact that even in large private gardens the higher types of varieties are only just beginning to be grown, though they have long been cherished objects of culture with many amateurs. To an ordinary observer there was not much novelty about last Tuesday's show, but the initiated had much to interest them in the way of new seedlings which generally were considered improvements in some form or other on existing sorts. Seedlings were rather numerous on this occasion, and they came principally from the veteran Carnation and Picotee grower, Mr. E. Dodwell, of Clapham.

**New Carnations.**—Seedlings were really good. Mr. Dodwell has worked quite a revolution during the last two or three years in the scarlet bizarre class, raising some flowers to surpass the fine variety *Admiral Curzon*, which has held the highest place amongst Carnations for more than a quarter of a century. There were eight or nine very good varieties exhibited in the scarlet bizarre class. The two best were selected for prizes, the variety named *Harry Turner* (Dodwell) being placed first. It is a seedling from *Jas. Cheetham*, S.F., and has the rich dark scarlet of that variety, with a dark maroon flake, petals large and well rounded, flowers full, the flakes evenly distributed. *James McIntosh* (Dodwell) was placed second in it. This variety is remarkable in its class for the robust habit of the plant; the flowers are very large, well marked with flakes of bright scarlet and maroon; the petals are a little serrated, which is a fault. *Joseph Crossland* (Simonite), exhibited by Mr. Douglas, is a very promising variety in this class. It has broad, well marked petals and good colour, which was rather faded. In crimson bizarres none of the flowers were so rich in colour as a number of those exhibited last year. *Squire Person* (Dodwell) gained the first prize. It is a seedling from *Albion's Pride*, but is superior to it in form of flower and shape of petal. The colour is not so bright, but the pink and maroon markings are very distinct; the white is good. *Harrison Weir* (Dodwell) was placed second; it is a seedling from *Rifleman*, having the paler colour of *Albion's Pride* with the broad petals of *Rifleman*. The flower is full with the white predominant, colour pink and purple maroon in narrow bars and flakes. Mr. Douglas gained a first prize in the class for pink and purple bizarres with *Miss Henderson* (Dodwell), a very distinct variety, with large full flowers of excellent shape; the petals are broadly marked with flakes of purple and clear pink; it is a seedling from *Lord Milton*, one of the brightest coloured crimson bizarres. There were no new flowers in the class for purple flakes, but in that for scarlet flakes, Mr. Dodwell was first with *Harry Matthews*, a seedling from *Admiral Curzon*, S.B.; this variety has very broad, well marked petals, forming well-shaped large flowers of a rich scarlet colour; white good. *Matador* (Turner) was second; this is also a good and distinct variety, petals well formed and round, colour rich bright scarlet, white good. In rose flakes, but one flower was good enough to receive an award—*Mrs. Matthews* (Dodwell); the form of the flower is like *Sybil*; the



flakes, clear bright rose, are evenly distributed on a good white ground. It received first prize in its class.

**New Picotees** were not exhibited in large numbers; the raisers of these do not seem to be so active as they were some years ago. In light red edges Mr. Dodwell gained the first prize with *Elsie Grace*, a seedling from Mary, light purple edge. The petals are not of such good shape as the parent, but the edge is well defined, petals pure white, without a spot of colour. It will be a distinct and good acquisition in its class. Mr. Douglas gained the second prize in this class with Mrs. Gorton (*Simonite*), a fine full flower, with good-shaped petals, fine wire edge, white, free from markings.

The only other new Picotee worthy of notice exhibited was a very fine, light, scarlet-edged variety from Mr. Turner, named *Evelyn*; it received the first prize in the seedling class, and should have been first in the class for single blooms. The only excuse for the judges was that they might have made a blunder in placing Mrs. Alcroft at the wrong end of the row, as it was certainly the worst flower of the five which received prizes. *Evelyn* is the best flower yet seen in this colour; the edge is narrow, but well defined; petals very broad, well shaped, and pure, forming a large fine flower. No first-class certificates were awarded this year, probably not altogether because the varieties shown were not worthy of that distinction, but because they may be exhibited better on another occasion under more favourable circumstances.

The principal classes, such as those for twenty-four and twelve blooms both in the Carnations and Picotees were very well represented with regard to the quality, and the exhibits from such eminent growers as Messrs. Dodwell, Douglas, and Turner were uniformly good, and so closely contested were some of the classes by these exhibitors that the judging was a difficult matter. The principal varieties among Carnations shown were—of scarlet bizzars, *Admiral Curzon*, a fine flower in every respect; *Arthur Medhurst*, *Campanini*, *Rembrandt*, *Mars*, and *True Briton*. Crimson bizzars were represented by fine examples of *Albert Chancellor*, *J. D. Hextall*, *Rifeman*, *Premier*, *John Simonite*, *Gem*, and *Albion's Pride*. Among the pink and purple bizzars were *Sarah Payne*, *Falconbridge*, *Ajax*, *Colonel Wyndham*, *G. F. Wilson*, *Mayor of Nottingham*, *Squire Meynell*, and *True Blue*. Of scarlet flakes, were *Clipper*, *Sportsman*, *John Bayley*, *Illuminator*, *Annihilator*, *James Cheetham*, and *Bandmaster*; and among rose flakes were fine blooms of *Sybil*, *Rose Perfection*, *John Keats*, *James Merryweather*, *Cleopatra*, *Falcon*, and *Rose of Stapleford*. Fancy varieties were not so numerous, but they are very pretty and deserve to be grown as much as the others; the most prominent kinds shown were, *Heather Bell*, *Eccentric Jack*, *Eurydice*, *G. P. Hawtrej*, *Elegant*, *Géant des Batailles*, *Titian*, *Sportsman*, *Adonis*.

Among the Picotees were superb blooms of *Her Majesty*, *Clara Penson*, *Fanny*, *Leah*, *Mrs. A. Chancellor* (very fine), *Alliance*, *Royal Purple*, *Zerlina*, *Jessie*, *Norfolk Beauty*, *Cynthia*, *Coronation*, *Lily of the Valley*, *Edith*, *Minnie*, *Fanny*, all purple-edged varieties; while of red, rose, or scarlet-edged sorts were *Royal Visit*, *Empress Eugénie*, *Rev. J. B. Camm*, *Baroness Burdett Coutts*, *Constance Heron*, *Ann Lord*, *Clara*, *Ethel*, *Mrs. Horner*, *Mrs. Alcroft*, *Mrs. Payne*, *Juliana*, *Lady Beeston*, and *Rev. F. D. Horner*. The sorts named above comprise a representative collection of both Carnations and Picotees, including many of the newest kinds. The following is a list of the prize takers:—

#### AWARDS.

**Carnations.**—Twenty-four blooms, no fewer than twelve varieties: 1, Mr. E. Dodwell, Larkhall Rise, Clapham; 2, Mr. Douglas, Loxford Hall, Iford; 3, Mr. Turner, Royal Nurseries, Slough; 4, Mr. H. Hooper, Vine Nursery, Bath; 5, Mr. J. Hines, Ipswich. Twelve blooms: 1, Mr. Dodwell; 2, Mr. Douglas; 3, Mr. Matthews, Wandsworth Road; 4, Mr. Hines; 5, Mr. T. Buxton, Clapham; 6, Mr. G. Duffield. Six blooms: 1, Mr. A. Medhurst, Clapham; 2, Mr. Healy; 3, Mr. Sharp, Birmingham; 4, Mr. Allen, Putney Hill; 5, Master H. Matthews, Wandsworth Row. Mr. Abercrombie, Cheltenham, showed the other collection.

**Single specimens.**—Scarlet Bizzars: 1, Mr. Turner with George; 2, Mr. Douglas with Robert Lord; 3, Mr. Dodwell with Arthur Medhurst; 4, Mr. Dodwell with George; 5, Mr. Douglas with Dreadnought. Forty-two other blooms were shown. Crimson Bizzars: 1, Mr. Douglas with John Simonite; 2, ditto with Crimmon Banner; 3, ditto with Lord Milton; 4, Mr. Dodwell with Rifeman; 5, Mr. Douglas with Lord Milton. Twelve other blooms were shown. Pink Bizzars: 1, Mr. Douglas, Sarah Payne; 2, Mr. Dodwell with Sarah Payne; 3, ditto with Seedling; 4, Mr. Douglas with Albion's Pride; 5, ditto with same variety. Forty other blooms were shown. Purple Flakes: 1, Mr. Douglas with Florence Nightingale; 2, ditto with the same; 3, Mr. C. Turner with Lady Peel; 4, ditto with Sporting Lass; 5, Mr. Douglas with Florence Nightingale. Six other blooms were shown. Scarlet Flakes: 1, Mr. Turner with Matador; 2, ditto with same variety; 3, Mr. Dodwell with Seedling; 4, Mr. Douglas with Sportsman; 5, Mr. Douglas with John Bayley. Nineteen other blooms were shown. Rose Flakes: 1, Mr. Douglas with Sybil; 2, Mr. Turner with John Keats; 3, Mr. Douglas with same variety; 4, Mr. E. S. Dodwell with James Merryweather; 5, Mr. Turner with Jessica. Sixteen other blooms were shown.

**Picotees.**—Twenty-four blooms, no fewer than twelve varieties: 1, Mr. Douglas; 2, Mr. Turner; 3, Mr. Dodwell; 4, Mr. Hooper. Twelve blooms: 1, Mr. Douglas; 2, Mr. Dodwell; 3, Mr. Matthews; 4, Mr. Hines; 5, Mr. Buxton; 6, Mr. Duffield. One other collection was exhibited. Six blooms: 1, Mr. Medhurst; 2, Mr. Sharp; 3, Mr. Allen; 4, Mr. Healy; 5, Master Matthews. Mr. Abercrombie showed the other collection.

**Single specimens.**—Red heavy-edged: 1, Mr. Brown with Emmeline; 2, Mr. Douglas with J. B. Bryant; 3, Mr. Turner with Picturata; 4, Mr. Hines with Wm. Summers; 5, Mr. Dodwell with Brunette. Twenty-two other blooms were shown. Red light edges: 1, Mr. Douglas with Thomas Williams; 2, 3, and 4, ditto with same sort; 5, Mr. Turner with Rev. F. D. Horner. Ten other blooms were shown. Purple heavy edges: All of the five prizes by Mr. Turner with Mrs. A. Chancellor. Twenty-five other blooms were shown. Purple light-edged: 1, Mr. Douglas with Miss Clara Penson; 2, ditto with Her Majesty; 3, Mr. Dodwell with Ann Lord; 4, ditto with Minnie; 5, Mr. Turner with Baroness Burdett-Coutts. No other blooms were shown in this class. Rose or Scarlet heavy-edged: 1, Mr. Turner with Fanny Helen; 2, ditto with same sort; 3, ditto with Constance Heron; 4, Mr. Hines with Mrs. Alcroft; 5, Mr. Sharp with Seedling. Thirty other blooms were shown. Rose or Scarlet light-edged: 1, Mr. Sharp with Mrs. Alcroft; 2 and 3, Mr. Turner with Evelyn; 4, ditto with Lucy; 5, Mr. Hooper with Beauty of Bath. Eight other blooms were shown. Yellow grounds: 1, Mr. Douglas; 2, ditto; 3, Mr. Hooper; 4, ditto; 5, Mr. Douglas.

**Sels, Fancies, or Yellow Grounds.**—Twenty-four blooms: 1, Mr. Turner; 2, Mr. Douglas; 3, Mr. Matthews; 4, Mr. Hooper. Twelve blooms: 1, Mr. Dodwell; 2, Mr. Medhurst; 3, Mr. Duffield; 4, Mr. Catley; 5, Mr. Abercrombie. Yellow Ground Picotees—Twelve blooms: 1, Mr. Douglas; 2, Mr. Hooper; 3, Mr. Catley.

The premier Carnation selected from the whole exhibition was *Fred*, a crimson bizzare, and the premier Picotee, Mr. Chancellor, heavy purple-edged, both shown by Mr. Douglas.

**Miscellaneous Class.**—A large collection of blooms, numbering some 360 in ten boxes, was exhibited by Messrs. Veitch & Son, Chelsea. It comprised Picotees, light and heavy edged in all the colours, Carnations, flakes and bizzars, but the most beautiful of all were the sels, which were shown in large numbers. The best of these were—*Lothair*, delicate pink; *Fire Eater*, high salmon pink; *Lord Rosebery*, purple-pink; *Auctioneer*, a splendid purple; *Coroner*, orange scarlet, one of the finest. The best yellows were *King of the Yellows*, *Chromatella*, and *Sulphur King*, all very fine sulphur yellows. Of whites are *Hodge's Bride*, *Princess Alice*, beautifully fringed petals; *White Clove*, and *Charmer*, the latter remarkably pure and fine in form. The old *Crimson Clove* was shown finely, and a beautiful display it made, but an improvement on it called *Crimson Pet* is extremely fine, the flowers being of an intensely deep velvety crimson. These blooms were all shown without being dressed, and they attracted as much if not more attention than the manipulated blooms. Messrs. Cannell & Sons, Swanley, also had a collection of cut blooms and a large and excellent collection of *Verbenas* in great variety, and these, with a fine collection of cut *Roses* from Messrs. Cranston, Hereford, added considerably to the attractiveness of the show.

During the afternoon Mr. Shirley Hibberd delivered a lecture on the Carnation and Picotee.

#### THE SHEFFIELD ROSE SHOW.

LAST week, as would be seen, we printed the Rev. Canon Hole's "Thoughts about Roses," uttered in connection with this show, and we herewith give the list of awards. The show was held in the Sheffield Botanic Gardens, the exhibition tent

which was 70 yards in length, being pitched close to the promenade in front of the Conservatory. The *Roses*, as a whole, were excellent, and came, as will be seen, from localities widely apart.

#### AWARDS.

**Seventy-two distinct, single trusses.**—1, silver cup, value £10 10s., given by the Mayor, and £5, Cranston's Nursery and Seed Company, Hereford; 2, £6, Messrs. Keynes and Co., Salisbury; 3, £5, Mr. Benjamin Cant, Colchester; 4, £2, Messrs. Paul and Son, Old Nurseries, Chesham.

**Forty-eight distinct, three trusses of each.**—1, £8, Messrs. Cranston and Co.; 2, £5, Messrs. Keynes and Co.; 3, £5, Messrs. Paul and Son.

**Thirty-six distinct, single trusses.**—1, £6, Mr. Henry Frettingham, Beeston Nurseries, Nottingham; 2, £4, Messrs. Davison and Co., White Cross Nursery, Hereford; 3, £2, Messrs. John Jefferies and Sons, Gloucester; 4, £1, Messrs. Cooling and Son, Bath.

**Eighteen distinct, three trusses of each.**—1, £4, Messrs. George Davison and Co.; 2, £3, Mr. Frettingham; 3, £2, Mr. Charles Turner, Slough.

#### AMATEUR CLASSES.

**Thirty-six distinct, single trusses.**—1, silver cup, value £10 10s., given by the Master Cutler, and £5 Mr. Thomas Jowitt, Old Weir, Hereford; 2, £6, the Rev. Canon Hole, Cauntun Manor, Newark; 3, £3, Mr. T. B. Hall, Rock Ferry, Cheshire.

**Twelve distinct, three trusses of each.**—1, £4, Mr. Thomas Jowitt; 2, £3, Mr. J. Howe, Nottingham.

**Twelve Trusses or Noisettes, distinct, single trusses.**—1, a silver cup, value £5 5s., given by a member of the National Rose Society, Mr. T. B. Hall, Rock Ferry, Cheshire; 2, £1 10s., the Rev. Canon Hole.

**Twenty-four distinct, single trusses.**—1, silver cup, value £5 5s., given by the town of Sheffield, Mr. E. R. Whitwell, Barton Hall, Darlington; 2, £4, Mr. Charles Davies, Grammar School, Aynhoe, Banbury; 3, £3, Rev. E. N. Pochin, Parkby Vicarage, Leicester; 4, £2, Mr. J. A. Williams, Yardley Wood Vicarage, Birmingham.

**Eighteen distinct single trusses.**—1, £4, Mr. Charles Davies, Banbury; 2, £3, Mr. E. R. Whitwell, Darlington; 3, £2, Mr. J. Radford, Nottingham.

**Nine Trusses or Noisettes, distinct, single trusses.**—1, £1 10s., Mr. Charles Davies; 2, £1, Mr. J. A. Williams.

**Twelve distinct, single trusses.**—1, £4, Mr. Edward Loseby, Nottingham; 2, £3, the Rev. J. H. Pemberton, Havering-atte-Bower, Essex; 3, £2, Mr. Julius Sladden, Badsey, Worcester; 4, £1, Mr. W. Walters, Burton-on-Trent.

**Six distinct, single trusses.**—1, £2, Mr. Edward Mawley, Cropton; 2, £1 10s., the Rev. L. N. Cheales, Surrey; 3, £1, Mr. James Brown, Manchester.

**Six Trusses or Noisettes, distinct, single trusses.**—1, £1 10s., the Rev. J. H. Pemberton; 2, £1, Mr. Edward Mawley; 3, 10s., the Rev. A. Cheales, Brookham Vicarage.

**Six new Roses, distinct, single trusses (not in commerce previous to 1878).**—1, £1, Mr. Thomas Jowitt.

#### OPEN CLASSES.

**Twelve new Roses, distinct, single trusses (not in commerce previous to 1878).**—1, £2, Cranston's Nursery Company; 2, £1 10s., Messrs. Paul and Son; 3, £1, Mr. Frettingham.

**Twelve single trusses of any Hybrid Perpetual, dark.**—1, £1, Cranston's Nursery Company; 2, 15s., Mr. Thomas Jowitt; 3, 10s., Mr. George Prince, Market Street, Oxford.

**Twelve single trusses of any Hybrid Perpetual, light.**—1, £1, Cranston's Nursery Company; 2, 15s., Mr. Thomas Jowitt; 3, 10s., Messrs. John Jefferies and Sons.

**Twelve single trusses of Tea or Noisette.**—1, £1, Messrs. Paul and Son; 2, 10s., Mr. E. R. Cant, Colchester.

**Twelve single trusses of any Yellow Rose.**—1, £1, Mr. E. R. Cant, Colchester; 2, 15s., Mr. G. Prince; 3, 10s., Messrs. G. Cooling and Son.

**Three trusses of any new seedling Rose, not yet in commerce or announced;** to be called "The Rose of Sheffield." Prize value of £5, being a set of garden tools, given by W. Marples and Sons. Several Roses were exhibited, but none were considered worthy of this prize, which was therefore withheld.

#### DISTRICT GROWN AND CUT ROSES.

**Thirty-six distinct, single trusses.**—1, a silver cup, value £10 10s., given by the President of the Sheffield Botanical Gardens, the Rev. Canon Hole; 2, £4, Mr. R. W. Proctor, Ashgate Road, Chesterfield.

**Twenty-four distinct, single trusses.**—2, £2, Mr. R. W. Proctor, Chesterfield; 3, £1, Mr. Charles Storey, Huntsman's Row, Attercliffe.

**Twelve distinct, single trusses.**—2, £1 10s., Mr. W. H. Brittain, Storthoaks; 3, £1, Mr. Charles Storey.

#### AMATEURS.

**Twelve distinct, single trusses.**—1, £4, the Rev. Canon Hole; 2, £3, Mr. John Bateman, South Street, Sheffield; 3, £2, Mr. W. G. Jackson, Mansfield.

**Six distinct, single trusses.**—1, £2, Mr. Joseph Mallinder, Hodsock Priory, Workson; 2, £1 10s., Mr. Chas. Storey; 3, £1, Mr. Thos. Kirby, Barnes Hall, near Sheffield.

**Roses in Pots, twelve distinct varieties.**—1, £5, Messrs. Paul and Son, Chesham.

#### BOUQUETS.

**Twelve bouquets of Roses for the hand.**—1, £3 10s., Messrs. Cranston and Co.; 2, £2 10s., Messrs. Paul and Son; 3, £2, Messrs. Cooling and Son.

**Twelve bouquets of distinct grown Roses for the hand.**—1, £3 10s., Mr. Richard W. Proctor, Chesterfield.

**Six bouquets of distinct grown Roses for the hand (amateurs).**—1, £1 10s., Mr. Joseph Mallinder; 2, £1 5s., Mr. Thomas Kirby, Sheffield; 3, £1, Mr. George Miller, Sheffield.

**Extra Prize (specially offered by the Committee of the Botanical Gardens).**—Six distinct single trusses of *Roses* grown within six miles of Sheffield.—1, £5, Mr. Enoch Holland, Sheffield; 2, £3, Mr. Frank Urton, Greenhill; 3, £2, Mr. James Keeling, Sheffield.



No. 506. SATURDAY, JULY 30, 1881. [Vol. XX.]

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—Shakespeare.

## AN ARTIST'S BOUQUET.

I HOPE you will not condemn all artists' bouquets because the description of one lately published does not sound promising. There are some table nosegays now in our sitting room. One, large and tall, all white and green, is made of semi-double white Opium Poppies cut 2 ft. long, spikes of *Bocconia cordata*, white Everlasting Peas, cut long, foliage of *Acanthus* and Alexandrian Laurel (*Ruscus racemosus*). Another tall jar is dressed with Orange Day Lilies, Prairie Sunflower, and *Coreopsis lanceolata*; foliage, side shoots of Indian Corn and large leaves of *Funkia grandiflora*. A small table bouquet has cluster Roses, white tinged with pink, pale salmon and salmon-scarlet French Poppies, pale pink white-throated Pentstemon, and spikes of *Gaura Lindheimeri*; for foliage, some golden green shoots of Chasselas Vine and small fronds of the Dilated Shield Fern, the variety *spinulosum*, also a golden green. A bowl of Tea Roses, shades of pink, yellow, and white, *Souvenir d'un Ami*, Catherine Mermet, Lamarque, and Celine Forestier; the latter is very valuable for its quantity of foliage and red-stained buds. A beaker-shaped glass holds a good handful of Carnations, pink, scarlet, and white. One nosegay, mostly for sweetness, is made of French Honeysuckle, Jessamine, Mignonette, and a few pink Cloves, with foliage of sweet Geranium.

ANOTHER ARTIST.

## NOTES FROM COMELY BANK.

A VISIT to Mr. Fraser's nurseries must be no small pleasure to any one who cares for hardy plants. The collection of hardy Heaths alone is well worth seeing. Their beauty is enhanced by the dwarf way in which they are grown, the plants being deeply layered and earthed up, so that no leafless stems are to be seen; and many of the kinds form dense cushions of green, as do also some of the Ledums, especially *Ledum thymifolium*. Amongst the prettiest of the many Heaths (I think Mr. Fraser said that he has about forty varieties of hardy kinds) are the following: Five varieties of *Erica cinerea*, alba, atro-purpurea, coccinea, rubra (very dwarf), and one grown here as *atro-sanguinea*, a bright red or dark cerise shade; five varieties of *E. vagans*, besides the typical form, alba, alba minor, carnea, pallida, and rubra, *E. tetralix*, Mackayana, pallida, and alba, the latter a lovely Heath. The varieties of *E. vulgaris* are both numerous and beautiful—alba rigida, alba dumosa, decumbens alba, Alporti, argentea variegata, aurea, Hammondi, pygmaea, pumila, Serlei, and rubra, the latter an early and very dwarf Heath. There were also *E. ciliaris*, *E. mediterranea*, *E. Lawsoni*, the white and pink forms of *E. carnea*, and *E. australis*, a taller kind. *E. arborea* is not hardy enough to stand the coldest of the Scotch winters. *Empetrum nigrum*, rubrum, and a third kind are growing here. *E. nigrum*, the Crowberry, is also called the Hillberry in Orkney. It has been found as far north as Cape Sabine, lat. 78° 45'. *E. rubrum* represents this genus in the Southern Hemisphere.

Rhododendrons of many species and varieties are grown by Mr. Fraser, and a border of Hollies shows well the great variety to be found even amongst the green-leaved kinds. The Holly-

like *Desfontainea spinosa* is not hardy here (though it is so in the south of Ireland), but a plant of it is in blossom out-of-doors now, as is also *Mitraria coccinea*, which is not hardy either. The waxy scarlet and yellow flowers of the former, and the equally waxy scarlet Pentstemon-like flowers of the latter, make them well worth growing. *Magnolia conspicua* and *Thompsoni* are quite hardy, and blossom profusely every year. *Abelia floribunda* lived out-of-doors for several years, and was covered with flowers, but it could not withstand the late severe winters. Many beautiful Delphiniums are now in blossom, some of the best being *Mdme. H. Jacotot*, *Belladonna*, *Mdme. Rigot*, *Mdme. Stenger*, Prince of Wales, *Le Mastodonte*, Louis Tiquier, *Magnificum* (the latter now almost out of flower), and three double kinds, *Pompon Brilliant*, *Beatsoni*, and *Barlowi*. *Lilium Browni* is just in blossom, and so is *Crinum capense*, which seems quite hardy here. A large light mauve form of *Iris Xiphion* is strikingly beautiful as seen in a mass, and a bed of *I. cristata* must have been worth seeing when it was in blossom. Much as has been written from time to time in THE GARDEN as to the beauty of Irises, enough can hardly be said till some of the best of them are grown in every garden, large and small. *Actæa rubra* and *alba* are in berry. In growth they somewhat resemble *Dictamnus Fraxinella*, a quantity of red and white kinds of the latter being now in blossom. Mr. Fraser has often seen the experiment of setting the plants on fire successfully tried. *Campanula Medium* and *coronata*, blue and white, are good border plants, especially the white ones. *C. Hendersoni* is a good kind, but one of the prettiest of all *Campanulas* is *C. Waldsteiniana* when grown in perfection, as a plant of it is here, the mass of flowers being nearly 1 ft. across. Many alpine flowers, which when seen at all in cultivation are generally seen as small plants, grow here in masses, which considerably adds to their beauty—for instance, the Mayflower (*Epigæa repens*), the Gold Thread (*Coptis trifoliata*) with its golden roots, *Rubus arcticus*, and *Dalibarda repens*. *Gaultheria procumbens* also seems quite at home, and becomes covered with berries in winter. The very rare white form of *Soldanella minima* is to be found here, and such good alpine as *Potentilla tridentata*, *Thalictrum alpinum*, *Statice minuta*, *Hypericum humifusum*, *Sisyrinchium mucronatum* (like a dwarf *S. anceps*), *Veronica telephifolia*, and the dwarf *Aquilegia pyrenaica*. The double Bird's-foot Trefoil (*Lotus corniculatus fl.-pl.*) and *Teucrium pyrenaicum* are also pretty for rockwork.

Although alpine in small pots remind one of birds in small cages, there is no doubt that some kinds appear to thrive as well in pots as on rockwork where they have soil some feet deep. Perhaps some kinds, such as the smaller Saxifrages and *Sempervivums*, do even better in pots (though plenty of root room on well made rockwork is preferable for alpine plants in general). Tufts of *Silene acaulis* in little pots look as healthy as possible, and so does *Cerastium latifolium*, which appears to be the same as *C. alpinum*, an arctic plant which has been found within 8° of the pole (lat. 82° 50'). This plant does well even in the south of Ireland when planted on well drained ledges of rockwork. Amongst many Saxifrages, *S. aspera*, *cæsia*, *diapsioides*, *Hirculus*, *pyrenaica*, *rubra*; and amongst Sedums, *S. brevifolium*, *lividum*, and the long-named *dasyphyllum glanduliferum* were some of the prettiest. *Anthericum graminifolium* and *A. ramosum* are grown in this collection; also the tall *Linum purpureum*.

C. M. OWEN.

## CLIANTHUS DAMPIERI.

RESPECTING this beautiful Australian plant, the subject of our last plate, Messrs. Carter & Co. write: "The plant had over 100 trusses of flowers at the time the specimen was cut for your drawing. It was planted out in the greenhouse in April, 1880. It thrives best in an admixture of peat and good fibrous turfy loam in about equal parts. The drainage is best when composed of portions of brick and charcoal, broken up into pieces about the size of Walnuts. It requires frequent syringing during the summer months, and little or no water during the winter. The greatest care must be taken when planting out, so as not to injure the tap root. As it has a natural inclination to trail it succeeds best if, when about 2 ft. high, it is trained 18 in. from the glass so as to allow of the flowering spikes going upwards."

— In addition to the methods recommended for growing this beautiful plant, I have been very successful in its culture (especially in pots) by grafting it on the less delicate *Clianthus puniceus*, with which it unites freely. For the stock select a vigorous young plant in which the bark is still fresh, and after keeping it in the propagating house for a few days to inure it to the atmosphere, cut it down to about 3 in., and split it for the introduction of the graft in the ordinary wedge method. For the scion take the top of a young and strong plant, and after having prepared, inserted, and tied it securely, place it in a close case, where a union takes place in a fortnight or three weeks, after which the plants must have air given by degrees. The grafts succeed best without any covering, as the air of the case is sufficiently close, and the stem being so woolly, any such thing as clay or wax is apt to induce decay. When perfectly united they are placed in an ordinary greenhouse, in which they grow freely and may be potted on when necessary, as the roots of *C. puniceus* are not so susceptible of being disturbed as that of its more delicate kinsman. For soil about equal parts of loam and peat, with a liberal mixture of dry cow manure and sand, suits it admirably, and so treated fine flowering specimens may be had in pots.—H. P.

## FROM SCARBOROUGH.

THIS warm summer has stirred up the growth of plants, and in these cool northern regions most delightfully, more especially where a good supply of water is available, and I much wish you could see our various odds and ends just now, though as you do not know how wretched things have looked the last three years, the contrast would not strike you as it does me. I am amused to see you have got a good name for *Funkia*. I would suggest as an addition, *Plantain-leaved Day Lily*, as the plant is akin to *Hemerocallis*. *Somerocwork* combinations delight me just now—a large tuft of *Saxifraga Cotyledon*, overgrown and surrounded by *Acæna microphylla*, already showing its rosy spikelets in contrast to the silvery leaves of the Saxifrage; cushions of blue *Lithospermum fruticosum* and rose *Silene Schafta* side by side; *Milla laxa* flowering profusely amid the green trailers of *Polygonum vacciniifolium*, and also *Muhlenbeckia complexa*, for I carpet the ground everywhere if possible. Mule Pinks *Marie Pare* and *Napoleon III.* make a glorious display still, and tall *Lamarck Enothæras* and testaceous Lilies light up the higher parts. A group of longiflorum Lilies and the old original *Verbena Melindres* is as charming just now as anything can be in a small way. Shrubby Veronicas have recovered the winter and are blooming profusely; so altogether things look very bright, though there is but little, especially rare, to admire.

A proof of the unusually hot weather is that a pot of *Nerine Fothergilli*, and some pots of *Belladonna* Lilies which had flowered last autumn, and made good leaf growth during the winter, having been turned outside to rest, are already to my surprise sending up strong heads of flower. A point of interest, as being new to me, is that the same bulbs that flowered last autumn



are again showing for flower; whereas, as far as my observations went previously, bulbs have flowered only after a year's rest, from so doing, showing that if only they are in sufficiently robust health they will flower every year. *Pancratium caribbeum* is in flower in the stove, but it is inferior in effect to the old *P. fragrans*, as the flowers last so short a time, and come out one by one like the *Hemerocallis*. A new Melon, called *Hero of Lockinge* (I do not know if that is right), is a great success. The flesh is white, more melting and better flavoured than any Melon I ever tasted before, and all our friends like it. I see you have had the Rose-coloured variety of the common Pink sent to you from Devonshire. Mine are nearly over, but must have been brilliant. *Violas* have suffered from drought and heat, but *Duchess of Sutherland*, a delicate French grey, has stood better than any other, and looks well in combination with *Dell's Beet* and the variegated sweet-scented *Geranium*. W.

## THE ROSE GARDEN.

### TYPICAL ROSES.

WE shall have to look after our laurels if we are to lead the van of progress in Rose lore or culture. Only a few weeks ago an American told us in *THE GARDEN* to work out mildew and other evils from our Roses by means of judicious and disease-proof stocks. We had also pointed out to us stocks for all kinds of soils, sites, and culture. Provided a true correlation was preserved between the culture and the stock, Roses could be made to thrive almost anywhere. And now we have H. B. Ellwanger's paper on typical Roses, as read before the Western New York Horticultural Society. The latter is a most solid and useful addition to our knowledge about Roses. As it is more easy to understand a unit than a hundred, it follows that if most of our Roses can be affiliated or arrayed around, say a dozen or even a score of well-known, distinct, and popular Roses, we should be able to understand their character and treatment far better. No one can find fault with Mr. Ellwanger's heads of families. They are not only sufficiently distinct, but prominent enough to merit that distinction. *La Reine* is somewhat out of date, though a very distinct and still a good Rose; it is also somewhat difficult to trace much connection between it and such Roses as *Louise Peyronny*, *François Michelon*, and *Auguste Mie*. It may also strike some as singular that such a Rose as *Monsieur Boncenne* should stand as a type, while *Charles Lefebvre*, *Marie Baumann*, and other magnificent Roses are marshalled in the family of General Jacqueminot. But apart from these two, the other types seem strong and distinct enough to stand alone. These are *Baronne Prevost*, *Géant des Batailles*, *Jules Margottin*, *Victor Verdier*, and General Jacqueminot. In regard to the first, it seems surprising that such a vigorous free Rose has yielded so few varieties. In Mr. Ellwanger's paper it stands at the head of a family of four. This gentleman is just right in saying that it is about the hardiest type they have.

It is far otherwise with the next type, *Géant des Batailles*. This variety may be said to have mildewed itself out of the garden. It is also tender, difficult to propagate by cuttings, and easily injured by spring frosts. Lord Raglan, Emperor of Maroc, and Eugène Appert are the most prominent representatives of this type. It would be but little loss to our Rose gardens were type and family to disappear. The worst features of the next type, *Jules Margottin*, is that it is almost without perfume. This is well nigh inexcusable in a Rose, and scentless types ought not to be encouraged. However, as Mr. Ellwanger points out, such fine members of this family as *Bessie Johnson*, *Miss Hassard*, and the *Rev. J. B. Camm* are very sweet. Such Roses as *Edouard Morren*, *Comtesse de Serenye*, *John Hopper*—by the way, this Rose has been poor

this season—and *Monsieur Noman* can hardly be beaten for size, form, or beauty. The *Victor Verdier* type is almost as scant of fragrance as the *Jules Margottin*. It is also a somewhat tender type, but the family contains some magnificent varieties, such as *Eugène Verdier*, *Marie Finger*, *Mrs. Baker*, *Etienne Levet*, &c.

But, as might be expected, the largest and finest family is found under the General Jacqueminot type. This type Mr. Ellwanger thinks probably originated from the old hybrid *China Gloire des Rosomanes*; more brilliant, if possible, than the type, though its flowers were only semi-double. Hedges of this glory of the Roses, as I have seen it years since, would still, notwithstanding all our boasted progress, prove the brightest thing in Roses we possess. *Charles Lefebvre* is erected into a sub-type of this glorious family, though we fear, as yet, worthy to rank with it. The Duke of Edinburgh is another sub-type, bearing such Roses as the *Sultan of Zanzibar*, *Reynolds Hole*, *The Shah*, &c.. *Alfred Colomb* is a third sub-type, with *A. K. Williams*, *Fisher Holmes*, &c.; the *Senateur Vaisse* family being a fourth sub-type, with *Madame Victor Verdier*, *Mons. E. Y. Teas*. The General Jacqueminot has also a large family gathered around it as well as the four sub-types. Among these we find such perfect Roses as *Marie Baumann*, *Marie Rady*, *Senateur Vaisse*, *Beauty of Waltham*, *Xavier Olibo*, &c.

It is just delightful to see this magnificent Rose thus duly and highly honoured. General Jacqueminot is never likely to go out of date or fashion. Though almost thirty years old, it appeared on many of the winning stands this year; and I am grateful to Mr. Ellwanger for presenting its claims in such a telling way as the type of other types, as well as the parent of such a grand family. Whether we accept of all this gentleman's arrangements or not, all must admit that this arrangement of Roses in types will not only give us a clearer, fuller knowledge of their character and constitution, but will also enable us to grow them with more ease and to greater perfection. I therefore heartily thank Mr. Ellwanger for his paper on typical Roses, and trust he may be induced to carry the matter further. Should not *La Reine*, for example, form a new type? and how comes it with its Tea blood among the Perpetuals? Again, by whose authority and on what principle was *Maréchal Niel* placed among *Noisettes*, and not among *Teas*? Again, what type shall *Boule de Neige* be placed under? D. T. FISH.

### ROSES OF THE SEASON.

IT strikes me that it might be useful were a few of the many rosarians who read *THE GARDEN* to give their experience of a few of the best Roses that they have either grown or seen this season. No doubt locality has a good deal to do with such matters. But the weather is also a powerful factor in the making or marring of Rose blooms. But Roses also have their seasons, determined often by influences so slight as to defy detection. For example, how shall we account for the defection of three such fine Roses as *John Hopper*, *Baroness Rothschild*, and the *Sultan of Zanzibar*? Again, was the deterioration of such Roses general or local? the *Baroness* was thinner, the *Sultan* smaller than usual with us; while as for *John Hopper*, it was nowhere here this season, though generally remarkably good. The Duke of Edinburgh even was not quite up to his high excellent mark this year; while *Alfred Colomb*, *Marie Baumann*, *Comtesse de Serenye*, *Xavier Olibo* were almost better than ever. Among other well-nigh perfect Roses grown or seen were *Alfred K. Williams*, wonderfully fine; *Niphetos*, *Marquise de Castellane*, *Beauty of Waltham*, *Star of Waltham*, brighter than ever; *Senateur Vaisse*, *Fisher Holmes*, *François Michelon*, *Exposition de Brie*, *La Duchesse de Morny*, *Etienne Levet*, *Marie Rady*, *General Jacqueminot*, *Elie Morel*, *Marie Finger*, *Duchesse de Vallombrosa*, *Penelope Mayo*, *Victor*

*Verdier*, *Madame Eugène Verdier*, *Duke of Teck*, *Edouard Morren*, *Harrison Weir*, *Souvenir de Victor Verdier*, *Abel Grand*, *Madame Gabriel Luizet*, *Camille Bernardin*, *Fisher Holmes*, *La Boule d'Or*, *Mons. E. Y. Teas*, *La France*, *Horace Vernet*, *Louis Van Houtte*, *Belle Lyonnaise*, *Captain Christy*, &c. Of course there were not a few other fine Roses seen, but these may be said to be the cream of them. Among *Teas* and *Noisettes* the *Maréchal Niel* has been sadly missed. Not only was it often absent, but where seen, except in a few cases, it was far under average quality. Among the others seen in first-rate condition were *Niphetos*, *Souvenir d'Elise*, *Souvenir d'un Ami*, *Comtesse de Nadailac*, *Madame Kuster*, *Marie Van Houtte*, *Belle Lyonnaise*, *Homer* (fine all the season), *Souvenir de Paul Néron*, *Madame Willermoz*, *Alba rosea*, *Comtesse Riza du Parc*, *Innocenti Pirola*, &c. In fact, *Tea* and some other tender Roses seem rather to have enjoyed the heat after emerging from their frost-bound quarters—those that did emerge, be it remembered—and have bloomed with a freshness, fullness, and beauty exceeding that of most seasons. The old *Gloire de Dijon* and the uncertain *Souvenir de la Malmaison* have seldom bloomed more freely or in better form than this year. D. T. F.

**York and Lancaster Rose.**—In the Oxford Botanic Garden I was very much surprised to find that the Rose which we have always been in the habit of calling by this name is not it. In looking over a bed of typical Roses (a bed which, though interesting, was quite enough to cure any one of the mania for substituting the old Roses for the new) I said, pointing to a bud of this old favourite, I see you have *York and Lancaster* here. No, was Mr. Baxter's reply; that is not it. I was taken aback, as you may suppose. That, he said, is a French *gallica* Rose, called *Rosa Mundi*. I will show you the true *York and Lancaster*. This has a different character—sometimes one half of the flowers come pink, and the other white, and I am bound to say is not so pretty as the old favourite, which, I suppose, to the end of time will retain its old name.—DELTA.

**The Japanese Rose.**—We have had the following interesting note from Mr. John Thorpe, Queens, New York, concerning this Rose, which many suppose to be of recent introduction: How long has *Rosa rugosa* been known to cultivation? This distinct and characteristic species has been growing on Long Island, N.Y., for more than fifty years. This may seem incredulous, but there is not the slightest chance of any doubts. At the Queens Co. Exhibition in June last we exhibited a collection of cut flowers, amongst which were *Rosa rugosa*. An enthusiastic rosarian and lover of flowers, Mr. W. A. Harris, told me he knew where the *Rosa rugosa* had been growing for many years, and he would bring flowers and wood the next day for identification, which he did, and they are undoubtedly the same. Since then Mr. Harris has kindly given me the history of this Rose. It was known more than fifty years ago to be growing on the same place as it is growing to-day, and was called a Scotch Rose, and known as *Malcolm*; and in all probability it was brought from Britain. If any correspondents of *THE GARDEN* will try and trace up *Rosa rugosa* on your side of the ocean, I hope we can settle how new or how old it is.

**What are "Extraordinary Tithes?"**—Mr. Bryant, of Westerham, said there was a charge of 14s. per acre on all the land he held in the parish of Brasted which was devoted to Hops and fruit growing. He attributed the necessity we had been under of late years to import large quantities of Hops, Onions, Potatoes, and such fruit as could be grown in this country to the undue weight of the tithes deterring agriculturists from developing the cultivation at home. He thought they should be abolished. Mr. Sankey, of Margate, said there were no "Extraordinary Tithes" upon his farm when he took a twenty-one years' lease of it; but as soon as he planted Hops application was made to the Tithe Commissioners, and the "Extraordinary Tithe" was imposed.



## EDITOR'S TABLE.

**BALSAMITA GRANDIFLORA.**—This is a very curious looking composite, with a close head of yellow flowers, set thick so as to look like a drum-stick. A bold and distinct hardy plant from the College Gardens at Dublin, which lovers of plants are glad to see so full of interesting plants. *Telekia cordifolia* from the same garden has also huge "Daisy" flowers with very slender "rays." It is a big, bold plant for the picturesque garden.

**THE "SCARLET LARKSPUR"** (*Delphinium cardinale*) comes from Grasmere, from plants between 4 ft. and 5 ft. high. It is proving a more vigorous plant than was expected, but there is a confusion in the form of the flower which seems to us a drawback. There is pure and fine form as well as unequalled colour in the blue and purple kinds.

**EUONYMUS ANGUSTIFOLIUS**, a distinct and graceful evergreen species mentioned before when crowded with its chocolate-coloured flowers, comes to us in fruit from Grasmere. If the fruit should "open" by-and-by and prove showy like that of our native kind, it will prove an attractive dwarf shrub.

**POMPON BRILLIANT.**—Among a lovely series of *Delphiniums* which Miss Owen sends us from the Comely Bank Nurseries, at Edinburgh, which she has lately visited, is a very neat, close, double kind, rich purple, quite solid and compact in the spike, and bearing the above name. Even in presence of the wonderful range of colour and form, too, in these queens among purple flowers, this seems distinct and beautiful. If easily grown it must be a valuable plant.

**A JAPANESE IRIS** of the richest purple with broad golden rays in the centre, the flowers over 6 in. across. These Japanese Irises are indeed wonders as regard colour and size. As to grace, the most lovely of the race we have seen is one that grows in a long border at Kew—purple and gold—but not in shape like the popular kinds, the colour rich purple with a golden spot in each division. It is called *I. lævigata*, and is synonymous with that called *I. Kämpferi*. From Mr. Kingsmill.

**A HYBRID LILY.**—A remarkable Lily from the Rev. H. Harpur Crewe, whose garden one would like to see periodically. He says, "It is now the chief ornament of my garden. It is a hybrid between *L. tigrinum* and the old orange Lily (*L. croceum*). It was raised and given to me three years ago by Mr. J. D. Mangles, of Valewood, Haslemere. The stem is upwards of 5 ft. high, and is crowned by some forty flowers similar to the one I send you. It is growing in a mixture of silt, loam, and leaf-mould in a partially shaded position."

**CHRYSANthemUMS** in flower in July come to us from Mr. Burbidge also, and welcome they are, though they seem to come too soon. Still, we are yet a whole season away from *Chrysanthemum-tide*—we mean their old tide; for if these summer varieties should ever be improved into bold and showy kinds like the late ones, we may have gay gardens of these flowers in spite of frost and rain. If we could even advance the grand autumnal kinds three weeks on their usual term, it might enable them to weather the autumn better than they do, even in our warm counties.

**ACANTHUS IN FLOWER.**—One generally sees the *Acanthus* flowering more freely about some Italian houses, where they care for gardens, or on warm soil in the south of England, and we had some doubt if it did so well in the west country or in Ireland; but handsome spikes from Mr. Burbidge, at Dublin, suggest that the fact that the plant is not much grown is the true reason why its fine and singular bloom is not often seen.

There are few plants more imposing than a well-grown *Acanthus* in flower 6 ft. high or more—the tall flowering shoots, straight as needles, and every line of the plant—foliage, stem, flower, or bracts—fine in form. The common *A. mollis*, well grown on a warm, deep loam, attains a height of over 5 ft. in flower, at least in the southern counties.

**PANSIES.**—Mr. A. Clapham, who has raised so many *Pansies*, *Mimulus*, and other flowers from seed, sends us many hybrid *Pansies*, that is to say, raised between the *Pansies* and some of the larger *Violets*, sends us a varied collection raised in West London, where he now lives, so that the table is as rich with *Pansies* as in April. Miss Jekyll writes (July 25): "Pansies have been in flower since March, and are still a mass of bloom, but going off in size and colour. I am cutting them all over to get a second bloom later."

**BUSH SPIRÆAS.**—After, as before the great heats of July, these graceful bushes are rich in bloom. Few things we have seen during the year are more beautiful than a series from Mr. Stevens on July 25. Among the most noticeable are *S. pachystachys*, *Nobleana*, *Douglasi*, *sorbiifolia*, *syringæfolia*, *Hookeri*, *eximia* (distinct and showy), *callosa alba*, *Blumeri*, *tomentosa*, and *californica*. Some of these would prove valuable if well grown, and such pruning given as would encourage them to yield a good bloom yearly.

**HOLLYHOCKS**, very fine and full, come from Messrs. Sutton, from plants raised from seed last year in January. It is interesting to know that the varieties come true from seed, and those sent are really good ones. So it is clear from this and other instances that much more may be done with many plants from seed than has been the rule. If the fact that so much may be done were recognised, it would, no doubt, lead to improved methods of raising and growing in their earlier stages the numerous things that may be so grown.

**ZINNIAS.**—These, under good culture, are handsome plants; the flowers 3 in. across, the colours good and varied. It was the head gardener at Meudon, near Paris, who before the war first paid special attention to *Zinnias*, and, getting them as large as *Dahlias*, got also a fine variety of colour. To secure such fine flowers, each plant must be treated more like a *Dahlia* than what we see as usually the fate of annuals. What can we expect from most of our annuals crowded together like "Mustard and Cress?" Large and well-coloured examples come from Messrs. Sutton, of Reading.

**GLOXINIAS FROM SEED.**—A superb dish of these, using the word with due temperance and not in the loose way epithets are applied in catalogues and descriptions of flowers, Messrs. Sutton, who send them, say: "We always treat the *Gloxinias* as annuals—that is to say, we sow the seed in January, and towards the middle and end of June we have well-established plants with several flowers on each such as those sent you. These plants seed and form good sound bulbs the same season. We thus produce seed and bulbs in one year instead of sowing one summer for flowering the following summer, and we save, of course, the trouble of one winter's storing."

**THE CRIMSON INDIAN PINK.**—Among the really handsome flowers, not of those that appeal to one "set" only, but to all, no "smooth margin" to petals but boldly fringed, yet not so deeply as to cut up the flower; colour, too splendid for accurate description—a rich dark velvety-crimson with a black circle round centre. Some such form was christened *Crimson King* by Messrs. Carter a few years ago. Mr. Kingsmill says this is from an old plant, which reminds us that the plants must be every year or two raised from seed. It is not on the whole a drawback, because the fresh soil and the seedling plant always give

vigour. These Indian *Pinks* are capable of noble use, either for their own sakes or as "ground plants," with here and there rising from them slender white *Lilies*, *Gladioli*, or other plants which, while beautiful in themselves, would allow of a perfect bloom of the *Pinks*.

**OAKS WITH FINE FOLIAGE.**—A series of Oaks having marks of fine foliage comes to us from the Lawson Company's nurseries at Edinburgh. Some of these are what is called depauperated or contorted forms, but some are extremely valuable. The following are the most valuable kinds as regards fine foliage or colour: *Quercus pannonica*, *Q. Ilex laurifolia*, *Q. ferruginea*, *Q. nobilis*, *Q. bal-lota*, *Q. concordia*, *Q. Bruttia*, *Q. sericea*, *Q. americana aurea*, *Q. sessiliflora rubicunda*, *Q. americana macrophylla Albertsi*. Mr. Syme has good reason to speak of these as effective trees in ornamental planting.

AMONG many flowers from the College Gardens at Dublin we have the double and striped common *Marigolds*; flowers of the *Plantain Lilies* (*Funkia*, given in Latin in deference to our good friend Jean Sisley, of Lyons); the old *Catananche cœrulea*, which never quite makes itself a place; the autumn-flowered *Gentians*; blue-rayed *Stenactis*; our native yellow *Corn Cockle*, which is allowed to be as good as the yellow *Marguerites*; double *Pyrethrums*; the old border *Fly-trap* (*Apocynum*); and *Silene Armeria*, which has lately come to us frequently, and is a good free-flowering annual. Well grown, it would form a handsome plant.

**SNAPDRAGONS**, very dwarf, also come from Messrs. Sutton. At a few inches high they look like rock plants; good colours and distinct, this size would be desirable, though dwarfs will never equal the bold and free old kinds. *Lobelias*, too, some very dwarf and some tall, come from the same house raised from seed like the *Verbenas*; however, they are more commonly treated so. Lastly, the old shaggy favourite, *Salvia argentea*, a great Sage, with huge silvery leaves, comes raised from seed annually and very fine. How to get the fullest strength into an annual is a thing not always considered. To sow early, if one does not sow in autumn, to let the plant have plenty of room, and assume a stocky growth before it shoots up to flower, would seem to be among the essential points for success with annuals.

**CLARISSA** is the name of a large and very pretty *Carnation* raised at Messrs. Carter & Co.'s nursery. They are full white flowers, striped finely with bright rose colour, and have a good scent. How much more beautiful a *Carnation* well grown is if not flattened out in the way usual at shows! The form is so much better. Every grower should seek kinds that are hardy and vigorous, and that all may grow as border flowers. Certainly we should not like to see the race of florists who love these flowers and "put them up," as we see them now, diminished by one; indeed, they are so few that one would like to see them increase, but we have reason to believe that if the varieties we speak of above were easily obtainable as strong plants their culture would become as extended as it deserves to be.

**THE CARNATION** deserves more place than it has ever yet had for another reason than its intrinsic beauty and fragrance. It comes just when the great hosts of the early summer flowers have passed out of their vigour of blossom. Sometimes the heat of a warm July will drive them away the sooner, and then plenty of *Cloves* and *Carnations* are welcome. A lecturer has been saying that some people wanted to do away with double *Carnations*, but no one ever uttered such an absurd thought, nor could he quote a line to that effect. Mr. Stevens sends us about 110 kinds of *Carnations* from his garden at Grasmere. These indispensable flowers are rich enough in form, but many are not necessary, and many a cottage garden is beautiful from the presence of two sorts. A good border yellow



is desirable. Whether the one grown in beds at Penshurst is the best, time will decide. Its pure canary-yellow is very pleasing.

MR. WILLIAM ELLIOTT sends us what he calls "the smallest double flower ever known," but really it is so very small and poor, that we had better say no more about it.

ANNUALS. A bright and instructive series of annuals from Messrs. Sutton, of Reading, who remark, "All were produced from seed sown this year, and in the case of Petunias, Verbenas, and Lobelias they are confident that it is impossible to get from last year's cuttings anything at all equal to these seedlings for effectiveness and profusion of flowers." It would be well if gardeners could be taught to realise this fact more than they do at present—so many of them still propagating everything they can by means of cuttings which have to be kept through the winter.

FOXGLOVES.—A boldly marked series from Mr. W. Elliott, who says, "The enclosed Foxgloves are all from one pod of seed, and I would recommend growers of this fine plant to save seeds only from the varieties with large blotches of colour on a white ground; all the other varieties are sure to come amongst the seedlings. The seeds saved from pink or purple ground flowers have a tendency to revert to the original type. I am getting the blotches on the outside of my Foxglove bells, and I hope in a season or two to have some as beautifully blotched as is the herbaceous *Calceolaria*. A wild one I saw the other day had perfect 'bell' flowers. I am endeavouring to save the seeds."

THE CORNFLOWER shows as well as any plant how much beauty even a thing so little thought of as an annual can give to gardens and rooms. We have just received a fine bunch of it from the College Gardens at Dublin, and for months past it has been one of the brightest and best flowers in Covent Garden. We have not noticed it for a short time past, and supposed its season was over, when the fine bunch came from Dublin. Like Sweet Peas, where they live over the winter, the finest result is got with the Cornflower from autumn-sown plants, which are quite hardy, and come through the winter excellently on most soils. If allowed room enough during the winter these make strong early plants in spring, twice as strong as the spring-sown ones we usually see, which are crowded and rather late. But an early and careful sowing in spring will give us good results, especially if the plants are not too crowded and the soil moist and deep. The flower is almost as good in its way for cutting as the Moss Rose or the Violet, while in the flower garden it is a handsome plant, and its season is a long one.

VERBENAS.—Among the plants which interest us most of those sent by Messrs. Sutton are Verbenas, raised as annuals, and not distinguishable from well-grown cutting plants. One often asks why the Verbena has disappeared from our flower gardens. The tendency seems to be to take to things that give no trouble. One of the very best features of the flower garden of the past were beds of Verbenas. We believe they disappeared owing to disease in many cases, but they were plants that very easily got dirty, and insect life would be more readily kept in force by the cutting plan. But, as clearly shown, Verbenas may be raised from seed easily, and this way may offer a cleaner and a simpler way of growing these pretty plants well. Messrs. Sutton would confer a benefit on many by separating and fixing for us distinct races of Verbenas—a good white, a good purple, as good a blue as could be obtained, a good scarlet, as well as mixed kinds. They send us a great variety of kinds—one very elegantly striped, a rich purple with half the flower purple and half white, one flaked and spotted like a Carnation, one good lilac, a large bunch of a good white, and a large bunch of a good scarlet. We have not seen any-

thing for a long time that pleased us more. We shall be glad to hear of Messrs. Sutton making a speciality of these, for there are no prettier plants. Their successful growth is remarkable in so hot a summer.

CARNATIONS. — From Miss Jekyll two bunches of Carnations, one white, the other a deep salmon pink, evidently only what might be called border kinds, thrown into a jar together. They, undressed, with green and half-open buds and leaves, make a little picture, and set one thinking how much better it would be if the societies which exist for the purpose of promoting the love of these flowers would extend their schedule a little, and, without limiting the classes they now get together, would give prizes for various kinds, cut as they grow, and simply and easily arranged in vases as they would be if cut for a room. Cloves and the various self colours would tell well in this way, as would mixtures. In any case this jar of two Carnations, consisting of about half-a-hundred flowers with their buds, is a handsomer thing than anything seen at the Carnation show, and this is not really a "matter of taste." Sufficient reasons could be given why such a composition delights and why it would make a "picture" not unworthy of a true artist. But if the dressed flowers were exhibited as well as such as we speak of, then the matter could be fairly judged. Different tastes would be satisfied and the interest of the show extended.

## ORCHIDS.

*Bollea cœlestis*.—From the York Nursery, Messrs. Backhouse send us some charming varieties of this fine Orchid, which are by far the handsomest we have hitherto seen. They are—atro-rubens, of an intensely deep plum colour, especially the lower half of the sepals; the lip is extremely dark, and the crest a light chocolate. *Amabilis* is a large and fine flower, with the sepals of a rich purple, tipped with pale yellow, while the furrows on them are a bright yellow. The flowers measure just 4 in. across. Another, named *magnifica*, is remarkable for the large size of the bloom and the rich deep colour, almost as deep as *atro-rubens*, but the crest of the lip a bright yellow. All three are very fine, and among the most attractive Orchids in season.

"Made up" Specimen Plants.—I was pleased with Mr. Douglas' remarks in reference to the making up of Orchid plants for exhibition so as to pass for single specimens. I have often noticed this and considered it wrong, not only as regards Orchids, but in common things such as Lily of the Valley, Tulips, and Crocuses; nor do I think right to allow two plants of the same kind in a class of six plants when there are scores of others dissimilar that would be admissible. Another thing I think ought to be discouraged is that of exhibitors near the show ground staging their exhibits the day before, selecting the best positions. This is scarcely fair towards those who have to bring their exhibits from a distance, especially during a cold night or morning, which often spoils them considerably, and consequently are often beaten by inferior subjects. Thirty years ago such abuses as these would have disqualified the exhibitor, and they will have to be discountenanced if our exhibitions are to continue to be beneficial to horticulture.—RICHARD BUTLER, *St. Dunstan's, Regent's Park, London.*

Orchids at Bridge of Allan.—I visited Dr. Paterson's garden at the Bridge of Allan early in July, and made a few notes of what I saw in flower. For the size of the collection, I never saw so much bloom in an Orchid house as there. There were some sixty kinds in flower, among which the following were the most noteworthy: *Anguloa Clowesi*, *Brassia verrucosa major*, *Bletia Sherrattiana*, various *Cattleyas*, *Cypripedium Dominicanum*, *C. Veitchii*, *C. niveum*, *C. Argus*, *Cœlogyne fuscata*, *Epidendrum evectum*, *E. prismatocarpum*, *E. rhizophorum*, *E. cinnabari-*

*num*, *Gongora atropurpurea*, *Masdevallia Davisii*, *M. Harryana*, *M. H. cœrulescens*, *M. H. superba*, *M. ignea*, *M. amabilis*, *M. triangularis*, *Mormodes luxatum*, *M. luxatum eburneum*, *Odontoglossum Schlieperianum*, and other common kinds, *Oncidium linguiforme*, *O. cornigerum*, *O. Schlindi*, *O. Kramerii*, and others, *Phalaenopsis* of kinds, and *Trichopilia tortilis*.—WM. THOMSON, JUN., *Clonelfords, Galashiels.*

## NOTES ON ORCHIDS IN FLOWER.

*Zygopetalum Sedeni*.—This fine hybrid variety may be ranked among the useful class of Orchids, as it flowers plentifully at a time when the majority of other Orchids are on the wane. It is a handsome-flowered plant, the result of crossing the well-known *Z. Mackayi* with *Z. maxillare*, and whilst it possesses the free-flowering tendency and robust constitution of its parent, it is much dwarfer in growth, being only about 12 in. or 15 in. high. The colour is a deep glossy purple, mottled with a lighter hue on the lip, while the sepals are a deep metallic green. We saw some fine plants of this and the following Orchids in Messrs. Veitch and Sons' nursery, Chelsea, a few days since.

*Vanda insignis*.—The true plant bearing this name is a very distinct one from the variety of *V. tricolor* which is to be found in most collections. In habit it is similar to *V. suavis*, but the flowers are of quite a distinct form, having a broad open lip of a rich mauve tint, surmounted by a pure white crest. The sepals are broad and slightly incurved by a deep chocolate colour, marbled with yellow.

*Epidendrum Wallisi* is one of the finest of the genus, being stately in growth and beautiful in flower. It belongs to the section having tall slender stems, terminated by large clusters of flowers. These are 1 in. across; the sepals are canary yellow, copiously spotted with purple; the lip is white, with raised corrugations of a bright purple, combinations of colour that render the blossoms highly ornamental. It is of free growth and of easy culture.

*Oncidium dasytyle*.—The yellow-flowered *Oncidia* are so numerous, that such a distinct coloured species of this is particularly desirable, the flowers being pale yellow, or, in fact, almost white, while they have a central black velvety top resembling some insects. They are about 1 in. across, and make a conspicuous display on the blocks and in baskets in this nursery.

*Cattleya Mardelli*.—This is a new hybrid of Mr. Seden's, raised between *C. speciosissima* and *Lælia devoniensis*. The progeny is in no way inferior to its beautiful parents. Among other noteworthy Orchids in flower in this collection are *C. Philbrickiana*, *C. dolosa*, *Lælia purpurata alba*, *Odontoglossum Lawrencianum*, *Dendrobium Rhodostoma*, and *Phalaenopsis violacea*. W. G.

Scale Insects in Florida.—The Florida *Agriculturist* gives hints of what the Orange growers are doing there, and what they are thinking of doing. Mr. C. R. Bloomer, a large Orange grower, uses the following mixture: Five lbs. of common soap and ten lbs. of sal soda, mixed in an old kerosene barrel filled with water. His trees are clean and healthy. Another gentleman, near Jacksonville, recommends the following, which he has used with great success: To four lbs. of whale-oil soap, dissolved by boiling in one gallon of water, add a handful of washing soda and half a gallon of kerosene oil. If convenient add also an ounce of carbolic acid. Apply to trunk and branches with a flat paint brush. The editor of the *Agriculturist* adds: "We have tried passing a flame of fire through the tree, with success, not keeping it too long at any place to burn the tree. In our opinion, the best and easiest remedy would be a portable furnace and boiler with pipe, by which hot steam could be injected into the tree."



COUNTRY SEATS AND GARDENS OF  
GREAT BRITAIN.

## HAMPTON COURT.

ALTHOUGH, according to our modern ideas of

and the magnificent tree growth which everywhere meets the eye. In contemplating these noble avenues one could wish that the fashion of avenue planting were still in vogue, not, however, with untried exotics, such as many Conifers

In the grounds immediately surrounding the Palace one is impressed with the simplicity of the design, amounting almost to formality; and were it not for the gay flower beds, the garden has apparently undergone but little change



Hampton Court: View towards principal front.

are, but with such deciduous trees as the Lime, Horse and Sweet Chestnuts, the Elm, and the Oak, for what feature in a home landscape can create a better idea of sublimity than a venerable avenue of stately trees? Standing in the centre of the principal façade of the Palace, the eye is carried along the lines of avenue in three directions; that to the left, having the old tower of Kingston Church for a terminal, being by far the finest, as the trees form almost an archway, and therefore apparently add to the length of the avenue, which is about a mile. All these avenues consist of stately Lime

during the centuries it has existed, though probably the parallel lines of old Yews skirting the walks were clipped into formal heads, according to the old notions of garden scenery.

The almost total absence of the modern types of exotic tree and shrub growth is another conspicuous feature on the lawns—not that they would improve the scenery under the circumstances. Some fine examples of *Spiræa Lindleyana*, with their feathery foliage and large plumes of white flowers, are highly attractive just now in a long bed on the front lawn, but beyond these there is not much in the way of newer types of trees or shrubs.

The Palace, an immense rectangular pile, so famous in historic associations, is too well known to need description. The portion of it represented in our illustration is one of the oldest parts, and contrasts by its irregular disposition to the symmetrical aspect of the main building. The view is taken from about the end of the middle avenue, looking across towards the Palace in a north-westerly direction. Like the principal block, it is composed of brick, but, as in the case of the Kensington and St. James's Palaces,

designing gardens, there is not much to be learned in such a garden as that at Hampton Court, still there is much to admire in the simple grandeur of the long lines of noble avenues, the broad glades of uninterrupted greensward,

trees, and these also form a grand semi-circular avenue immediately in front of the Palace itself, a striking feature, particularly when the trees are in bloom and their perfume pervading the atmosphere.



the glare of redness is toned down by weather-beaten stains, and thus really forms the most picturesque part of the Palace. A similar wing is on the south side, nearly opposite the sunk or private garden, adorned with old-fashioned border flowers, that are more in keeping with the associations of the place than the modern bedding-out plants. Indeed, this sunk garden, with its Thames-side walk, grassy slopes, old Yew and other trees, is one of the most charming features of the place, and its interest and attractiveness would be in a great measure enhanced were it more richly stocked with the many fine newer types of hardy perennials and shrubs that teem in our hardy plant nurseries. These would still be in harmony with the present occupants of the garden, besides forming a contrast with the adjoining garden, which is kept in summer so gay with all kinds of tender plants arranged in various styles and positions, yet so neat and trim withal.

Near this garden is the famous Vine, now 113 years old, still remaining an object of wonder to the multitudes which visit the place. This season it is bearing a fair crop, but of course the size of the bunches and berries is not remarkable.

The trees in the Home Park consist chiefly of Lime, Elm, Horse Chestnuts, and a few Oaks and Cedars, but the three former predominate. Some of the largest Limes have a girth of from 12 ft. to 16 ft. at 3 ft. from the ground, and average from 110 ft. to 120 ft. in height. Those at the extreme east end of the south avenue line are the largest, and they rear their stately heads above the central piece of water, in which they are reflected, producing a play of light and shadow that everyone admires from the windows of the Palace. The Elms, too, are noteworthy for size, about a dozen of them having a girth of from 20 ft. to 28 ft., but several of the largest show signs of decay, as the large holes, some as much as 3 ft. in diameter, plainly indicate. Besides these venerable old living specimens there are many remarkable decayed stumps, though in a good state of preservation. There are a few large trees of the common Oak, one of which, possessing a girth of some 40 ft., is a grand old tree, though the stem is hollow. The magnificent avenues of the Horse Chestnuts in Bushey Park, as everyone knows, are matchless for healthy vigour and picturesque beauty, and when laden with myriads of flower clusters, constitute a sight unequalled in their way.

In that portion of the grounds adjoining the Maze there are some fine examples of various kinds of deciduous and Coniferous trees, beneath which there is a carpeting of such shrubs as *Berberis Aquifolium*, Laurel, Privet, *Cotoneaster buxifolium*, Box—all excellent shrubs for the purpose. The place, however, is cut up in such a meaningless way by walks as to more resemble a maze than the Maze itself; and the public are apparently not satisfied with such an inordinate supply of paths, but they make tracks of their own, so that the whole surface is a perfect riddle of walks, a contrast to the sobriety maintained in this direction at Kew and other public gardens. The floral embellishment of the grounds is, as usual, carried out in an effective manner under the superintendence of Mr. Graham, but, owing to the excessive hot and dry weather we have experienced, the beds do not present the appearance they ultimately will, therefore it is premature to give a detailed description, though now the display is highly attractive, owing chiefly to the plants being arranged in bold masses in large rectangular beds, and in such an arrangement each colour tells its own story, as it were, so different to where plants of various tints are planted in

narrow rows. One of the most brilliant of the zonal Pelargoniums is one Henri Jacoby with large trusses of bloom of a rich deep crimson. Violas are used with excellent effect intermixed with Pelargoniums and other plants, that is if the two colours will harmonise; for instance, Bijou Pelargonium and Viola Blue Perfection, edged with Iresine Lindeni and an outer row of Golden Chickweed, is a pretty arrangement, though the season has not favoured the growth of the latter. Another fine bed is with *Abutilon naviium maculatum* and *Petunias*, and another with a mixture of the *Abutilon* and *Verbena venosa*, both edged with Lindeni's Iresine. But as we before observed the bedding is not at its best, and we must reserve details for a future notice.

The warm border skirting the wall running on either side of the principal front of the Palace is an excellent site for plants of a sub-tropical character, and it is well stocked with such subjects as Castor-oil plants, Chilean Beet, Maize, and among them a goodly admixture of Hemp (*Cannabis sativa*), which by its light feathery foliage is a fine feature, and it might profitably be used with good effect more often than it is in smaller gardens. The wall is festooned with various kinds of Clematis and Honeysuckle, forming an excellent background for the sub-tropical plants. W. GOLDRING.

#### LIME AND ITS COMPOUNDS.

THE chief forms in which lime is used in connection with the soil are quicklime, carbonate, phosphate, superphosphate, and sulphate of lime. I propose to offer some suggestions on the considerations which should guide our choice of the particular form of lime to apply according to the circumstances of various cases. The carbonate, phosphate, and sulphate are natural productions, but quicklime and superphosphate are manufactured commodities.

**Quicklime.**—Besides the name quicklime, it is called hot lime, burned lime, caustic lime, &c.; but the single word "lime" exactly represents its composition, and is the best term that can be used for it. This lime is manufactured from its carbonate, which exists in the form either of limestone or of chalk, and is composed of fifty-six parts of lime and forty-four parts of carbonic acid, making one hundred parts by weight of carbonate. By heating in kilns the whole of the carbonic acid is driven off, and lime is left. By this treatment, the lime having lost its neutralising acid, has become a highly active substance, exhibiting great caustic properties, and energetically endeavouring to unite with some other body capable of satisfying and neutralising its peculiarly active character. This craving is usually satisfied in the following manner. Water may be added, or, if not, the lime will get it from the atmosphere, when combination takes place. In the former case it is quickly accomplished, and great heat is consequently developed; whilst in the latter a slow union goes on, proportionately as the lime can obtain the moisture from the surrounding air. When the reaction is complete, hydrate of lime has been formed, and its composition is by weight as follows: lime, fifty-six parts; water, eighteen parts. This hydrate is a dry whitish powder, and is soluble in water, which fact is highly important, as it will be seen that the next change renders it a body perfectly insoluble in that medium when pure. Now the carbonic acid in the air begins to act on the hydrate, and gradually but completely turns out the water, and in course of time regains its original position of union with the lime, so that now we have the same compound

that we started with, viz., carbonate of lime; and the only difference is that now it is in a minutely divided state, and so can the better be acted upon by disintegrating agencies but otherwise it is quite as insoluble as the chalk was in the first place. Therefore, to furnish plant food for present use, the lime should be applied before it has taken back its carbonic acid from the atmosphere.

Now, these various changes must be clearly understood if we are to know when and how to apply lime to the soil to the greatest advantage to the land and ourselves. When the lime is in the soil—suppose, for instance, in its form of hydrate—instead of getting supplied with carbonic acid from the air, it gets it from decomposing matter in the soil, and by so carrying off the products of decomposition, aids and hastens the decay of further portions, and thus assists in bringing them into a form available for plant food. But if the lime has been long exposed to the air before spreading upon the land, this valuable property is entirely lost. On the other hand, it is not wise to spread the lime before it has become hydrated, as, supposing there are compounds of ammonia in the soil, the lime seizes upon the acids of these compounds and sets free the ammonia, which rapidly escapes into the air; besides, instead of causing the decomposition of organic matter in a favourable manner, it would take away its water, dry it up, and tend to carbonise it and render it useless. The lime should really be shot in heaps in convenient places, and slaked in the same way as the bricklayer slakes his lime for making mortar; and as soon as it has been mixed up with sufficient water it should be covered up with earth, to keep the carbonic acid of the atmosphere away from it. After allowing it time to slake, it should be quickly spread upon the land and harrowed in immediately. It should not be ploughed in, as it is well known that lime rapidly sinks into the soil, so that it only requires a superficial covering of earth, just sufficient to keep the air from readily reaching it. Lime applied in this way also assists in decomposing the rocky materials existing in soils, thereby liberating the alkalies and aiding the formation of nitre, which is of such well-known value as manure. In this form also it neutralises free acids, and also renders land light and porous—sometimes, in fact, too porous for Wheat and other crops requiring compact soils for their perfect development. In cases of this kind, the roller will generally be a sufficient remedy, as it is only the mechanical action of the lime, and not its chemical composition, that has caused the difficulty. Indeed, it is impossible to injure heavy land by the application of lime in any quantity, provided it is properly slaked and applied in its hydrated form. With lighter soils it is different, and if too much lime in its caustic form be applied to these, it quickly decomposes the small available quantity of organic matter which such soils contain, and uses it up in one short season. No doubt it whips up the immediate crop, but it does so at the expense of the future. To soils of this kind, sulphate may be applied as a source of lime in large quantities without the slightest fear of injury, and, indeed, with the most beneficial results; but of this I will speak later on. With regard to the limes manufactured from chalk, it is believed by cultivators that those made from the lower grey chalk give better results than the purer and whiter limes from the upper beds, and many who have had long experience willingly give a higher price for the grey than the white. Before leaving the consideration of this simple form of lime, it may be well to mention that if it is mixed with perfectly fresh manure no harm will happen; but if de-



composition has commenced ammonia has been formed, and, no matter what form it may have taken—whether carbonate, humate, ulmate, &c., the lime will inevitably seize upon the acid and set the ammonia free to escape into the atmosphere.

**Phosphate of Lime**, such as is found in bones, coprolites, and other natural substances, is composed of lime, 168 parts, and dry phosphoric acid 142 parts, by weight. In this form it is a perfectly insoluble substance, the bone production being, however, more readily changed to a soluble form than the mineral. Bones in their natural form cannot act as plant food. Whether they are heaped with earthy matter, or whether as bone dust they are applied to the soil, the subsequent action in either case is similar. The organic portion is fermented and decomposed, and the phosphate of lime is acted upon in the following manner. Carbonic acid is perhaps the most obliging acid known. It is turned out of its combination with all basic substances by the direct application of any other acid under the sun; but in the case under consideration it has a slow, but effective revenge. It has such an affinity for lime that, under such conditions as it finds in the soil or compost heap, it gradually takes away one-third of the lime from the insoluble phosphate, forming with it chalk, and leaving the remaining two-thirds behind. These two-thirds are now in combination with the original quantity of phosphoric acid, together with some water which has also been admitted, and the substance now formed is bi-calcic phosphate of lime, its composition by weight being as follows: Lime, 112; phosphoric acid, 142; and water, 18. Here, it will be seen, the carbonic acid has taken away 56 parts of the lime to form chalk, whilst 18 parts of water have replaced the 56 parts of lime taken away. The new body is fairly soluble, and is probably the very best form of phosphate of lime to add to the land. It is able to furnish plant food slowly, but surely; it is sufficiently soluble, but it is not rapidly used up, and it feeds the plant through all stages of its growth. Cultivators were perfectly satisfied with fermented and ground bones until it was made known that, if bones were subjected to treatment with sulphuric acid, a more soluble and, it was supposed, better manure was obtained.

This discovery was immediately utilised by a well-known manure manufacturer, and so great was his success that other large makers sprung into existence one after another, until the industry has now become of enormous dimensions. Now many hundreds of thousands of tons of pyrites are imported annually for the manufacture of the sulphuric acid required to make this manure. The principle involved in the production of superphosphate is as follows: After the gelatine has been extracted from the bones, they are treated with sulphuric acid, in proportion of 196 lb. of pure acid to 310 lb. of bone phosphate. As before stated, this bone phosphate is composed by weight of 168 parts of lime and 142 parts of dry phosphoric acid. The sulphuric acid now acts in precisely the same way that the carbonic acid in the soil acted under the older system, but it does exactly twice the work of the latter, and it does it rapidly instead of by a tedious process. Instead of taking away 56 parts of lime, as the carbonic acid did, it appropriates 112 parts, forming gypsum in this case instead of chalk, as in the former, and leaving the new compound—namely, superphosphate of lime, to possess the following composition: Lime by weight, 56 parts; phosphoric acid, 142 parts; and water, 36 parts. So now we have less lime by 56 parts, and more water by 18 parts. The gypsum formed artificially in the manufacture of this 234 parts

of superphosphate amounts to 272 parts, and the two bodies are in a state of intimate mixture, and so remain to be sold, as is well understood, as superphosphate of lime; and some manufacturers further add large quantities of ground gypsum as a "drier." Therefore commercial superphosphate is very largely made up of gypsum. It was found that mineral phosphates, such as coprolites, might be mixed with the bones without seriously interfering with the quality of the manure, and it is now often the practice to mix equal quantities, and afterwards treat the mixture with the sulphuric acid. This has the effect of keeping the price within reasonable limits. The action of superphosphate depends greatly upon the composition of the soil to which it is applied. Leaving the gypsum for the present out of consideration, it is found that, if there are no free basic substances or carbonates present in the soil, the superphosphate is quickly dissolved, and causes rapid and rank growth; but its effects are quickly exhausted, and the plant then fails to acquire that nourishment it needs to fill its cells in the later stages of its growth. But it almost always happens that there is more or less lime, or carbonate of lime, in the soil, and this immediately seizes upon a portion of the phosphoric acid of the superphosphate, and leaves precisely the same compound as that obtained by the fermentation of bones, which compound is the mean between the natural insoluble tricalcic phosphate and the extremely soluble superphosphate of lime. This medium compound is also the form of the so-called "reduced superphosphates," which from age and contact with basic substances have lost some of their phosphoric acid; and though thereby they have become commercially depreciated in value, their practical utility has for many purposes increased. So, as a rule, after superphosphate has been applied to land, it becomes exactly similar to fermented bones, with one great difference, however, viz., that the former contains at least half its weight of gypsum; and some of the good results usually ascribed to superphosphate are due to the presence in its composition of this large proportion of sulphate of lime. Superphosphate should be applied in small quantities to all soils that are short of phosphoric acid; but it would often be found that a dressing of gypsum mixed with bone dust and soot, &c., would be equally efficacious, at a less cost.

**Carbonate of lime**, in the form of chalk, marl, shell-sand, &c., is sometimes used for applying to land, and in some cases it has its advantages over hot lime; for though it does not decompose the silicates, it does not use up the organic matter, and therefore is better adapted for light soils, which have not any organic matter to spare. It can also sometimes be obtained at a very cheap rate, and, where lime is dear, economical reasons may dictate its use. It is useful for neutralising free acids in soils, and so sweetening the herbage; but it is lumpy and insoluble, and difficult to deal with, and, with manufactured lime and ground gypsum at reasonable prices, chalk is not likely to be used to any extent by practical people.

**Sulphate of lime** is found naturally in the form of gypsum, which is composed of lime, 56 parts, dry sulphuric acid, 80 parts, and water, 36 parts, by weight. This requires grinding before it is available for use, and it can now be obtained in the form of powder at a very moderate cost. The sulphate of lime is useful as plant food, whenever a soil requires lime or sulphuric acid. Lime is present in most soils, but many districts are very deficient in sulphuric acid, and ground gypsum is the most convenient and the cheapest form of sulphuric acid to apply. Where a sandy soil requires lime, in

which case quicklime is objectionable, gypsum answers the purpose admirably. It is portable, easily spread, and slowly soluble, and it assists such light soils, both mechanically and chemically, in retaining ammoniacal and other manures that are applied to them. The best results may be obtained by using gypsum with guano, bone dust, shoddy, rags, soot, and other nitrogenous and phosphatic manures, and it would probably be found that a mixture of bone dust and gypsum would produce a more lasting effect at a cheaper rate than would the application of superphosphate of lime. Those who use gypsum as a top-dressing prefer to sow it on dewy mornings or evenings, or during a slight shower of rain, so that it clings to the leaves of the plants, and they say that its effects, when it continues for some time on the leaves, are very remarkable. Where a soil is deficient in sulphates, and yet contains an excess of organic acids, which renders it sour, an application of 80 per cent. of gypsum mixed with 10 per cent. of lime, or 20 per cent. of chalk, would be an efficient remedy. There are, however, some samples of gypsum, particularly that from Sussex, which contain 10 to 15 per cent. of carbonate of lime in their composition; and in such a case as the one under consideration a dressing of this kind of gypsum would effectually cure the sourness without any admixture of lime or chalk, and it would certainly be the most convenient and best kind to apply.—W. J. KEMP, in *Field*.

## THE FLOWER GARDEN.

### HARDY FLOWERS AT KIRKSTALL.

JUST now the garden is very interesting, notwithstanding that the first and fairest blush of summer bloom is past. Roses are the main feature, and never before have we seen them so good here. They were mulched thickly in early winter and pruned late in spring. Mildew, fly, and grub attacked them simultaneously; the first was soon got under, the fly was quickly cleared by scores of small birds from the woods close by, and the grubs, which destroyed many of the finest buds, were checked by hand-picking. The other day we arranged the finest combination of flowers of the present season, consisting of the following simple subjects: *Aquilegia chrysantha*, *Tunica Saxifraga*, *Campanula coronata*, *Rosa villosa*, Sweet Brier blooms, and a few Grasses, including *Stipa pennata*. The yellow *Asphodel* for a long time past has put out one or two of its starry blooms at a time from a stout spike. *Geranium sanguineum*, in from 2-ft. to 3-ft. patches, is simply grand on rockwork. The various *Enocheras*, including *E. glauca*, *E. speciosa*, *E. Fraseri*, *E. macrocarpa*, and *E. fruticosa*, and some of the annual species, are also very gay, and the same may be said of such perennials as *Lathyrus grandiflorus*, *L. latifolius*, and *L. l. albus*. The *Eryngiums* promise to be finer than heretofore with me, probably because of the rich quarters given them, viz., an old *Asparagus* plot. Double *Potentillas* are likewise very showy, and though their habit is most untidy, they are likely to gain a place amongst choice border plants. A handsome *Phlox*, having pure white flowers, and which has been in flower a fortnight, is grown here without a name, which I should be glad to learn; it is perfectly hardy, which is not the case with other white sorts I have tried. Its height is 18 in.

*Campanulas* have long made a fine show. Seven varieties, but slightly differing, of the *turbinata* section are most lovely—white, pale and dark blue, and whites variously tinted with blue and pink. *C. coronata* is quaintly beautiful, reminding one of the white-frilled caps worn by dames thirty or more years ago. *C. hirsuta*, *C. muralis*, *C. garganica*, *C. pusilla*, and *C. Zoysi* are even dwarfer than the varieties of *turbinata*, but to my mind the gem of gems in the *Hairbell* family is *C. Waldsteiniana*; it has erect, fine, wiry



stems only 2 in. high, well divided at the top, causing the foliage to be hidden by its flowers, which are in the way of those of *C. garganica*, but without the white starry eye, and perhaps somewhat larger. The foliage is nearly the size and substance of that of *Gentiana verna*, but of an unusual glaucous grey colour; this greyness, in a pleasing and indescribable manner, pervades the bloom. *C. Hendersoni* is a grandly bloomed Harebell, darker and more densely flowered than *C. tenella*, sometimes but wrongly called *C. alpina*. Many of the tall species have been recently noticed, as have also the beautiful Thrfts. *Acantholimum glumaceum* has a neater habit than name, but with me its centre twigs die off every summer. *Genista tinctoria* fl.-pl. has been, and still is, much admired here, though my specimen of it is but little more than 18 in. across. *Coronilla iberica*, 5 ft. through, is in good character just now. *Pentstemon Lewisii*, *Cobaea*, *Scouleri*, *pubescens*, *ovatus*, and *speciosus* have all proved hardy, and their merits as alpine are of a high order. *Linaria vulgaris* var. *peloria*, having crept into my garden somehow, has pleased several visitors with its curiously distinct flowers. *Aquilegia trinityensis* has proved to be one of the handsomest of Columbines. The Gentians have not done well with me this season, excepting the dwarf kinds, such as *G. verna*, *G. bavarica*, *G. acaulis*, and *G. brachyphylla*; these seem to be more at home, as do also the *Soldanellas*, *Cypripedium spectabile*, established near these for three years, fails to bloom this season; its growth, too, is much weakened, but *Epigaea repens* does well in the same quarter, viz., under a west wall, sheltered from the north by a *Rhododendron* and south by a little mound, topped by an *Andromeda*, 2 ft or 3 ft. high, so that there is but a narrow opening to the east. Planted in nearly all leaf-mould, amongst which some limestones are half buried, it has both grown and flowered freely for two years. *Brodiaea congesta* carries a fine head of bloom on a stem more than 3 ft. long. *Actinella scaposa* is an over-praised plant, having *Coreopsis*-like flowers, but in every way inferior to that plant. *Saussurea macrophylla* is neat and quaint—not showy in the least, but there is something about it that will save it from being discarded from choice collections. *Teucrium pyrenaicum* is a valuable rock plant, as are also *Antirrhinum Asarina*, *Edrianthus dalmaticus*, *Polemonium confertum*, *Salix reticulata*, *Helianthemum Tuberaria*, and *Convolvulus maritimum*. One specimen of *Saxifraga Hirculis* is finely in flower in a position where it catches the surface water from the walk and fully exposed. In no other instance in my garden has this, the most beautiful flowered of all the *Saxifrages* done so well. It seems to like plenty of water and sunshine.

I should not omit to mention a little Daisy which has flowered here since March. Grown side by side with *Bellium bellidioides*, it proves to be quite distinct. It has much narrower petals, and they are more broadly divided, flower-stems 4 in. high, almost thread-like, but erect foliage, not half the size of that of *B. bellidioides*; moreover, it grows in flat, but loose rosettes at the ends of underground runners. It was presented to me by a lady who collected it in Corsica, and hitherto we have spoken of it under the name of *B. corsicum*. Is this known to any of your readers? and by what name? I will only add that for rock-work it is a gem.

JOHN WOOD.

**Hardiness of the Tuberose.**—I was glad to read the note (p. 25) respecting the Tuberose being out all winter at Tottenham, because I turned a few bulbs out of pots last summer, never expecting to see any more of them after being subjected to several severe frosts, but the note in question caused me to examine the spot where I planted them, viz., under some small Walnut trees, where I grow my collection of *Anemones*, and to my surprise I found them in a growing state, not strong, but stronger than many of the *Tritomas* have grown as yet with me since

the past winter. What an acquisition this will be if it can be added to our hardy collections, and why should it not be equally hardy as many American roots so classed!—JOHN WOOD, *Woodville, Kirkstall*.

**Xerophyllum asphodeloides.**—This is an interesting plant, but one rather more curious



The Turkey's Beard (*Xerophyllum asphodeloides*).

than beautiful. It forms a tuft of hard setaceous leaves a few inches in height, with much the habit of a small *Asphodel*. The flower-stem is erect and leafy, and bears a compact raceme of white flowers with spreading segments. It succeeds best in moist peaty soil. In the Cambridge Botanic Garden it is planted on a mound chiefly of peat. In this position it seems to grow well, and around it has grown a cushion of *Pearl-wort*, which rather enhances its appearance and, perhaps, its well-being. It is a native of the North American Pine barrens, from New Jersey to Oregon southwards.—L.

#### HYBRID COLUMBINES.

THERE is no objection whatever to hybridism as such, or to cross-breeding, and in the case of the



Rocky Mountain Columbine.

hybrid *Columbine* quite so good as what we know as the pure species. That they (the hybrids) are pretty no one doubts. It is not a question of hybridism or cross-breeding, but of the value of the plant. We have never seen a hybrid *Columbine* so lovely as the true *A. coerulea* or the true *A. glandulosa*. Therefore when we see people getting enthusiastic over the seedlings that occur in every garden where *Columbines* are grown, we always wish their attention was fixed on trying to secure a lasting stock, so to say, of the beautiful species. People do not always read carefully. No one ever said a word as to "natural variations" being against good taste in gardening; "natural variations" are among the blessings of gardening. The question is the value of what we get in that way. Some things are good—some worthless; others good, but inferior to the types from which they sprang. The above illustration is from a flower of the Rocky Mountain *Columbine* sent us this year by Mrs. Davidson, in whose garden in Dorset the plant is said to be a good perennial. Of the various seedling *Columbines* none are more valuable for cultivation than certain forms of the common *Columbine*. A good single white variety grown at Munstead. It is a very bold, graceful, and hardy plant.

**Campanula carpatica as a Wall Plant.**—On the terrace walls here (which are built of rough blocks of stone) this dwarf creeping *Campanula* has got well established, and is spreading over the entire surface. At this time of year its masses of beautiful blue flowers look very pretty, peeping out amongst the white blossoms of wall shrubs, such as those of the *Jessamine*, or *Deutzia crenata*, or even amongst the variegated foliage of the *Euonymus*, with which the wall is covered. I have no doubt many might like to try so simple and pretty a combination; if one good clump is put in at the top of the wall, I have no doubt it will quickly spread, and prove a source of pleasure for many years to come.—J. GROOM, *Linton Park, Maidstone*.

**Aspects for Herbaceous Plants.**—The aspect in which these are grown greatly affects their permanent welfare. In a border

here having a gentle slope to the north, being on one side of a walk, but in no way shaded from the south, except by a fence of *Roses* and a low *Holly* hedge, I have, during the past severe winters, lost many things that have survived on the opposite border, which faces the sun direct, a south border indeed. On the northern aspect all the *Tritomas* have died outright: on the south side they have been injured, but not killed. It is the same with *Lilium candidum*; but the scarlet *Martagon* does equally well on either side. On both north and south aspects all our *Geum coccineum* died last winter, and so did many of the *Potentillas* on the north side; some of these were, however, new kinds only planted last year. *Larkspurs* have likewise suffered severely, and I find most things grow weaker on the northern aspect than on the south, and spring bulbs do not

*Columbines* referred to by Mr. Burton last week, the answer is that no one has ever seen a bloom so well. I find it a good deal the best plan to plant all doubtful things in spring instead



of autumn, as it enables the plants to get established, and in a condition to resist the winter. What I did not quite expect was that all the newer and finer *Aquilegias*, hybrids, and others have stood the winter on both borders, and flowered well, greatly increasing their root size at the same time. Most of them were transplanted from a bed to the border in the autumn. *Hyacinthus candicans*, planted 6 in. or 7 in. deep at midwinter, suffered no injury from the continual frosts and snows and late spring, and is now pushing strongly.—MIDLAND GARDENER.

**The Tiger Flower.**—Among the plants that stood last winter I was much surprised to find *Tigridia Pavonia* in the ordinary border, and on a rockery, *Nothochlaena Marantæ*, from Corsica last year.—A. KINGSMILL.

***Spiræa venusta*.**—A herbaceous kind, is hardly inferior to *S. palmata*, only taller and looser in habit, with flowers of not quite so deep a rose colour. It comes into flower just as *palmata* goes out, and is now expanding here.—J. S. W.

***Astrantia maxima*.**—The usual plant of this name has greenish-white petals deepening in the centre to pink. We have here a variety obtained from the old garden of the late Mr. Leeds which has pale greenish flowers almost white, but without any tinge of pink. I don't find this form described anywhere, but it is a very handsome variety, growing about 2 ft. in height and bearing its beautiful star-like flowers in profusion. Can any of your readers give it a name?—BROCKHURST, *Didsbury*.

***Smilax*.**—I saw in your "Late Notes and Questions" recently the following question: "Do you know a plant called *Smilax*? an American term." I should like to know why your correspondent calls *Smilax* an American term? It is certainly Greek, and is mentioned in line 108 of the "Bacchæ of Euripides," where it has the epithet fair-fruited, i.e., berried, applied to it. Theophrastus in his "History of Plants" describes it as a creeper, with a thorny stem and an Ivy-like leaf; the flower he calls "white and fragrant as a Lily." To the same effect, Pliny in his "Natural History" writes: "Similis est hederæ, e Cilicia primum quidem profecta, sed in Græcia frequentior, densis geniculata caulibus, spinosis fruticosa ramis, folio hederaceo, parvo, non anguloso, a pediculo emittente pampinos, flore candido, olente lilium." I should not have troubled you with all this somewhat pedantic lore which I have culled from Mr. Sandys' admirable edition of the "Bacchæ," but that I am extremely desirous of ascertaining what the *Smilax* is like, and I trust your correspondent will kindly send me a spray of it. Like Ivy, it was twined into garlands by the votaries of Dionysus.—H. M., *Bromsgrove*.

#### SEASONABLE WORK.

**Pleasure Ground.**—Where the annual pruning of shrubs has been delayed it should now be taken in hand, otherwise young growths which follow will be too tender to withstand the frost of the next winter. In many places the severe frost has left a terrible mark upon shrubs and conifers, and even common Oaks in this locality now present a sickly appearance similar to that which followed the winter 1860-61. It is an ordinary practice, but nevertheless, a mistaken one, to cut injured shrubs early in the spring; whereas by the exercise of a little patience and the determination to put up with a temporary eyesore, the delay of a few weeks would save many fine things from destruction. Shortly after the dreadful Tuesday in January so fatal to animal and vegetable life, many of our *Arbutus*, *Evergreen Oaks*, *Laurustinus*, *Escallonia*s, Chinese *Privets*, *Garryas*, Portugal and common *Laurels* would have been given up for dead by many practical men, but by leaving them hermetically sealed with their own defunct tops, we now find 75 per cent. breaking freely from the branches up to the two-year old shoots, and many of the remaining 15 per cent. that were more severely injured are breaking up from the ground. We are now busy cutting back, and it is scarcely necessary to say the recovery of *Arbutus Andrachne*, of *Ilex diphyrena*, and a host of other old friends is entirely due to patience. Where tender Conifers such as *Pinus insignis*, *Cupressus macrocarpa*, and *Deodars* have been killed or disfigured they should be properly grubbed up with all their strongest roots, particularly where choice specimens are growing near them. Common *Laurels*, also *Bays*, may be sawn off above the ground. The general pruning of living trees and hedges of various kinds, produces the most pleasing effect when performed with a knife.

W. COLEMAN

## TREES AND SHRUBS.

### HARDINESS OF *DEUTZIA GRACILIS*.

I SEE Mr. Ed. Jackman refers to this in his Notes on Carnarvonshire. It may also be said to be hardy in East Anglia. Still the bloom in the open here, though plentiful enough, is smaller and less white than when grown under glass. It seems less injured by the cold than the drought. We, however, propagate all our *Deutzia gracilis* in the open air, much in the same way as our white *Spiræas*. No plant, however, pays better for a little fostering culture, either out of doors or under glass, than the *Deutzia gracilis*. After flowering it should be cut back if need be, and allowed to make its new growth in a sheltered place or under glass. Thus forced and partially matured, the *Deutzia gracilis* may either be planted out or kept in pots in a warm sheltered spot in the open. Plants so treated will be drooping pendent bushes laden with fluffy pure white bloom the following season.

**Other *Deutzias*.**—Neither *D. scabra* or *crenata* force so freely as *gracilis*, but they have no rivals in the open air. We have some magnificent bushes of the former posted among *Rhododendrons*, and the effect is charming. *D. scabra* is not, however, of much use for cutting, as its flowers fall very soon, and the orange colour of its stamens mars the purity of its white flowers when brought too near to the eye. At a distance, however, in shrubberies it is simply magnificent.

*D. crenata* is yet more striking, and the flowers are also more durable. The chief drawback is the profuseness of pink on the under, outer, and especially on the under-sides, so that the flowers are really a mixture of those two colours, and neither of them pure. There is, however, a pure white double variety of this, which is charming. Double as the *Jasminum Sambac*, and white as *D. gracilis* at its best, this double white *Deutzia* is indeed a great acquisition for house purposes, or in the shrubbery. D. T. FISH.

### New *Deutzia*, *Pride of Rochester*.—The old double-flowered variety of *Deutzia scabra*



New *Deutzia* *Pride of Rochester*.

now in flower in most gardens is pretty enough, but a new form of *D. crenata* that has had its origin in Messrs. Ellwanger & Barry's nurseries at Rochester, New York, is an improvement upon it. As may be seen by the woodcut (which represents one-third the natural size), the flowers are very double and pure white, except the backs of the petals, which are tinged with rose. The raisers say that

it excels all the other sorts in size of flower, length of panicle, profuseness of bloom, and vigorous habit. It must, therefore, be a worthy addition.

### TWO KINDS OF CATALPAS.

THERE need no longer be any question as to the two kinds of *Catalpa*. No observer who has explored the country watered by the lower Wabash and White Rivers of Indiana, the southern portions of Illinois, the western lowlands of Kentucky and Tennessee, and the swampy region of south-eastern Missouri, and the adjoining portion of Arkansas, which lie along the Mississippi between the uplands on the eastern and western sides of the delta lands, will hesitate for a moment in reaching the conclusion, that here he has found the native habitat of a tree that is very different from that which is usually cultivated, and that is known in these Western States only as a cultivated plant, since it is never seen growing wild.

In all the tract just indicated, native *Catalpas* may be seen in the original forests. Unfortunately these are becoming more and more rare, since the merits of this *Catalpa* and its lumber have been known and appreciated.

Crossing the State of Arkansas by the St. Louis and Iron Mountain Railroad, the explorer finds that the bottoms of the Arkansas are occupied by trees of the same character; and the whole delta of the great river where *Catalpas* grow is believed to be occupied by this kind alone. These Mississippi trees and their progeny, wherever found, which can be traced to this source, are all of the *speciosa* kind; while all others in cultivation are more or less clearly and directly traceable to the hand of the nurseryman, and through his agency to the Atlantic seaboard, and so on back to the accepted origin of the typical form of the *Catalpa bignonioides* in Georgia. Let it be repeated, not one of this latter kind is ever found growing wild in the Western forests; wherever the trees are seen, they are clearly referable to human agency, and that of very recent date.

### Diagnosis of the Two Forms

**The Species.**—*C. bignonioides*.—Tree, as above described (by the botanists), usually low-branched; short-stemmed when in open lands. When planted thickly in groves the stems become taller, but are seldom really straight. Young trees often winter-killed north of the Ohio River.

Bark gray, and in mature trees (or those of 12 years or more) it is scaly, peeling off in small thin plates, very easily separated.

Flowers, as represented in Michaux' plate, tinged with violet, having yellow and purple spots inside the throat, as above described.

Fruit, usually abundant; pods 8 in. to 15 in. long, somewhat flattened, the valves meeting at an angle, forming a projecting ridge that can be sensibly felt by the fingers, transverse section lenticular, surface slightly uneven, usual colour light brown, especially on cultivated trees in this latitude and northward.

Seeds applied end to end, in one or more layers, to a rather flat, grooved, gray placenta, winged as described; entire length, 1 in. to 1 in. 7 lines; breadth, 2 lines; averaging 100 to a pod. The coma or fringe is usually sharply pointed at each end. Well represented in Michaux' plate. Weight, 2000 to the ounce, says Barney.

**The Variety *speciosa*.**—Trees more erect, naturally growing taller, and better furnished with limbs where exposed. In thick groves erect, straight and tall; in natural forests stems 50 ft.; the tops of old trees apt to be broken. In cultivation more hardy than the *bignonioides*.

Bark, in young trees, is light gray, becoming darker with age, adhering closely, and moderately furrowed vertically, much like that of White Ash; when older, it becomes somewhat looser in places.

Flowers much larger, nearly pure white; markings in the throat clear yellow and purple, very showy; one to three weeks earlier than the common species.

Fruit often less abundant; pods usually longer, 15 to 20 and more inches; 6 to 7 lines in diameter;



generally of darker brown colour, more cylindrical, and usually marked with distinct parallel grooves in their entire length.

Seeds, winged and fringed at both ends, larger than the species, 1 in. 8 lines long, 3 to 4 lines wide; the coma or brush at the ends is more spread, less pointed, weight 1000 to 1200 to the ounce, 1300 by another count. Texture of the wing membrane more silky and softer, compared with the satiny and harsher tissue of the *bignonioides* species.

Dr. Engelmann, in the *Botanical Gazette*, Vol. 5, No. 1, January, 1880, says:—

“*Catalpa speciosa* (Warder).—A middle-sized tree with grayish-brown, much cracked or furrowed, at last slightly flaky bark, and light yellowish gray wood; leaves large, truncated, or more or less cordate at base, slenderly acuminate, soft downy on the under side, inodorous; flowers in large and loose panicles; tube of the corolla conical, longer than wide, its lower part scarcely protruded; upper lip, before its expansion, longer than the other lobes, and enveloping them; lower lobe bilobed; inside of corolla slightly marked at the throat with red-brown lines, and with two yellow bands at the commissures of the lowest with the lateral lobes; stamens and style as long as the tube, pod terete, strongly furrowed; wings of seed about as long as the seed itself, rounded at the ends and split into a broad coma.

“Common in the low, rich, sometimes overflowed, woodlands near the mouth of the Ohio along the lower course of that river and its confluence and in the adjoining lowlands of the Mississippi in the States of Illinois, Indiana, Kentucky, Tennessee, Missouri, and Arkansas, according to Michaux abounding near the borders of all the rivers which empty into the Mississippi further south; whether the localities cited by him in West Florida produce this or the eastern species is at present unknown. Flowers in May. This tree has quite an interesting and instructive history. It was already known to Michaux and to many botanists and settlers of those regions; even the aboriginal Shawnees appreciated it, and the French settlers along the Wabash named it for them the Shawnee Wood (Bois Chavanon), and prized the indestructible quality of its timber; but the botanists, even the subtle Rafinesque, who roamed over those very regions, seem to have taken it for granted that it was not distinct from the south-eastern *Catalpa bignonioides*. To me the fact that these trees, then not rarely cultivated in St. Louis, produced their larger and more showy flowers some 10 or 15 days earlier than the eastern or common kind, was well known as early as 1842, and their blossoming has since been annually recorded in my notes on the advance of vegetation, but I had not the sagacity or curiosity to further investigate the tree. It was reserved to Dr. J. A. Warder, of Ohio, to draw public attention to it in 1853. He was struck with its beauty in the streets of Dayton, Ohio, where a few stragglers were cultivated, and described it cursorily in his journal, the *Western Horticultural Review*, Vol. iii., p. 533, without deciding whether a distinct species or a variety, and without assigning a name to it. It was soon named, however, privately as it seems, by him and his friends *Catalpa speciosa*, and was propagated as a more ornamental form. Thirteen years later I find in the catalogue of J. C. Teas’ nursery, Raysville, Indiana, for 1866, *Catalpa speciosa* offered, the 100 one year old seedlings for \$1.50. But only within the last few years the beauty and importance of the tree has made a greater impression on the public mind, principally through the exertions of Dr. Warder himself, Mr. E. E. Barney, of Dayton, and Mr. R. Douglas, of Waukegan, Illinois. The latter was so much struck with the future importance of this species, that in the autumn of 1878 he collected on the Lower Ohio 400 pounds of its seed for his own nursery and for distribution to all parts of the world.

“*Catalpa speciosa* replaces *C. bignonioides* entirely in the Mississippi Valley. It is readily distinguished from it by its taller and straighter growth, its darker, thicker ( $\frac{1}{2}$  in. to 1 in. thick), rougher and

scarcely exfoliating bark (in the older species it is light gray, constantly peeling off, and therefore not more than 2 or 3 lines thick); its softly, downy, slenderly acuminate and inodorous leaves (those of *bignonioides* have a disagreeable, almost fetid, odour when touched), marked with similar glands in the axils of the principal veins of the under side; by its much less crowded panicle, and by its much larger flower, fruit, and seed. The flowers I found 2 in. in the vertical, and a little more in the transverse diameter; the lower lobe is deeply notched or bilobed in *speciosa*, entire in *bignonioides*; the tube in the former is conical and 10 lines, in the latter campanulate and about 7 lines long; in the first slightly oblique, in the other very much so—the upper part being a great deal shorter than the lower one, so that the anthers and stigma become uncovered; the markings in the old species are much more crowded and conspicuous, so as to give to the whole flower a dingy appearance, while ours looks almost white. The upper lip of the corolla before expansion extends beyond the other lobes and covers them like a hood in the western species, while in the eastern it is much shorter than the others and covers them only very partially. The pods of our species are 8 in. to 20 in. long, 17 to 20 lines in circumference, dark brown and strongly grooved, when dry, the placental dissepiment very thick; in the eastern species the pod is nearly the same length, but only 9 to 12 lines in circumference, its grooves very slight its colour pale, and the dissepiment flat. In both species the pod is perfectly terete before the valves separate, after that the valves of ours remain more or less semi-terete, while the much thinner ones of the other flatten out, so that they seem to indicate a compressed pod. The elongated seeds, winged at both ends, are of about equal length in both species, but in *speciosa* they are much wider,  $3\frac{1}{2}$  to 4 lines, and the wings have more or less rounded ends which terminate in a broad band of rather short hair; in *bignonioides* the seeds are only  $2\frac{1}{2}$  to 3 lines wide, with pointed wings, and their tips terminating in a long, pencil-shaped tuft of hair.

“Our tree is larger, of straighter growth, and, being a native of a more northern latitude, is harder than the south-eastern species; the wood of both is extremely durable, perhaps as much so as that of our red Cedar, and has the advantage over it of a much more rapid growth, and of possessing only a very thin layer (2 or 3 annual rings) of destructible sapwood. But of these qualities and of its adaptability to many important uses, others, and especially Mr. Barney in a recent pamphlet, have given a full account. It is already extensively planted in our Western prairie States, as especially along railroads, for which it is expected to furnish much needed timber in a comparatively short time.”—*American Agricultural Association’s Journal*.

#### WOODLAND WORK FOR AUGUST.

**Bark.**—The peeling and harvesting of Oak bark this season was accomplished quickly and in good order, the weather being more favourable for that work than has occurred for many years. The price of Oak bark was, however, not as satisfactory as one could have wished, the average price realised throughout the country being about 10s. a ton lower than last year; the increased use of other tanning materials every year tends to diminish the demand for bark. The stock of old bark, too, still standing in stacks and sheds throughout the country doubtless caused in some measure the general reduction in price of new bark. The value of Oak bark as a tanning material is, I fear, rapidly on the wane.

**Woods and Plantations.**—In these just now the principal work requiring attention is the clearance of all forest produce cut during the winter and spring months, and the repairing of any roads or rides damaged through the removal of timber, underwood, &c. Young plantations that are becoming too thick and crowded should

be thinned at once while hands generally can be better spared than later on when forest work is more varied and plentiful. In point of convenience, too, where game is preserved, any covers thinned at this season can be left quiet and undisturbed until cover shooting takes place, which is more particularly necessary in the case of outlying plantations adjoining arable lands, for as soon as harvest commences game of all kinds is driven into the covers, where it should there be allowed to remain in quietness until the shooting season. Gates, stiles, and all kinds of fences bounding woods, slopes, and plantations ought to be made perfectly secure against the inroads of cattle, sheep, &c. Those fences adjoining grazing lands should have special attention during hot weather, for cattle, when driven by insects, quickly find out weak places in hedges, and when one breaks through the whole herd or flock will surely follow, and, of course, can in a very short time do an immense amount of injury to young trees or underwood; and, besides, when once cattle get into a habit of trespassing into covers it is no easy matter to fence them out. Top off and fore-shorten branches and spray of trees that hang down too low over roads, rides, drives, footpaths, and gates. Where the branches of trees are inclined to over-arch roadways or gateways encourage a lofty, broad spread of branches by keeping the spray and smaller branches well trimmed up above the centre of the way, and allow the terminal spray to hang naturally down on the opposite side, that is, when one tree only forms the arch; of course when there is one tree or more on either side the ends of the branches must be shortened and not allowed to drop, but, rather on the other hand, to grow upwards so as to form a lofty arch. An easy, natural looking arch of branches over a gate or roadway is a pleasing and picturesque feature that should be oftener seen in woodland walks and drives than it is. One umbrageous tree (when growing close to a gate or road) is quite sufficient to form a beautiful shady arch if a little attention be directed to it occasionally.

**Lopping, Pruning, and Staking.**—Workmen, as a rule, are too prone generally when entrusted with the lopping of branches over roads to over-do such work; there are workmen, however, who possess a taste for pruning, and those are the men who should be entrusted with this particular branch of forestry. Such men I have known when once directed in the proper way gradually get their hands and eyes educated, so to speak, to the work, that it becomes a pleasure to masters and workmen when the annual turn of lopping and pruning is in progress, every year adding as it were to the beauty or charm of some particular tree, archway, or arbour of greenery. Let me not be understood to mean hard pruning and trimming into formal and fantastic shapes and figures; for such I have no fancy, and am glad that the taste for this style is becoming rare. Young trees in newly formed plantations should be gone over now, if not already done, to remove duplicate leading shoots and to foreshorten over-luxuriant side branches that are growing out of proportion in length and strength; all surplus stem shoots should also be rubbed off or cut away. Trees of last season’s planting that needed staking will require attention to see that the ties are secure and not too tight, as they so soon become so in the case of fast growing trees, particularly of the soft-wooded class; on the other hand, too, when stakes become loose, they often cause an abrasion of the bark of young trees by rubbing on the top of the stake through the action of the wind. The top of a tree stake should in all cases be sloped off from the side next the tree at a sharp angle, for even when a young tree is securely staked, the force of strong wind is apt to bend it over the top of the stake, and if neglected a season, the tree will probably be seriously damaged, and in some cases I have noticed trees utterly ruined from this cause alone. Relieve shrubs and other ornamental plants from the encroachment of rough weeds or undergrowth that is likely to interfere with their proper development. Root out Docks, Thistles, and



Nettles on or near rides and drives; indeed, anywhere they should receive no quarter. Young hedges should be kept clean by means of hoeing, or, by what is still better, hand-weeding; older hedges may be kept clean enough by cutting the weeds off with a hook and spreading the litter over the roots of the hedges, unless in the case of Docks and Thistles, or other bad seeding weeds, which should be exterminated by rooting out and burning. See that watercourses, culverts, and pipe drains underneath rides and drives are well cleared out in the proper order for carrying off a sudden flood of water. Clean and scour out open ditches and trenches and cut new ones, where Rushes and other aquatic weeds abound. Ground intended to be planted next season may now receive attention, whenever hands can be spared, by means of clearing, fencing, and cutting open ditches to drain wet places, and laying off surface water in low places.

**Nursery.**—A sharp look-out should now be kept on choice conifers for insects and their larvæ. This is about the time when, generally, they begin their work of destruction, and, what is most provoking, the leading shoots are most liable to be attacked, thus destroying the season's growth, and throwing the symmetry of the tree out of balance for perhaps two or three years; some trees, indeed, never regain a proper leader. The hoe should be kept going wherever weeds show themselves, but little difficulty will be found in destroying the weed crop so long as this scorching hot weather continues. This has been an unusually favourable season for the cleansing of foul ground. Any trees or shrubs that show signs of flagging or of backgoing should be well mulched with half-rotten manure, and a thorough watering should be given overhead occasionally; this is best done in very hot weather towards evening. Newly grafted trees should be gone over, and the ties slackened or removed, where necessary, and all shoots and buds growing on the stock should be cut or rubbed off. Any trees intended to be budded may now be operated on. Clean all superfluous shoots off the stems of young hard-wooded trees, lighten their heads when growing out of proportion to the strength of the stem, and if necessary stake them firmly, as they are liable to damage one another by wind-waving in the nursery rows. Rot pits of Haws and Holly berries should be well turned. Weed and compost heaps will be rendered valuable by mixing both with quicklime, reforming them into steep ridge-shaped mounds, so as to keep out wet. Dry, friable soil is most valuable in the nursery during wet winters and springs for covering the roots of young trees when planting is in progress and the ground is in a wet, sodden state. Attend to green crops by hoeing and thinning out the young plants. G. B.

**Cistus crispus.**—This is a very beautiful plant with large flowers of a very rich crimson-lake colour, borne erectly. It has a bushy habit, and is a great ornament on a rockery. — BROCKHURST.

**Myrtles in Cornwall.**—The note in THE GARDEN (p. 53) respecting Myrtles in the open air induced me to measure the height of the taller of a fine pair growing here on the south front of the mansion. It measured 24 ft. 3 in., and the other is only a trifle shorter. They suffered severely during the past winter, the tips of all the shoots being killed, but they are now once more mass of green, being studded over with young shoots. — JOHN C. TALLACK, *Prideaux Place, Padstow.*

**Spiræa Lindleyana.**—This fine shrub deserves all that is said of it (p. 78). Though a native of the Himalayas, it is not such a fastidious subject as regards soil and situation as might be imagined. Here, a clump of it about 10 ft., though growing in an exposed situation and in a soil that is neither deep nor rich, has survived every severe winter during the last thirty years,

or thereabout, and it never fails to flower with the utmost freedom. It is with us only showing panicles now, but will not be in flower for a fortnight at least. It is valuable on account of its late flowering habit. It never exceeds 5 ft. or 6 ft. in height here in Yorkshire. — J. S. W.

**Canadian Golden Willow.**—When living in Montreal I saw frequently in gardens a very beautiful tree, called by the Canadians "the Golden Willow." It was very like a common Willow in its manner of growth and the colour of the leaves, but the stems of the beautiful long sprays were a most beautiful golden colour. I have looked in Loudon, but cannot find it described. Can any of your readers tell me its botanical name? and also where it is to be had? as I am wanting one to contrast with a Copper Beech in a small shrubbery. I do not think "Golden" describes it sufficiently, it is such a lovely orange colour. — F. DUNLOP, *The Holmwood, Dorking, Surrey.*

**Hardiness of Fortune's Bamboo and Camellias.**—Were the merits of Fortune's Bamboo more generally known, it would, I feel sure, become popular. Twenty-six degrees of frost have not the power to dim its freshness. The wonderful hardiness of this plant, and its distinct manner of growth, should recommend it. A plant which passes unscathed such winters as the last seven may surely lay claim to be called hardy. Although we possess considerable variety of form amongst hardy evergreens, yet any addition to their number should be welcomed, especially when marked by such distinct characteristic features as the Bamboo. The past winter has also served to illustrate the perfect hardiness of the Camellia. I have lately remarked instances where, although such shrubs as the Euonymus have been browned and quite spoilt by frost, Camellias standing in their immediate vicinity show not the slightest trace of injury. Such winters as we have had do one good service—they test the powers of endurance of our trees, shrubs, and plants, to the extent of enabling us to know what may be depended on and what not. — J. C., *Byfleet.*

## THE INDOOR GARDEN.

### PLUMBAGO CAPENSIS AND ROSEA.

THESE two beautiful plants are well worth cultivating. *P. capensis* is a greenhouse plant; the other belongs to the stove. The flowers of both are peculiar in colour; indeed, I know of no other blue flower resembling *P. capensis*, and the colour of *P. rosea* is also distinct. The pale blue of *P. capensis* never fails to attract attention, and *rosea* would be equally popular were it oftener seen. Both are readily propagated from cuttings put in during any of the spring or summer months. The best are the little side shoots, 2 in. or 3 in. in length. Where propagating accommodation is not very good, the shoots may be drawn off with a heel, but in the majority of cases any kind of cutting will soon root in a light, sandy mixture, and with a little bottom heat. Very early in spring warmth must be given, but now they may be rooted in any close, moist place without bottom heat or being plunged at all. This particularly applies to *P. capensis*, and *P. rosea* may generally be rooted in the same box or pot. When once roots are formed the plants are easily managed, and will bear separating and repotting, although not a particle of soil may be attached to the young roots.

To have a succession of plants and bloom two batches of cuttings should be rooted in the year; one early in spring, the other about the present time. The first will produce flowers throughout the autumn, and the latter during winter. Than Plumbago flowers in winter nothing can be more acceptable, and having them at that season alone is ample recompense for any trouble taken in obtaining them. Cuttings of either kind rooted at the present time will produce plants which will flower during the winter. From first to last

the compost used for growing them in should consist of a good mixture of loam, leaf soil, half decayed manure, and plenty of sand. Many grow them in peat, but that cannot always be had, and so far as Plumbagos are concerned they do very well without it. From the cutting pots they may be transferred to 3-in. ones, and from them to 6 in. ones, and in these plants good enough for any purpose may be grown.

As soon as they have fairly begun to grow the shoots will run out and up quickly, but when dwarf bushy plants are wanted these must be frequently stopped a few inches above the pot. A warm pit is the best summer quarters for *P. rosea*, and a cold frame does for *P. capensis*. Being near the glass, plenty of air and water must be given them at this season. In autumn they do not require to be subjected to such hardy treatment, and to induce the blooms to open freely in winter a little forcing must be resorted to. Young plants rooted now, or previous to this, will show blooms long before winter, but if they are grown purposely for winter blooming no flower must be allowed to remain on until that season, and the more they are deprived of flower buds the more freely will they bloom when they do begin. When they have once flowered they may be rested for a little time and started into growth again, when they will soon flower a second time.

As wall and pillar plants Plumbagos are most useful; in our conservatory we have pillars 8 ft. high clothed with them, and when in bloom they are exceedingly beautiful. In this position much wood has annually to be cut out of them, and after flowering we cut every shoot into the old wood. In short, I may say that *P. capensis* may be treated as a Fuchsia, and *P. rosea* as a Clerodendron. CAMBRIAN.

### PALMS OF ELEGANT GROWTH.

TAKEN collectively Palms are in the front rank of plants possessing elegance of growth. They possess a wide variation in form and general character, from the immense spreading leaves of *Latanias* and *Sabals* to the tall slender-habited *Leopoldinas*, *Chamædoreas*, and *Geonomas*; although until comparatively recently we had not many in cultivation, our acquaintance with them being in a great measure confined to the few examples that were to be met with in the various botanical gardens and in the few private gardens. But within the last thirty years, plants remarkable for their foliage, be it large and bold, or the opposite slender and minutely subdivided, have come as much into favour with cultivators as those which produce handsome flowers. The smaller growing Palms, particularly such species as possess a distinct appearance, have been much sought after. Millions of these smaller growing kinds have been raised, and not a few that naturally attain a considerable size have also been cultivated, for a good many of the larger growing kinds are found so accommodating that they may be kept for a number of years within a manageable size by restricting their growth, which is done by confining the roots in small pots, and keeping them in a low temperature. This latter, even when carried to a far lower point than that of the countries to which they are indigenous, many Palms seem able to bear to a much greater extent than any other species of plants would. Of this, *Latania borbonica* is an example, although as its name implies a native of the Isle of Bourbon, and growing to a considerable size, yet it will not only live, but preserve a fresh, healthy appearance for several years in an ordinary living room, and only in a small pot.

We have nothing in the whole range of cultivated plants that by the form of growth and general character give such a beautiful effect when stood on a table in a room, as some of the species of Palms, such, for instance, as *Leopoldina pulchra*, better known as *Cocos Weddelliana*, *Chamædorea graminifolia*, *C. elegantissima*, and *Geonoma gracilis*, when not too large, say from 12 in. to 24 in. high, varied according to the size



of the room and other local circumstances. One of these, at least, the *Leopoldina*—perhaps the most general favourite, though only on account of its being better known than the others—will live and retain its fresh, healthy appearance through the winter very much cooler than many people suppose it would. I have seen two large specimens, each some 6 ft. high, after being kept through the whole of last winter in a Fern house, where the temperature was often down to 45°, did not suffer in the least, and are now growing just as well, but, of course, not so fast as they would if subjected to warmer usage. If this one beautiful species alone will succeed under such conditions it becomes a so much greater acquisition than it hitherto has been when confined to warm treatment, with occasionally doing duty on the dinner table whilst in a small state. If even these elegant Palms will only live for the warmer half of the year in a dwelling house very many people will not grudge the few shillings they cost, and no doubt the great numbers that have in recent years been raised from seed, and which have so much reduced their price, will lead to a still further increase in their production. One thing necessary to keep in view with these and most other plants, when submitted to cooler quarters for any length of time than they absolutely like is to be rather under than over potted. When soil is limited, the roots of heat-loving plants are invariably less liable to suffer through cold than if in a larger quantity of soil; and though from their nature, in being mostly moisture-loving subjects, they will not do to have the earth ever allowed to become dry, still when in cool quarters they must by no means be over watered. Another matter of importance is not on any account to place the plants in a draught; this is fatal to not a few room plants. Through disposition to benefit them through fresh air, they are frequently subject to a current near an open window. Such treatment often ends in killing them. A. Z.

**Glaziova bauhiniopsis**, a climbing plant in one of the stoves in the Edinburgh Botanic Gardens, would be as good, if not better, than *Ficus repens* or *mimosa* for covering walls. Its foliage is very pretty, and the plant forms discs which cling to the smoothest surface.—C. M.

**Tuberose under Cool Treatment.**—When I make up a hot bed for half hardy and tender annuals, say the beginning of April, I pot my Tuberose in 5 in. pots and plunge them in Cocoa-nut fibre refuse on the top of a portion of the hot bed. Growth soon commences, and hardly any water is required till the young leaves are 2 in. or 3 in. long, when I give a good soaking and never again allow them to approach the dry state; until the beginning of June they have the same treatment as regards air and warmth that the other things in the hot bed receive, after that time they are exposed day and night; they get the sun all day and have plentiful waterings overhead to keep down insects, and maintain the plunging material and surroundings cool and moist. Under this treatment they grow dwarf and sturdy with ample foliage, instead of being leggy, weak, and covered with green fly, as I have seen them when grown in a greenhouse. To-day July 21 one is all but in bloom and the others all showing their bloom spikes. I grow the variety called "Pearl."—S. L. BOURCHIER, *Great Crosby, near Liverpool*.

#### SEASONABLE WORK.

**Conservatory.**—With an abundance of free-growing plants including *Liliums*, *Fuchsias*, *Kalosanthes*, *Achimenes*, *Pelargoniums*, and tuberous *Begonias*, with a few graceful foliage plants rising above them this house may be kept very gay for some considerable time; indeed, with suitable structures at command, the *Begonias* and *Geraniums* may be had in bloom nearly all the year round, and under good management the more tender subjects may be succeeded by early batches of *Primulas*, *Cinerarias*, and other free-growing plants which delight in light rich soil and partial shade during the time they are making their growth. To secure fine plants they should be potted on before the roots

become bound, and a pit or frame facing the north will suit them better than a sunny aspect where shading is necessary. *Salvia splendens*, the old *Chrysanthemum frutescens*, still one of the best, and *Eupatoriums* now growing in the reserve borders will require copious watering and syringing after the sun is off them. Tree carnations will now be ready for the final shift into blooming pots of moderate size. The soil for these should be carefully hand-picked to free it from wire worm, and an open but sheltered situation in the open air where they can be plunged to the rim in ashes, while securing them from earthworms, will also induce the formation of short jointed sturdy growths from which good flowers may be expected. Another sowing of *Mignonette* must be made, and plants from former sowings shifted on will be found useful through the early part of the winter. The lights in this structure may now remain open by night and day, and good syringing where water can be applied without injury to the flowers will tend to health, cleanliness, and freedom from insects. W. COLEMAN.

### THE GARDEN FLORA:

#### PLATE CCXCV.—IRIS RETICULATA (XIPHION RETICULATUM) OR NETTED IRIS.

This little bulbous Iris has long been known in our gardens, having been introduced apparently about 1821; but it is only within the last few years that it has been widely grown, and even now deserves to be more abundantly cultivated than it is. Its name was given to it on account of the peculiar netted structure of the outer tunic of the bulb. The plant illustrates in an interesting manner how a genus in its several species adapts itself to varying circumstances. In the structure of its flower and in the main characters of its bulb it is exceedingly like the Spanish Iris (*Iris Xiphion*, *Xiphion vulgare*); it is indeed a true *Xiphion*. But while the Spanish Iris flowers at midsummer, this little relative has, like the *Crocus*, learnt to flower in the earliest days of spring, or indeed in the latter days of winter, and its features have become modified in accordance with its new habits. While the snow is still on the ground, in January, or even earlier, the leaves begin to shoot, and while these are only a few inches high, the bud opens out to the pale wintry sun its beauty of violet and gold. The leaves are singular in being four-angled, like those of *Iris tuberosa*, to which, however, it is by no means closely related. After the flower has faded the erect narrow leaves grow apace, attaining 1 ft. or more in height, and, as in the *Crocus*, the ripe ovary is in due time thrust upwards from the soil. This little treasure is indeed the Iris companion of the *Crocuses*, and those who have seen large clumps of it growing in some sheltered, but sunny, spot in the bright but gusty days of February or March, may well wish for the time when its netted bulbs shall be as plentiful as the *Crocus* corms.

Two very distinct forms are known. One, the typical form depicted in the plate, may be recognised by its deep dark violet colour, and the brightness of the yellow mark on the blade of the fall; the tube, moreover, of the flower always shows out above the spathe valves. This is the kind originally described by Bieberstein, and comes to us from some parts of the Caucasus and from Palestine. The other form is the one known as the variety *Krelagei*, attention having first been called to it by the well-known horticulturist, *Krelage*. It may be recognised by its flowers being of a purple or plum colour, with the yellow marking less vivid, the tube rising but little or not at all above the spathe valves, and the whole flower smaller, with the divisions of the perianth shorter and broader. This kind seems to be more abundant than the typical one, and is represented in many of the illustrations as *Iris reticulata*. It is the form which is common in the Caucasus, the Transcaucasus, and Persia. As far as my experience goes, this kind is

the one most frequently supplied by Dutch and German firms.

It is a matter of some little importance from a gardening point of view to distinguish between the type and its variety, for the former is not only far more beautiful than the latter—its deep dark violet and lustrous yellow producing an exquisite effect, a long way surpassing the duller purple of *Krelagei*—but it possesses a delightful violet fragrance which the latter is absolutely without. I hear that in the Caucasus this little *Iris* has been found sporting in colours, and it is worthy of note that Bieberstein in his original description of it speaks of the flower as being as large as that of *Iris Xiphion*. All the examples I have hitherto seen have been distinctly smaller than the ordinary specimens of the Spanish *Iris*, but it is possible that a large-flowered variety exists. In any case collectors would do well to search for new supplies of this delightful bulb from new quarters.

**Culture and Position.**—Concerning its culture very little need be said. It is absolutely hardy, and may be planted wherever the *Crocus* is planted. A sheltered spot is, however, advisable, in order that its tall narrow leaves may, after flowering is over, flourish protected from the wind—a spot sheltered, but sunny. It flourishes in sandy soil; it thrives in peat, which is dry and warm in summer; it does well in common garden ground; and I know a gentleman with whom it takes kindly to in a stiff heavy clay, so that it does not seem particular about soil. Sometimes, however, it turns awkward, and refuses to grow, and in damp places the bulbs will rot in summer. Since the flowers come before the leaves grow tall it makes a good pot plant, and a well grown clump of the fragrant sort is a charming addition to the Christmas table. Some care, however, is needed to make it bloom more than one year in pots, and I would advise those who cannot give it the requisite attention to harden off the pot plant when it has flowered and plant it in the open, seeking a fresh supply for the next winter from some older clump, or from bought bulbs. F.

[Our plate is from a drawing of a plant that has grown for years in Mr. Robert Parker's nursery at Tooting in the open border, the soil being a sandy loam. In this position it flowers every spring as regularly as a *Crocus*.]

#### ARGEMONE AND OTHER FLOWERS.

You mention that *Argemone grandiflora* is said to be a true perennial, but that you have not seen it live more than a year. I have now in my garden here a plant which I raised from seed in the spring of 1880. It grew and flowered in a pot, and I kept it in a cold frame during the winter. I planted it out in the open border in the spring of this year, and it is now showing bloom. I should mention that two other plants grown and left in the open ground perished in the winter. As my plant kept in a cold frame survived, it is possible that in some soils and localities it would live out-of-doors. I think it is a striking and handsome plant, the foliage being very beautiful, and the blossom somewhat suggestive of *Anemone Honorine Joubert*, but of a more delicate texture. Another plant which I raised from seed last year, and which survived the winter in the open ground, is *Gaillardia Loselli*, which is now just opening its handsome blooms. Campanulas do well here, too. A tiny plant I obtained from Messrs. Clibran in the spring of 1880 of a kind called by them *turbinata* *Hendersoni* now covers a large space on a little rockery, and has been for some weeks past a mass of large French grey blooms. *Lilium auratum* bloomed in the open border with me early this month, and *Lilium longiflorum* is just over.

Brixton.

WALTER J. TODD.











## THE FRUIT CROPS.

## METROPOLITAN AND SOUTH-EASTERN DIVISION.

**Aldermaston Court.**—Fruit prospects now, compared with those of spring, when every tree was covered from top to bottom with blossom, are somewhat disappointing, especially as regards Apples, Pears, and Plums. True, some trees (especially Apples) are bearing full crops, but in many instances that is not the case. Small fruits are very abundant and fine in quality. Currants of various sorts are excellent. Raspberries and Strawberries are smaller than usual on light soil, the dry hot weather having been almost too much for them. Apricots are rather a light crop, but clean. A good protection for these is Heather (of which we have abundance), pulled up, cut into convenient lengths, and fixed in the form of very small bunches behind the wires all over the tree, letting the tops spread over the fruit-buds; the operation is safest done before the buds are open, as they are not then so readily knocked off. We leave this covering on till the leaves afford sufficient protection for the young fruit. We have ceased to grow Peaches out-of-doors; their room, we hope, will be better occupied by some good cordon Pears lately planted. Walnuts are a heavy crop in most places.—ALEXANDER GALT.

**Eridge Castle, Tunbridge Wells.**—Apricots of some kinds are a full crop; Apples an excellent crop; Pears quite an average one; Peaches not quite up to the mark; Nuts excellent; Strawberries plentiful and good; Raspberries good—best in the shade; Cherries quite an average crop; Plums, some trees full, others not so; Figs scarce, trees suffered during the winter; Currants very good. On the whole it may be said to be a good fruit year, the very dry spring having been favourable to the blossom setting. We are 400 ft. above sea level, and so escape spring and autumn frosts.—JOSEPH RUST.

**Cobham Hall, Gravesend.**—Among Apples, Keswick and Manks Codlin are heavy crops. Cellini Pippins are of the best of bearers, a fair crop; other sorts average. Apricots, half a crop, but there are not many grown in this neighbourhood. Cherries, consisting of May Duke, Flemish, Kentish, and Morello, are fair crops; most other sorts not an average crop. Currants are a fair crop, both Black, Red, and White, but I am afraid that a great many of the Black Naples will drop if we don't have rain shortly. Nuts are a fair crop. Strawberries, a good crop, but soon over. Most of the land about here is either chalk or gravel, which requires a good shower of rain every week to prolong the gathering season. Peaches and Nectarines are good crops, but not much grown about here. Pears are a fair crop in most places, but far short of what one would have expected from the great quantity of blossom the trees bore. Plums, consisting of Green Gage, Prince of Wales, and Victorias, are a full crop; other sorts rather under the average.—FRED. DEWSBERRY.

**Canon Hill, Maidenhead.**—Peaches and Nectarines are a good crop; Apricots, half a crop; Apples, plentiful; Pears and Plums, good crops; Cherries (both kinds), good; Strawberries, good, but, owing to the drought and our light gravelly soil, were not long in season; Raspberries, very good. Bush fruits of all kinds are extremely plentiful. Filberts, above the average; Figs, scarce. Our choicest fruits are protected in spring by means of canvas blinds, to the use of which I mainly attribute the crops we get.—HENRY E. GRIBBLE.

**Coombe, Kingston.**—Apples are a good crop. Pears about half a crop, but promise to be very fine. Of Plums we have none at all. Cherries about half a crop; Frogmore, Early Bigarreau, and Governor Wood do the best. Peaches and Apricots very heavy crops. Strawberries only two-thirds of crop, and very soon over. Red, White and Black Currants good crops. Raspberries a thin crop and small. Gooseberries a thin crop,

but no caterpillar. Soil a sandy clay; no lime in it. Rhododendrons thrive well here in the common garden soil. Our gardens are well sheltered from the north and east, and we have abundance of water in the subsoil.—W. DENNING.

**Albury, Guildford.**—Of Apricots we have about half a crop; Apples, an average crop; such kinds as King of the Pippins, Blenheim Orange, Scarlet Nonpareil, Juneating, Lord Suffield, Pearmain, Manks Codlin, Hawthornden, Baldwin, Besspool, Court of Wick, and Irish Peach are all heavily cropped; Pears are a fair crop; Plums and Cherries an average crop; Peaches and Nectarines, both in and out of the houses, good; wall trees, suffering from the dry weather; Gooseberries, Black, Red, and White Currants, very heavy crops; Strawberries, consisting of such kinds as Keen's Seedling, Sir J. Paxton, President, British Queen, Frogmore Late Pine, Myatt's Eliza, Carolina Superba, all very good; Raspberries are a good crop, but want rain; Walnuts, Filberts, and Cobs very thin.—WILLIAM KEMP.

**Strathfieldsaye, Winchfield.**—Apples here are a fair crop, and promise to be finer than in ordinary years. Our soil being exceedingly heavy, we only get first-rate Apples in seasons when we have a period of hot dry weather. Keswick Codlin, Duchess of Oldenburg, King of the Pippins, Wellington, Northern Greening, and Cox's Orange Pippin are by far the most certain bearers, and probably among the very best for heavy soils. Pears bloomed profusely and gave promise of a full crop until April 21, when we had 11° of frost, which utterly destroyed the bloom on standards. We have, however, a fair crop on walls, where they were protected by Bracken fronds and Yew boughs. Althorpe Crassane, Williams' Bon Chrétien, Marie Louise, and Doyenné d'Esperen seem to suffer less from frost when in bloom than most others. Peaches and Nectarines are a full crop where protected with canvas screens; Apricots are plentiful, but unfortunately many branches full of fruit have lately died; Plums and Cherries are thin, although they bloomed profusely, and seem to have set well; Gooseberries, Raspberries, and Currants have been very fine crops, with quality much above the average. Strawberries gave promise of a large crop, but the intense heat which has so long prevailed fairly dried up all but the earliest fruit.—JAS. BELL.

**Easthampstead Park.**—In consequence of a sharp frost (7°) which we had on the 11th of May, our fruit crops are all under average except Currants. There is a thin sprinkling of Apples on trees such as Keswick Codlin, Court Pendu Plat, Hawthornden, Golden Noble, and Cox's Pomona. Apricots never do well here. Cherries, too, are thin. Gooseberries were good until cut up by the frost. Nectarines and Peaches are never worth the labour bestowed on them on open walls, but under glass they are a very heavy crop. Pears were destroyed by the frost in May. Plums are a thin crop; Washington and Green Gage are the best. Raspberries and Strawberries also suffered, and now the intense heat has made the crop a short one. The thermometer has stood at 80° in the shade, and 112° on a hedge 4 ft. above the ground—not against a wall, which gives a false maximum.

Potatoes, up to this date, could not be more promising, but they are now drying up like the rest of vegetation. Our soil is poor, on a deep bed of clay. We do not have much natural protection, consequently spring frosts are destructive in our locality.—N. SINCLAIR.

**Highclere.**—Currants, Gooseberries, and Raspberries plentiful; Strawberries extra fine—President, Sir Joseph Paxton, and Vicomtesse Héricart de Thury are good trustworthy sorts here; Apples, heavy crops—Blenheim Orange, Hawthornden, Norfolk Beaufin, Newtown Pippin, King of the Pippins, Keswick Codlin, and Golden Pippin do well with us; of Pears, some sorts, such as Passe Colmar, Beurre d'Amanlis, Marie Louise, Jargonelle, Williams' Bon Chrétien,

Beurre de Capiaumont, Winter Nelis, Bergamot d'Esperen, and Easter Beurré are bearing abundant crops; of Plums we have very few—Early Prolific and Denyer's Victoria are the best here this season; of Peaches and Apricots we have not many outside—our Peach trees have suffered much from the frost of the past two winters; Cherries here are partial crops; Figs, not many—the young wood was very much injured by the frost of last winter. The greatest portion of the above are growing in heavy soil on a substratum of clay. S. ROSS.

**Idsworth, Horndean.**—Fruit prospects were never brighter than last spring, but the severe east winds, coupled with drought and frosty nights, were more than the tender blooms could bear. Of Apples we have scarcely an average crop. The Codlin varieties still do best, such as Lord Suffield, Manks, and Keswick. We have good crops of Deux Ans, and fair sprinklings of Wellington. Pears will not be half a crop; sorts that are doing best are Duchesse d'Angoulême, Knight's Monarch, Beurré d'Aremberg, Glou Morceau, Ne Plu. Meuris, Hacon's Incomparable, Duc de Orleans, and Williams' Bon Chrétien. Maréchal de la Cour is fruiting thinly this season, the first time for four years. Of Cherries we have very good crops, especially on standard trees. Plums, not half a crop; the best are Green Gage, Red Gage, Coc's Golden Drop, and Victorias. Damsons will be an average crop. Figs, almost none; the bearing wood suffered severely last winter. Raspberries are a good crop, but the continued heat and drought tell against them. Gooseberries are a good crop, but it has been one continued battle with the caterpillars; where the latter have not been kept under the trees are entirely defoliated. Soot and lime helps to keep them down if put on early enough, but hand-picking and Hellebore powder are the most effectual remedies. Currants of all kinds are good crops, Quinces and Medlars the same. Filberts and other Nuts thin; Walnuts vary—perhaps half a crop. As regards protection, we don't use any; the gardens are tolerably well protected by plantations, and, being 300 ft. above the sea, generally escape late frosts. The worst thing with which we have to contend is the soil, which is mostly clay and flints, resting on chalk. It takes years to get it into a workable condition. Vegetables generally do fairly well when once started, but fruit trees canker very much, and look quite venerable with Moss. I may state that Apricots are not much grown in this part, and Peaches and Nectarines do best under glass, but this season there are some good crops of Peaches and Nectarines out-of-doors in the neighbourhood.—N. FULLER.

**Shardeloes, Amersham.**—Of Peaches and Nectarines we have fine crops, the best we have had for years, and the trees generally look remarkably well; Pears are a grand crop; Apricots are very poor here, the Moor Park kind losing its branches so continually; Plums are not so plentiful as in some years, but generally a fair average crop; Figs were much injured by the late severe winter; although thickly covered with furze, we have only a few, but the trees are gradually improving. We always cover our Peaches and Nectarines with nets during the spring, and Apricots with Beech boughs. Cherries on walls a fine crop; in the orchard, which lies in a hollow, scarcely any, but on the hills there is a fine crop generally; Apples more plentiful on high ground than in the valleys; bush fruit of all sorts very fine, and Strawberries remarkably good and plentiful; Filberts also are a fine crop; Walnuts, like the Apples good, only on the hills. The character of the soil is generally light, with a great deal of flint in it. We find the Royal George Peach as useful as any, and Noblesse and Walburton Admirable the best for late crops.—THOS. BAILEY.

**Southgate, Middlesex.**—The fruit crops in this neighbourhood collectively are better this season than they were last and the preceding years, but again are far from good, especially Apples, which are much below an average; many



of the dessert varieties that are held most in favour are more partial in cropping this year than I recollect to have seen them; in a few places they are bearing fairly, but in the majority of gardens all but a failure, the kinds that have anything approaching a crop being the hardiest culinary sorts, such as Keswick Codlin, Manks Codlin, Lord Suffield, Wellington, Cellini, Ecklinville, and Yorkshire Greening. Apricots are nearly a total failure. Peaches much better generally than they were the last two seasons, the fruit looking healthy and promising where the trees receive a fair amount of attention. Pears are thin generally on standards and espaliers, but better on walls. Plums a moderate crop, mostly confined to the freest bearing sorts like Victoria. Cherries, a fair crop, the fruit fine in most cases. Strawberries, which ordinarily succeed well in this locality, if anywhere, have not yielded more than half what they usually do, and were very soon over. Raspberries, a fair crop generally. Gooseberries and Currants sufficient, and fine in quality. Nuts, not many grown, but where they do exist mostly very thin. —T. BAINES.

#### SOUTH MIDLAND DIVISION.

**Mentmore.**—Apples and Pears in low-lying orchards are almost a failure, while on higher ground they are abundant. Small fruits have been an excellent crop, but mostly small. Of Walnuts we have none on trees in a southern exposure, while on trees exposed to the north there is a very fine crop, the bunches of fruit consisting of as many as sixteen and seventeen in a cluster. Filberts are a fine crop. Plums and Damsons are grown extensively in this neighbourhood; in some orchards they are almost a failure, in others a fine crop; many are now falling off owing to the heat and dry weather. Wherever the trees are sheltered from the east winds either by large Elms or higher ground the crops are invariably good. About half the gardens here are something like 600 ft. above sea level, the other half from 450 ft. to 500 ft. All our trees on the higher ground are bearing good and fine crops, while on the lower parts the crops are almost a failure, owing to east winds and spring frost and damp. It would be interesting to know if other districts are affected in the same manner. Here the effect of cultivation is most marked. —JAMES SMITH.

**Moor Park, Rickmansworth.**—Apples here on most trees are a fair crop; on others a heavy crop. Pears on walls a full crop; on pyramids and trained trees partial. Apricots on all established trees are heavy crops. Plums under the average; few trees heavily cropped. Damsons good. Peaches and Nectarines fair. Strawberries abundant and fine, as are also Cherries. Gooseberries and Currants heavy crops. Raspberries plentiful, but fruit small. —J. C. MUNDELL.

**Wycombe Abbey.**—With the exception of Apricots, all kinds of fruit here are plentiful, and such as have reached maturity are excellent in quality. In the way of Apples for culinary purposes, the sorts we select for coming into use at the earliest period comprise those belonging to the Codlin section, and include the old Keswick and the newer variety White Transparent, Lord Suffield and its compeer Lord Grosvenor. As a successional crop to these we prefer out of numerous other kinds, Lord Derby, Emperor Alexander, Round Winter Nonsuch, Ecklinville Seedling, Peasgood Nonsuch, New Hawthornden, Golden Noble, Mère de Menage, Beauty of Kent, Nelson's Glory, while for the latest and longest keepers we select Kentish Filbasket, Alfriston, Rosemary Russet, and Annie Elizabeth. These, with Bringewood Pippin and Wellington, the two latest and best keepers with which I am acquainted, constitute varieties fit for any garden. Amongst dessert sorts, the old Red Quarrenden and the White and Red Juneating and the newer sort, Worcester Pearmain, which comes in at the same season, are the most useful as early kinds. For subsequent periods, in point of quality no kinds surpass the Ribston Pippin, Margil, Cox's Orange and

Kerry Pippins, and Blenheim Orange, and for a long keeper Cockle's Pippin is unrivalled in this section; and other kinds, as the Golden Russet, Claygate, and Adams' Pearmain, King of the Pippins, Court Pendu Plat, Sturmer, and Fearn's Pippins, may be noticed as being in general good and excellent sorts. Our markets are so abundantly supplied with American Apples now as to demand the attention of English growers as to whether or not those kinds which yield an early supply are not likely in the future to be most profitable. If so, large early kinds as those just enumerated should predominate extensively amongst the many delicious kinds of Pears which we possess. It may not be out of place here to point out such sterling kinds for cultivation on walls as Louise Bonne of Jersey, Marie Louise, Pitmaston and Duchesse d'Angoulême, Doyenne du Comice, and Van Mons Leon le Clerc. These varieties should be planted proportionally more extensively than most other kinds, the best of which here include Williams' Bon Chrétien, Beurre de Capiaumont, B. Rance, B. Bose, Fondante d'Automne, Winter Nelis, Glou Morceau, Beurre Bachelier, Passe Colmar, Knight's Monarch, and Josephine de Malines. In connection with out-of-door fruits, it may not be amiss to record the fact that we have this day (July 18) gathered fruit of Early Beatrice Peach in good condition here. —G. T. MILES.

**Dropmore.**—Apples here are a very heavy crop; Peaches and Nectarines, light; Strawberries, Currants, Gooseberries, and Plums, heavy crops; Apricots and Pears, light; Cherries (in places), good; Walnuts, very good; Raspberries, good; Nuts, light. Taking crops in general, they are the best we have had for many seasons. Apples very heavy, the branches already breaking down with the weight of fruit.

The Potato crop never looked better, not the least disease being apparent, and they are yielding well. The soil here is chiefly light, the subsoil a rock of red gravel, and in some districts chalk abounds, cropping out quite at the surface. —P. FROST.

**Panshanger.**—Fruit crops here and in the surrounding neighbourhood are generally good, with the exception of Apricots and Pears. Apricots are thin, owing to the deficiency of bloom, the result of unripened wood. The trees are, however, now making fine healthy growth, and promise to recover themselves. Pears when in bloom were much injured by frost, consequently they are only a partial crop. Apples, Plums, and Cherries are good, but Cherries are rather small. Gooseberries and other bush fruits are bearing heavy and fine crops. Strawberries abundant and excellent, but their season was short, owing to the hot weather and our light gravelly soil.

Potato crops, both early and late, are looking well; the earlier sorts, which we are lifting for present use, are excellent as regards quantity, size, and quality, and we have not yet seen any symptoms of disease. —RICHARD RUFFETT.

**Castle Ashby.**—Fruit crops in this neighbourhood are again as inferior as last year with a few exceptions. There is almost a total absence of Apples; the trees were well bloomed this year, and promised at one time to yield satisfactory crops, but the blooms were destroyed by the frost, which set in just as they opened. Of Pears there are a few on walls, also on pyramids and espaliers; the kinds most prolific are, Louise Bonne of Jersey, Williams' Bon Chrétien, Gratioli of Jersey, Summer Beurre d'Aremburg, Zephirin Gregoire, and Beurre de Capiaumont; these generally produce an average crop. Of Plums we have a moderate sprinkling on the walls, but none at all on standards. We have only a few dozen Apricots; although well covered during blooming time, we lost the very scanty crop of bloom which they bore. The trees are not at all in a satisfactory state of health; they are now just beginning to grow out of the apparent paralytic condition brought about by the excessively cold winter. I fear there are many similar cases to our own in other gardens, especially as regards Apricots. Peaches and Nectarines on the walls

thin, and the trees are not making satisfactory growth; crops are abundant under glass without any heating power whatever. Of Cherries we have now small fruits moderately good, but not heavy crops. Strawberries suffered much in the winter, some of the kinds being entirely killed. Raspberries are better than they have been for several years. Cobnuts are scarce; Walnuts plentiful. This is a Walnut-growing locality.

Potatoes, I am glad to say, are looking remarkably well this season, and, as yet, quite free from disease. —GEORGE BEECH.

**Blenheim, Oxon.**—Fruit prospects are better this year than they have been for at least four seasons, though not nearly so good as we were at one time led to expect at the flowering period. The best bearing Apples are Stirling Castle, Ecklinville, Hawthornden, Keswick, Lord Suffield, Cellini, Cox's Orange, Kerry Pippin, Dumelow's Seedling, and Blenheim Pippin. Pears—amongst the best are Pitmaston Duchess, Glou Morceau, Jargonelle, Bon Chrétien, Marie Louise, and Beurré d'Amanlis. Peaches and Nectarines a fair crop, but trees suffering from spider and drought; Apricots, where protected by Parham's glass wall coping and three thicknesses of herring netting, have a fine crop; the trees are very healthy, and there are few dying branches, but where not protected, there are no fruit, and many large branches dying. Is not this protection of the young foliage during the months of April and May an antidote for this disease? Plums (Damsons excepted) have good crops; Cherries, quite an average crop, Morellos on standards being especially so; Strawberries promised an immense crop, but after one gathering the fruits shrivelled from the intense heat and drought. Filberts and Walnuts are heavy crops; bush fruits, abundant and good. Our soil is a brashy limestone. —WILLIAM CRUMP.

**Burghley.**—Of Peaches we have a first rate crop, and the same may be said of Nectarines, and the trees are healthy; Pears are scarcely an average crop, but the fruit is good and clean; Apples are a better crop than we have had for years past; of Plums we have scarcely any, Green Gages are the best crop; no Victorias; of Figs we have none whatever, the trees were killed last winter; Strawberries are an enormous crop, and Gooseberries and Currants are abundant; Quinces and Medlars both under average. —R. GILBERT.

#### WEST MIDLAND DIVISION.

**Tortworth Court.**—I never remember seeing the Peach and Nectarine crop so promising as this year. The trees are perfect as regards health, and are swelling off a very heavy crop, after much labour being expended in thinning, and all this without the slightest protection at any time, either in the shape of coping or covering. Apricots also are fine; old trees that have not borne a fruit for years are now carrying a fair average crop. They were not protected, and are apparently free from gumming this year. Cherries are abundant and fine, both on walls and pyramids. Morellos suffered somewhat early in the season from black fly, but they are free from it now, and are bearing a full average crop. Figs.—Trees grown as bushes were killed by the severe winter, but those on walls stood better, and are now showing a few fruits, but of little value. Pears on walls are abundant, irrespective of sorts and position. All alike are loaded with fruit; that on pyramids, however, is very partial. Plums are quite an average crop and good, particularly the season standards. Apples are very scarce; indeed, much more so than last year. Cider fruit also is scarce; the trees bloomed well, but the blossoms dropped off. Strawberries are abundant, and good both in quality and quantity. Raspberries are also abundant and good. Red and Black Currants are very much over the average, and finishing grandly. Gooseberries very abundant and very fine. The caterpillar attacked the trees in strong force, but with timely hand-pickings we have again saved our fruit and bushes. Medlars are



plentiful, but good Quinces scarce. Filberts, Cobnuts, and Walnuts are full average crops.

Potatoes of all kinds are very promising every way, and there are no signs of disease at present.—THOMAS SHINGLES.

**Witley Court.**—In this neighbourhood a few isolated orchards may be found bearing average crops when sheltered, but this is by no means general, and the loss of the Apple crop is of serious importance in localities like this where Apples are largely grown, and where so many mainly depend on them for subsistence. Many of the orchards show unmistakable signs of having been crippled by the recent severe winters, and doubtless from this exhaustion failures have arisen more than from actual frost. The bloom, though plentiful, was weak, and excessive floriferousness is by no means a sure precursor of an abundant yield of fruit. Apples which are bearing moderate crops are the Ecklinville, Malster, King of the Pippins, Baxter's Seedling, Kerry Pippin, Scarlet Pearmain, and Summer Golden Pippin. Pears bloomed but irregularly, some sorts profusely, whilst others but thinly, and the crop is a very small one. Upon walls Marie Louise carries by far the heaviest crop, and also in the form of standards or bushes, Williams' Bon Chrétien is the heaviest cropped. Pitmaston Duchess is also bearing well. Hayshe's Victoria, Maréchal de la Cour, Beurré Hardy, Passe Colmar, Beurré Bosc, Bergamot d'Esperen, and Seckel are amongst the heaviest cropped Pears. Cherries are a very partial crop; in some orchards they are fairly good, whilst in others there are hardly any. The Kentish and Morello are both bearing heavy crops. Plums are generally a moderately good crop—that famous sort Victoria even a heavy crop. Purple Gage, Belgian Purple, Golden Drop, and Jefferson are also heavily cropped, and the same remark applies to Damsons. Peaches and Nectarines are heavily cropped, and are making good growth, having suffered less from the weather than during the previous two seasons. Small fruits of all kinds are abundant. Strawberries bore good crops, but they were of short duration, owing to the dry weather. The best sorts were Sir J. Paxton, Keen's Seedling, Vicomtesse Hélicart de Thury, British Queen, Dr. Hogg, President, and Lucas. Gooseberries are carrying heavy crops, and so are Currants of all kinds. Raspberries are an average crop. Walnuts a large crop. Filberts a thin crop.

Potato crops are looking well, and, so far, are free from disease.—GEO. WESTLAND.

**Madresfield Court.**—The sharp frost on the 10th May did great damage to fruit crops in all low-lying districts. Apples, which bloomed well, are not more than one-fourth of a crop. Pears seem to have escaped better, and in many places are abundant, particularly on walls. Of Apricots there are but few fruit. Peaches and Nectarines are generally good hereabouts. Plums and Damsons very partial, many large plantations being comparatively barren, while in others the trees are heavily laden; wall trees showed but little bloom, and the crop is, in consequence, very short. Cherries are fairly good; Morellos on walls a heavy crop. Figs were nearly all killed to the ground by the severe frost of last winter. Bush fruits, such as Currants, Gooseberries, and Raspberries, are clean and abundant. Strawberries, a short crop, being much injured by frost in May. Of Nuts and Filberts we have very few, and Walnuts none.

Potato crops extremely healthy, and should the present fine weather continue, a large proportion of early kinds will be housed in good condition.—WILLIAM COX.

**Eastnor Castle.**—Owing to the long prevalence of east winds and severe spring frosts which continued up to the 9th of June, when we registered 4°, the better kinds of fruit are by no means plentiful in this district. Apples, at one time promising, are partial. Keswick Codlin, Lord Suffield, Lord Grosvenor (a kind which never fails), Golden White Pearmain, Hawthornden, and Emperor Alexander are carrying heavy

crops. Kentish Beauty (a useful kitchen Apple), Irish Peach, and Herefordshire Pearmain are also fairly good. Pears on walls are a fair crop. Marie Louise, Pitmaston Duchesse, Williams' Bon Chrétien, Knight's Monarch, Passe Colmar, and Josephine de Malines are perhaps the best. Bushes and standards are a failure. Apricots on cottage walls and in some gardens are a fair crop. Plums, at one time very promising, are a thin crop. The Pershore, of which many thousands are grown in this and the adjoining county of Worcester, are a failure. Dessert kinds seem to have suffered as much on walls as they have on standards. Prince of Wales, Drap d'Or, and Victoria on north walls are fairly good. Cherries on walls are a good half crop, and fine in quality. Morellos much blighted, and trees not looking well. Peaches and Nectarines, a full crop, and the trees are clean and healthy. Bellegarde, Barrington, Violette Hâtive, Royal George, Alexandra Noblesse, Stirling Castle, Grosse Mignonne, and Sulhamstead require much thinning. Early Louise will be first to ripen. Currants and Gooseberries, plentiful; Raspberries, a fair crop of good fruit. Strawberries, a good average crop of fine quality. Vicomtesse Hélicart de Thury, Sir Joseph Paxton, and President have been very good, but the latter suffers so much from mildew both indoors and in the open ground that we think of reducing our stock. For late crops Oxonian and the old Elton Pine are unsurpassed. The last named is still one of the best for preserving. Nuts and Figs are a failure. Many fine trees of Brown Turkey and the hardy old Brunswick, although well protected on good walls, have been killed to the ground. Walnuts in good situations are an abundant crop.

**POTATOES.**—Up to the present date Potatoes, both early and late, are looking all that can be desired, and quite free from disease. Perhaps a little more rain might have improved the yield, but the quality being so good we are hopeful that the best Potato harvest of the last seven years is now approaching. For early use we grow Veitch's Ashleaf and Mona's Pride, Schoolmaster and Lapstone for succession, Champion for use after Christmas, and Magnum Bonum, which eats well off the limestone brash, carries us to the end of the season.—W. COLEMAN.

**Blithfield, Rugeley.**—Fruit crops are very fine here this season. The dry weather suits our soil, which is heavy with mainly subsoil. Dr. Hogg, British Queen, and Keen's Seedling Strawberries are very fine, and I consider them the best sorts for this neighbourhood. Pears and Apples are looking very promising. Apricots are scarce in the gardens here, but plentiful on the ends of the cottages in this locality, and fruit and vegetables are looking better here than they have for twenty years.—THOS. BANNERMAN.

**Alton Towers.**—Crops of all kinds are generally good in this locality, especially small fruits. Strawberries are abundant and very fine; Gooseberries, Currants, and Raspberries the same. Damsons and other Plums plentiful. Apples, a good crop, but Pears only an average one. Nuts, under the average; Peaches very good; Apricots, fairly good; Cherries, abundant and good; Bilberries, in the woods, abundant and remarkably fine. Potatoes, early and late, never looked better; there is no trace whatever of disease in early sorts which we have been digging for daily use.—T. H. RABONE.

**Kingscote Park, Gloucester.**—Apples here are an average crop; Pears rather under the average, but both trees and fruit look healthy. Plums are an average crop, and so are Peaches. Cherries, an average crop. Figs are tolerably good here, but very few are grown in the neighbourhood. Strawberries have been over the average, and very fine. Raspberries are a good average crop, and the same may be said of both Black and Red Currants; and Gooseberries are an abundant crop, but the caterpillars have been very destructive. It is also troublesome among the Red Currants. Our soil here is of a light character, resting on the rock.—SAMUEL WATHEN.

**Attingham, Shrewsbury.**—Apples are very thin, except Pearmain, Keswick Codlin, Hawthornden, and Norfolk Beefing, which are bearing average crops. Apricots are under the average, except the Kaisha, which is bearing a full crop. Moor Park was much injured by the severe winter, which killed most of the fruit buds. Figs were killed to the ground. Pears are also thin; the best are Marie Louise, Beurré de Capiaumont, Seckle, and Duchesse d'Angoulême. Plums and Damsons are thin; in some cases Victoria is a full crop. Morello Cherries are a good crop; other kinds under the average. Nuts and Walnuts average crops. Gooseberries, Currants, Strawberries, and Raspberries good crops. The soil in these gardens is a good loam mixed with gravel, well sheltered by a wood on the east side.—GEO. PEARSON.

#### NORTH MIDLAND DIVISION.

**Thoresby, Ollerton.**—In spring there was abundant promise of heavy fruit crops this year. Now Apricots have not borne half a crop; they were the only trees that did not flower abundantly in spring. Some sorts of Apples are good crops, but many are dropping off. Pears set well, but many when they should begin to swell drop off; when in flower many of the blooms looked small and weak. Beurré Diel, Easter Beurré, Williams' Bon Chrétien, Louise Bonne of Jersey, Thompson's, Marie Louise, Beurré Superfin, Catinka, Matthews' Eliza, and Beurré d'Aremberg are amongst our most regular cropping sorts. Plums are going to be very scarce. Dessert kinds were full of flower, but quantities never set, and many that did dropped off soon afterwards. Damsons bore little or no bloom. Cherries are plentiful and fine. Strawberries, heavy crops and good. Gooseberries, abundant; also Currants of all kinds; likewise Raspberries. With the exception of Plums and Apricots, out-door fruit in this district will be a fair average crop, some orchards being very fine, while others are not so good, though close together.—A. HENDERSON.

**Clumber.**—All small fruit plentiful and fine. Sweet Cherries excellent; Morellos plentiful, but small. No Plums nor Nuts. Our Apple orchard is well sheltered and the trees flowered well, but the bloom got killed by late frosts. For several years the trees got badly affected with grubs, and last winter we had all their main stems scraped and dressed with lime, soot, and cow manure. Foliage is now healthy and clean. All standard Pears in the orchard are blank: a few young trees upon walls are carrying half a crop, viz., Easter Beurré, Marie Louise, Marie Louise d'Uccle, Ne Plus Meuris, Louise Bonne of Jersey, Zephirin Grégoire, and Williams' Bon Chrétien. Apples on the Paradise stock, planted about six years ago, and grown as pyramids, pinched, and trained, were all beautiful in spring while in flower planted along the borders in the kitchen garden, and the following sorts are fruiting freely, viz., Radford Beauty, King of the Pippins, Bishop's Hero, Downton's Nonpareil, Court Pendu Plat, Sturmer's Pippin, Manks Codlin, Ribston Pippin, Sleeping Beauty, Dutch Mignonne, Cox's Pomona, Kirk's Fame, Nonsuch, Normanton Wonder, Lord Suffield, Bedfordshire Foundling, Fearn's Pippin, Golden Noble, Dume-low's Seedling. Upright cordons with from four to six stems, and coming into bearing, consist of Magnum Bonum, Charleston Pippin, Colville Blanche, Cellini, Crofton Scarlet, Northern Greening, Claygate Pearmain. Peaches and Nectarines are clean and healthy, and are bearing fair crops. The trees, too, are making an amazing growth. The only difficulty will be to get the wood well ripened to stand the winter, and the only way to manage that will be to keep the shoots thin and nailed close to the bricks, pinching back all laterals, and stopping all strong growing leading shoots.—J. MILLER.

**Lenton Hall.**—Our position is high—equal to the highest point of the town of Nottingham, from which we are distant only two and a half miles. Our orchard is on the clay. We catch all



the winds that blow, though well protected by a wall of Walnuts on the north-east side. Generally speaking, the fruit crops stand thus: Apples from early summerings to late greenings (even Besspool having a few) are a good fair crop, on some trees a heavy crop; Pears are a poor crop, scarcely middling; Plums very scarce; Damsons none; Cherries a fair crop; Apricots on strong young trees on a dry aspect and wall (as the wall of a cottage or other building, for instance) are a fair crop, older trees none; Peaches none; bush fruit good all through. We escaped the sharp frosts of early May; Strawberries a good crop, well flavoured; Raspberries good; Nuts none. Of Strawberries which do well here Sir Charles Napier, James Veitch, Eclipse, President, and La Constante are about the best. Sir Charles Napier has cropped abundantly, and swelled off all the lesser flowers well, which such sorts as Keen's Seedling do not do. Looking all round at the fruit crop, I think we shall have nothing to complain of, particularly as regards Apples.—N. H. POWNALL.

**Kingston Hall.**—Fruit crops in this neighbourhood are better than they have been for these last five years. Small fruits particularly are abundant. Gooseberries are quite laden with fine fruit; Raspberries the same, especially the Fastolf. Black and Red Currants are fair average crops, but not so large in the berry as we have had them. Strawberries are a good crop; our best are Sir Charles Napier and Vicomtesse Héricart de Thury, Lucas and James Veitch come next; Wonderful is a first-rate bearer with us, but its shape and colour are rather against it. Apples show a fair yield, particularly the summer varieties Keswick Codlin and Summer Strawberry; Blenheim Orange is bearing a heavy crop, and the Kentish Fillbasket a fair crop; Pears are not a heavy crop; Winter Nellis is our best and surest cropper. The frosts in April did great damage to the Pear bloom. Some trees that were laden have not set a flower. Peaches were much injured by the winter's frosts; therefore, we have but few fruit. The same may also be said of Plums and Apricots. Our soil is a strong holding clay.—J. W. BAYNE.

**Cole Orton Hall.**—As on some sorts of Apples there is a heavy crop, on others very few, on the whole nearly an average crop; Apricots, a very thin crop in this neighbourhood; Cherries, a good crop of all kinds; Strawberries, abundant and fine in size and quality; of Peaches and Nectarines we have a great crop, and the trees are very clean; of Pears we have very few indeed; Plums, not half a crop; Gooseberries and Currants of all sorts and Raspberries are abundant; Filberts, a full average crop; Walnuts, very few; Figs none, the trees being nearly all killed by last winter's frost.—MONTGOMERY HENDERSON.

**Bloxholm Hall, Sleaford.**—Fruit crops in this neighbourhood look better than they have done for years, although the two past winters have been very destructive to Apricots, Peaches, and Plums. Apples are a good average crop, and the fruit is swelling fairly well. Pears are a fair crop on walls and espaliers but thin on bushes, pyramids, and standards. Apricots are a fair crop where protected, but the trees are much injured by the late severe winters. Plums are a complete failure on walls, bushes, and pyramids. Strawberries are abundant. Cherries had an abundant show of bloom, but light crops are the result. Peach and Nectarine trees were very much injured by frost, and crops are light. Gooseberries abundant. Red and white Currants good; Black Currants not quite an average; they suffered from one night's frost when in bloom. Raspberries are a good average crop. Walnuts a fair crop. Filberts very thin.

Potatoes are doing well; early sorts being lifted are turning out clean and sound.—DAVID LUMSDEN.

**Belvoir Castle.**—Following two wet, cold, ungenial seasons, with the legacy of succulent growth and unripened wood, great results in

fruit growing could not be freely anticipated. Although standard and pyramid fruit trees, on which the greatest care has been expended, have failed, the hardy orchard Apple trees are affording in many instances heavy crops. Standard Kentish Cherries in orchards have also produced great crops, but have ripened prematurely, owing to prolonged drought. The Apples which are bearing abundantly are Keswick Codlin, Frogmore Prolific, Stirling Castle, Warner's King, Blenheim Orange, King of Pippins, Northern Greening, Betty Geeson, Golden Noble, and Court of Wick. We have scarcely any fruit on the many pyramid Pears we possess, but trained wall trees are more satisfactory in fruitfulness. Williams' Bon Chrétien, Poire Pêche, Marie Louise, Louise Bonne of Jersey, B. Clairgeau, Josephine de Malines, Orpheline d'Enghien, Easter Beurré, Bergamot d'Esperen, Beurré d'Automne, Doyenné Boussoch, Huysche's Prince Consort, Crassane, Ne Plus Meuris, and Shobden Court are exceptionally prolific, but now suffering from drought. Trained Morello Cherries on walls are wonderful examples of fruitfulness. Plums are generally thin; Damsons, a failure. The Green Gage Victoria on walls, and Orleans and Winesour in orchards, are bearing moderate crops. Our orchards and fruit gardens are on lias clay, with about 2 ft. of soil, generally modified clay with some admixture of lighter soil. Our elevation is 237 ft. above sea level; we are near large woods which affords shelter, but also intercept afternoon sun. The river Devon is half-a-mile distant. With one exception, and that is a tree against a large building, Apricots are thin—the exception is bearing too heavily. Peaches are healthy and bearing light crops. Both these and Apricots had the protection of canvas and a wooden covering for a short time while in bloom. Raspberries, Currants, and Gooseberries are bearing great crops. The Gooseberry caterpillar has been very destructive. Strawberries have borne well, but have suffered from the frost and drought. Nuts and Walnuts thin. W. INGRAM.

#### SOUTH-WESTERN DISTRICT.

**Powderham Castle, Exeter.**—The state of the fruit crop is certainly more cheering than it has been for these last four years. Apples are good, though the long period of dry weather experienced in early summer affected some localities. The Old and New Hawthornden, Cellini, King of the Pippins, Blenheim Pippin, Winter Majetin, Flower of Kent, and others are very abundant. Pears are a good average. We have full crops of Williams' Bon Chrétien, especially on bushes; though smaller than those on the walls, yet they ripen quite a fortnight earlier; Marie Louise, Passe Colmar, Doyenné Boussoch, Louise Bonne of Jersey, Beurre Rance, Catillac, and Uvedale's St. Germain are bearing very good crops. Plums, as a rule, are good in this neighbourhood; I cannot say that I have a large crop, but more than usual. Early Cherries were very good and fine, as are also the later ones the Morello and Kentish. Of Apricots we have good crops, but there is the continued dying off of the trees to contend with. It commenced about two years ago, caused to a great extent, I believe, by the severe frost. Peaches and Nectarines are a fair crop, but red spider has seriously affected ours, owing to our limited supply of water during the greater part of the summer. Figs were cut so very much by the severe frost of last winter, that I question if we shall gather any at all this season. All bush fruits have been excellent. Strawberries have been very good, both in size and flavour. The earlier varieties were three times caught by the frost, and had all the expanded blooms destroyed, and they are generally looked for here, being situated in close proximity to marshy ground. Sir Joseph Paxton and President were our best general croppers. Elton Pine has again yielded good crops after all the others had given up. A thick mulching of stable manure carried them safely through the dry season. I have for several years past well imed my beds previous to mulch-

ing, and have found it very efficacious in the preservation of the fruit from slugs.

**POTATOES.**—I have not seen any disease in Potatoes as yet; the early varieties are nearly fit to take up for storing.—D. C. POWELL.

**Enys, Penryn.**—Apples are a moderate crop in most gardens. In orchards (owing to their not being pruned, I think) in many instances they are almost a failure, much fruit having dropped. The sub-soil is more or less impregnated with metal, and the trees being allowed to grow rampant at first soon get their roots down into it and the result is canker and nakedness. They are as a rule looking more healthy now than they were last year. Root pruning answers where trees are deeply rooted and sickly. The same remarks apply to Pear trees. The Pear crop is an average. Almost all the kinds will do when the trees are small and well pruned. Small fruits are an average crop; so are Peaches and Nectarines. Cherries, below the average. Plums, an average crop. There is also a fair crop of Figs.—HENRY MILLS.

**Moreton, Dorchester.**—Fruit crops in this neighbourhood are better than they have been for years, although in some cases not equal to what was expected early in the season. A severe frost on the night of the 10th of May did considerable mischief. Peaches and Nectarines on open walls are fairly good, while in orchard houses they are excellent. Pears and Plums on walls are good, but not so good on espaliers and pyramids. These appear to have suffered more from the late frost than anything else. Apples are a fair crop; some of the old standard trees are bearing heavy crops, while others are nearly fruitless. Very early and late sorts appear to be carrying heaviest crops. Figs were much injured by the frost of last winter. Strawberries have been abundant and fine as regards size and flavour. Raspberries very good, also Gooseberries; Currants of all sorts abundant.—D. UPHILL.

**Killerton.**—Strawberries have been early, fine, and plentiful. I gathered Black Prince on a south border on May 21. Currants, Red and White, good crops and very fine; Black a fair crop, fruit fine. Gooseberries a good crop. Peaches and Nectarines moderate. Apricots below the average. Plums moderate on walls, good on standards in orchards. Cherries fine. Pears very good, pyramids carrying a better crop than for several years past. Among the best are Jargonelle, Beurre Giffard, Comte de Lamy, Vicar of Winkfield, Louise Bonne, Maréchal de Cour, Beurre Clairgeau, and Madame Treve. The latter I am obliged to support to prevent its breaking down, so heavy is the crop. Apples here are a fine crop, the land being good and well manured. Trees that bore heavily last year have fine crops again. Among the best are Cellini, Manks Codlin, Keswick Codlin, King of the Pippins, Blenheim Orange, Dumelow's Seedling, Warner's King, Tom Putt, and Hawthornden. In poor land and on shallow soils the trees suffered very much during the dry, cold weather which we had about two months since, and the Apples in orchards so situated are consequently scarce. Raspberries are abundant and fine. Walnuts, Filberts, and Nuts are also plentiful.

Potatoes are very promising; the haulm of the later sorts is very fine, Scotch Champion and Magnum Bonum being very much grown. The early sorts, Ashleaf and Early Rose, are turning yellow and fast ripening off, and ready for taking up. The quality is good, and so is the crop. The disease has made its appearance in one or two gardens, but in each case the ground was, I think, too liberally manured for Potatoes.—JOHN GARLAND.

**Cleavelands, Lyme Regis.**—The fruit crop in this neighbourhood is a fair average one. Apples in some places are abundant and in others less plentiful, a large number of fruits having fallen off. Pears are a fair crop. Gooseberries abundant, as are also Currants, Raspberries, and other bush fruits. Strawberries here have been plentiful and good in quality. Wall fruits are



fair. Plums, plentiful, and of Cherries we have a fair sprinkling. Potatoes look healthy and well and free from disease up to the present date.—H. MUNRO.

**Wilton House, Salisbury.**—Apples are a medium crop, and the trees are in a much healthier condition than they were last year. Apricots, a good crop. Cherries, excellent. Currants, abundant. Figs, light. Gooseberries, a heavy crop. Nuts, a full crop. Nectarines and Peaches, excellent. Pears, a moderate crop. Plums, fair crops on walls, very thin in the open garden. Raspberries, a heavy crop. Strawberries, a medium crop. Walnuts, a very poor crop, the young branches having been killed back by the winter's frosts.—T. CHALLIS.

**Cothelstone, Taunton.**—Although we had an exceedingly fine show of Apple bloom there is not in this part of West Somerset a very large crop of fruit; some orchards are very thin, others have fair crops; as a general rule hereabouts there are more cider fruits than the latter class of culinary Apples. Pears are in most gardens an average crop; with us Beurré d'Amanlis, Beurré Diel, Marie Louise, Winter Nelis, and Beurré Rance are the best; all our Pears are grown on walls of various aspects. Apricots on trees that were well covered are an abundant crop. The best Plums are Magnum Bonum, Green Gage, Orleans, Coe's Golden Drop, and Damsons. The Strawberry crop has been thin in some gardens and very good in others. Small bush fruits are in some cases a full crop. Walnuts abundant.—J. C. CLARKE.

**Sherborne Castle.**—Fruit crops in this neighbourhood were very promising till the 9th of June, when we had 4° of frost, which reduced the Apples quite half, and in some places cleared them off altogether. Pears on walls are a moderate crop; bush trees suffered the same fate as the Apples. Apricots are very thin. Of Peaches and Nectarines, we have a fair sprinkling which promises to ripen well; the wood and foliage are looking better than they have done for years past. Plums are almost a failure. Morello Cherries are a fair crop; other varieties do not do well in this locality. Figs were badly cut last winter, and will take years to recover. All kinds of bush fruits are very plentiful, clean, and good in quality. Strawberries have been very plentiful in some places; in others they have suffered very much from want of rain. Walnuts are very plentiful. Filberts and Hazelnuts are thin.

Potatoes have looked well up to the present time, but disease has made its appearance within the last day or two.—W. G. PRAGNELL.

**Prideaux Place, Padstow.**—Apples, Pears, Plums, Black Currants, Raspberries, Peaches, and Nectarines are above the average; Cherries and Gooseberries, average; as are also Red and White Currants; Strawberries, plentiful, but small; Medlars, under the average. The Cherry trees, especially Morellos, are dying off badly from some cause unknown. Apricots not grown here.—JOHN C. TALLACK.

#### NORTH-WESTERN DIVISION.

**Crewe Hall.**—The fruit crops in this district are of a mixed character, some kinds being plentiful, while of others there are very few. Apricots on walls had very little blossom, and of fruit there is of course very little. Peaches and Nectarines are a medium crop, the best of the former being Barrington, Dr. Hogg, Dymond, Osprey, Prince of Wales, Sulhamstead, Violette Hative, and Walburton Admirable. Of Nectarines the best are Impératrice, Lord Napier, Elruge, and Welbeck Seedling. Pears are thin on walls, but more plentiful on pyramids and standards. The kinds bearing best are Althorp Crassane, Aston Town, Beurré Bosc, Beurré de Capiaumont, Beurré Rance, Bon Chretien, Catillac (for stewing), Easter Beurré, Jargonelle, Glou Moreau, Louise Bonne, Marie Louise (on pyramids), and Winter Nelis. Apples are under an average crop. Some trees look healthy and are bearing well, but many which were infested with great quantities of caterpillars and

aphides look unhealthy, and have little or no fruit on them. In one orchard which I have seen, the foliage was nearly all destroyed by caterpillars, and the trees, which up to this season had borne good crops, had scarcely one upon them. Many trees were injured by the severity of the winter and the low temperature of the past spring, and to the scarcity of small birds killed by the severe weather of the past winters must, I think, be attributed the presence of great numbers of caterpillars, which not only injured the foliage of Apple trees, but even in a greater degree that of Oaks during the past two seasons. The kinds of Apples which are bearing the best crops are Cellini, Red Hawthornden, Old Hawthornden, Lord Suffield, Irish Peach, Keswick, Ribston, Mère de Menage, Minchall Crab, and Worcester Pearmain. Of Plums, which are a small crop, the best are Victoria and a local kitchen Plum called Thornbill's Crewe Hall Seedling. Damsons, which are largely grown in this county, are scarcely an average crop. Strawberries are a poor crop, the plants having been injured by the severity of the winter. The best are President, James Veitch, Oxonian, and Elton Pine. Black Currants are a moderate crop, scarcely up to the average. Red and White Currants, Raspberries, and Gooseberries are very abundant. Of Cherries there are but few.—WM. WHITAKER.

**Waterdale, St. Helens.**—The bloom on wall trees was plentiful, and Pears as a rule set well, but some of the tender sorts, such as Jargonelle and Marie Louise, have dropped a good deal of fruit, leaving the croplight. Standard Pears, where sheltered, are very promising. The Apple crop is light, with the exception of a few sorts. Lord Suffield is the best, and Manks and Keswicks are well loaded, and there is a fair crop of Ribstons. Damsons are a good average crop, but of all other sorts of Plums there are scarcely any. Morello Cherries are a good crop, and other sorts an average one. Gooseberries are well loaded where sheltered by trees or walls, but in exposed situations they are very light. Black and Red Currants are good. Raspberries are a light crop, but very fine. Strawberries are good generally. The soil here is strong, resting on clay, and the sorts that succeed best are Vicomtesse Héricart de Thury, Sir Joseph Paxton, and President. Eclipse is a great cropper, but will not stand the least moisture. For damp sunless weather Sir Joseph Paxton is the best.—JAMES SMITH.

**Haigh Hall, Wigan.**—Fruit crops in this district are, on the whole, considerably above the average. The gardens here are fully exposed to east and north-east winds, and the soil is a cold, hungry, tenacious loam. The cultivation of the Peach, Nectarine, Apricot, and Fig are seldom attempted in the open air in this locality, as they seldom or ever produce a crop; old inhabitants, however, say that thirty or forty years ago splendid crops of Peaches and Apricots were grown in the neighbourhood of Wigan. Smoke and other injurious ingredients could not have been so plentiful in the atmosphere then as they are now. Apples are a good crop; Lord Suffield, Cellini, Yorkshire Greening, Ecklinville Seedling, and Sturmer Pippin are the varieties I find most suitable for this place. Pears on south walls are a fair crop; Beurré Diel, Louise Bonne, and Glou Moreau are the best. Victoria Plums are a fine crop, other sorts not so good; Cherries above an average crop, especially Morellos; Strawberries suffered very much from the severity of the past winter, Sir C. Napier nearly all killed; Vicomtesse Héricart de Thury, Malakoff, Black Prince, Eclipse, and Newton Seedling carry full crops; Gooseberries, Raspberries, and Red and Black Currants are very fine and plentiful.—ANDREW JAMIESON.

**Huntroyde Park.**—We have here heavy crops of bush fruit, such as Black, Red, and White Currants, Raspberries, and Gooseberries. Apples and Pears (standards) are very thin, little fruit having set. Pears on walls are only half a crop. The trees having no fruit upon them last year,

and the wood fairly ripened, I expected a good crop this season; but we are located in a cold damp valley, with heavy rainfall and very late frost, attended with cutting east winds, which seldom leave us till the end of June, consequently the trees are slow in their growth and receive frequent checks, which prove disastrous to the setting of their blooms. Plums and Morello Cherries do well with us; we have fair crops of both. Peaches, Nectarines, and Apricots have to be grown on walls protected by glass, the lights being removed from July till September, when they are again put on to assist in ripening both fruit and wood. In this way we annually get good crops, while without such means the trees would in a few years be killed outright. Strawberries are not so heavy as we usually have them; whilst in bloom we had two frosty nights, which helped to reduce the crop. The fruit is, however, very fine, thus making up for the deficiency in quantity. After trying many kinds I find none I can so well depend upon as Garibaldi first and President second; Dr. Hogg, J. Veitch, Mr. Powel, and a few others only succeed middling.

Potatoes are turning out well. The first and second earlies are all we could wish. Veitch's Improved Ashleaf, Rivers' Ashleaf, and Early Bird are amongst the earlies, but none better than Rivers', and for a second early I still prefer Myatt's. Late Potatoes are looking remarkably well, but of course it is too early to speak about disease yet.—H. LINDSAY.

#### EASTERN DIVISION.

**Woolverstone Park.**—Fruit crops in and around this district are better than they have been for many years past, especially as regards the hardier kinds, trees and bushes of which, except Plums, are or have been laden, so much so, as to necessitate in some cases the thinning of Pears, and if many of the Apples had not fallen from the effect of frost and maggot, they, too, would have required the same attention. Peaches and Nectarines are thin with us, as all our trees are now on an exposed east wall, but Apricots that have a southern aspect, and are protected by a glass coping, are bearing heavy crops, and the trees are looking well. Not only is there an abundance of fruit about this part, but Hollies and Thorns are laden with berries, and the branches of Beech are borne down with the weight of their masts. Walnuts, too, are full of their fast swelling clusters. The soil here is light and dry. One thing in connection with the fruit crops is noteworthy, viz., the absence of blackbirds and thrushes, most of which it would appear have been killed by the severity of the last winter.—J. SHEPPARD.

**Guntton Park.**—Apricots very thin, owing to spring frosts; Apples, abundant as present, but falling much, owing to dry weather; Pears are the best crop we have seen for years; we have been obliged to thin severely; Plums, very thin; Cherries, plentiful and good, especially Bigarreau Napoleon, Bigarreau Black Tartarian, Black Eagle, Elton, also Morello; Strawberries have been excellent in quality and quantity, Sir Joseph Paxton, Sir Harry, Amateur, Crimson Queen, Sir C. Napier, Vicomtesse H. de Thury, President, De la Cour, British Queen, and Dr. Hogg. These crop freely, the last two mentioned scarcely so well as the others, our sandy loam not suiting them quite so well. Currants are a good crop; Gooseberries very thin, owing to the extraordinary crop these bore last year; Peaches and Nectarines in this neighbourhood, where sheltered, are a good crop.—W. ALLAN.

**Cossey Park, Norwich.**—Apples an average crop; Pears under the average, as are also Plums, Peaches, Nectarines, and Apricots; Cherries are an average crop, and so likewise are Medlars, Strawberries, and bush fruits. Walnuts here are a total failure, but there are full crops in some parts of this neighbourhood. Filberts an average crop. The following Apples are bearing the best crops here, viz.: Dr. Harvey, Hawthornden, Blenheim Orange, Keswick Codlin, Warner's King,



Devonshire Quarrenden, and Lord Suffield. A variety known here as the Flail Apple is also bearing average crops, and is said to bear well generally. The soil here is very light and sandy.

Potato haulm is looking remarkably well. Early varieties that were cut severely with late frosts are, as a matter of course, small; others not so cut are satisfactory. Late varieties, I feel afraid, will be small, owing to the drought. No appearance of disease at present.—E. BURBURY.

**Hardwicke House.**—Apples here are about half a crop; Lord Suffield still comes through the dropping time better than most sorts. Pears, thin and irregular. Plums, thin; very heavy crop last year; Victoria still the best bearing sort. Peaches, a good crop, and the trees are looking well. Nectarines also a good crop, hardly so full as Peaches. Apricots, trees much cut; those alive and healthy are bearing good crops. Cherries, capital crop, good quality. Strawberries, good crop where the winter or spring frosts did not cut them off. Gooseberries, fine full crop where they escaped spring frosts. Currants, Red and White, good; Black, full crop. Raspberries, heavy crop. Walnuts, thin. Filberts and Nuts promise well. Soil, variable on the chalk, which is very near to the surface.—D. T. FISH.

#### YORKSHIRE.

**Wortley Hall.**—Fruit crops in this district are better than they have been for some years. Pears and Plums are not plentiful, but Apples generally are bearing good and in some cases great crops, and the trees are clean and healthy. Cherries are good, and all small fruits—Strawberries and Raspberries in particular.

Potatoes are good and not showing any disease worth speaking of.—J. SIMPSON.

**Cleveland.**—Apricots in this district are all but dead; Peach trees the same and in some instances killed. Plums, too, are greatly injured; in many cases standard trees quite killed. Pear trees are also injured; in many cases the bark is falling off in shreds from the stems, and many young trees are killed. Gooseberry bushes have suffered much and great numbers are dead. It will take many years to restore the fruit trees to the condition they were in 1878. Altogether it may be stated that small fruits are a fair average crop in Cleveland this season. Gooseberries, are, however, undersized on account of dry weather, and in many cases the caterpillar injured the crops. Red Currants are good. Black Currants extra good. Raspberries, abundant. Strawberries, unequal, owing to the dry weather and diversity of soil. Apples partial. The old Cockpit a full crop; Codlins, fair crop. Hessel Pear fairly good; no other Pear worth naming—Green Chisel excepted. I may note that Industry Gooseberry and Sir Joseph Paxton Strawberry are above the average of all other varieties grown in the district.—CHAS. McDONALD.

**Stourton Castle.**—Fruit crops about Knaresboro' are quite as good as could be expected after the three or four very unfavourable seasons we have had for maturing the wood. Apricots are quite a failure, and so are Plums with the exception of Victoria. There may be trees of other sorts in favourable localities that may have a sprinkling of fruit. Of Cherries the crop is only moderate. Peaches are a fair crop here on the best trees. Pears a light crop in general. Some trees are bearing fair crops, others but little or no fruit. Apples are about an average crop. Some trees as the Hawthornden and the Cockpit (the latter a local Apple) are bearing good crops, whilst others have little or none. Of bush fruits we have a fair average crop—Currants rather small, Strawberries an average crop. The present hot weather is favourable to the ripening of the wood for next year.—M. SAUL.

**Ribston Hall.**—In this neighbourhood Peaches and Nectarines are much below the average, and of Apricots we have scarcely any; Pears below an average; Apples the same; Plums very irregular, some good, others thin; Cherries an aver-

age; Medlars good; Gooseberries very heavy, as are also all sorts of Currants; Strawberries and Raspberries good. The sorts of fruit trees that have fruit on them are Grosse Mignonne, Barrington, and Noblesse Peaches; Victoria and Elruge Nectarines, Moorpark Apricot, Williams' Bon Chrétien, Jersey Gratioli, Louise Bonne of Jersey, Seckle, Beurre d'Amanlis, Easter Beurré, and Beurré Diel Pears; Keswick Codlin, Manks Codlin, Bridgewater Pippin, Early Julien, Margil, American Mother, Blenheim Pippin, Ribston Pippin, Cellini, Hawthornden, Winter Nonsuch, Minchall's Crab, and Rymer Apples; Blue Gage, July Gage, Green Gage, Victoria, Washington, Prince of Wales, and Damson Plums; and Morello, May Duke, and Governor Wood Cherries. Our soil is rather sandy and calcareous upon a bed of sand. The garden is well sheltered on the north-east and west sides by large forest trees; it leans to the south, which is open; height above the sea 130 ft.; the average rainfall about 26 in.—THOS. JONES.

**Brantingham Thorpe.**—As regards Apples, many orchards have suffered severely, the wood of two or three years' growth being killed, through sunless summer and cold winter. Where the trees are healthy crops are abundant. Hardy Pears, as the Hessel, are abundant; tender kinds very partial, particularly on standards; Peaches, Nectarines, and Apricots, where living and healthy, are producing a fair sprinkling of fruit; Cherries, plentiful; Plums thin; Damsons also scarce; Strawberries, abundant and very fine in size and quality; Gooseberries and Red and White Currants, plentiful and fine; Black Currants, thin and small. Soil marly loam, subsoil marl and chalk.—ROBERT C. KINGSTON.

**Thorpe Perrow, Bedale.**—Fruit crops in this part are good, with only a few exceptions. Apples are very plentiful, the trees mostly carrying four times too many. Apricots are a very poor crop; the trees were very much injured by the long severe winter which we had. Plums are a partial crop. Some trees are overloaded, others bearing none. Pears a fair crop, and trees looking well. Cherries a moderate crop, but fine in quality. Strawberries not so good as usual; the plants were injured in many places by the long-continued frosts. Bush fruit is very abundant and fine. I have only seen so great a crop once in twenty years. The old favourite sorts that I have named in THE GARDEN in years gone by are still to the fore. I must add to that list Baumforth's Seedling Raspberry, a great acquisition. I have a few canes growing beside the Northumberland Filbasket. I find it to be a great crop per, and the fruit larger and sweeter than that of that kind. It is useful for dessert, and those who exhibit Raspberries should grow it. Filberts are a plentiful crop.—WILLIAM CULVERWELL.

#### NORTHERN DIVISION.

**Seaham Hall.**—The garden here is on the limestone, and is sheltered by forest trees, but being near the sea much exposed to sea breezes and east winds. Apples are a fair crop, better than usual; owing to the late spring, the trees did not blossom until after the prevailing east winds were over. The sorts that do well are the Codlin, Lord Suffield, Ribston Pippin, and the Queen. The following Pears are bearing good crops, viz., the Jargonelle, Chisel, and Louise Bonne of Jersey; most other sorts are too tender for this east coast. Peaches and Nectarines do not come to perfection here out-of-doors. Most kinds of Cherries do well against walls, but not as standards. The Victoria Plum is the only variety that bears a crop with us. Gooseberries are a middling crop; much of the fruit fell off soon after setting. Of Black Currants we have a fair crop, but it suffered much from the dry weather. Red Currants and Raspberries are very good crops.

Potatoes look well.—R. DRAPER.

**Levens Hall, Milnthorpe.**—Apples set well here, but the maggot has reduced the quantity to only a moderate crop; Cherries are abundant, but all have moulded off since the late heavy

thunderstorm; Currants, Black, Red, White, are abundant, and all of fine size; Raspberries are unusually heavy where they did not get injured last winter; Plums moderate, with the exception of Victoria, which never fails in this quarter; Damsons are largely grown in this neighbourhood, and in most cases promise to be a fair crop; Pears are a fair crop, and likely to acquire fine size, particularly Josephine de Malines and Marie Louise; Gooseberries are over an average crop, very large, and only want sunshine; Strawberries abundant, only we have too much wet for them; President is the best in this quarter; James Veitch is also good; Peaches are not much grown here out-of-doors, but we have a sprinkling of Royal George and Noblesse. The grounds here lie low, only some few ft. above tidal mark, and therefore we suffer much from late frost and damp.

Potatoes are looking well in this neighbourhood, where large quantities are grown; Champion, Magnum Bonum, and Skerries are the favourites here, with a fair sprinkling of the best of all Potatoes, the Grampion.—ROBERT CRAIG.

**Alnwick Castle.**—Fruit crops of all kinds with us are abundant, especially Apricots and Pears. We grow all the leading sorts of fruits, and find them all do well except in very unfavourable seasons. We never have adopted the system of root-pruning, and only a little top-pruning in winter, confined chiefly to thinning the fruit spurs. The soil here is very light, on a gravelly bottom, at an elevation of 178 ft. above sea level. The only protection we use during the spring is a double ply of herring net, stretched tightly along the walls. As far as I have seen in this neighbourhood, Apples and small fruits are plentiful.—ALEX. INGRAM.

**Shawdon Hall.**—We have once again in Northumberland the prospect of seeing an abundant Apple crop. The memorable frost of the 10th of June seems to have done little injury to Apples, owing, no doubt, to the trees being well clothed with fine healthy foliage. They have generally escaped injury for the same reason. Gooseberries and Currants have sustained little harm. Both are abundant and fine in this district. Although considerably later than last year, the abundance of Gooseberries may be judged from the fact that they are selling in the markets of this locality at half the price they were sold at last year. Strawberries are, perhaps, the crop of all others in this quarter that has given the least satisfaction. In some gardens the snow lay for nine weeks; when it was cleared away it was found that the crowns of many of the plants were rotten, or eaten by the short-tailed mouse, which does immense destruction in the gardens here when snow lies long upon the ground. Wall fruit is, upon the whole, a fair crop. Peaches have become so great a rarity in the open air, that they can hardly be recorded amongst outdoor fruits. In many places the trees are killed, or in such an unhealthy state, that replanting will be found necessary. Although Apricot trees have not suffered so much from frost, the low temperature has helped to bring on canker. It is no uncommon thing to see whole trees decay in a season. The crops of Pears on walls are a fair average one. The trees, which are healthy, have produced very little breast-wood. Should the autumn prove fine, we will have Pears of good quality. After trying many of the new varieties of Apples, we find, even in good seasons, that the older sorts are better suited to this district than the new. The same holds good with regard to many other kinds of fruits grown in this quarter. On the morning of the 10th of June we had 5° of frost, which did more injury here to vegetable crops than to fruit.—JAMES THOMSON.

#### SCOTLAND.

**Dalkeith, Midlothian.**—The fruit crop generally is a good average one. Apples are a heavy crop, and the fruit fine. Pears are a partial crop, many trees having none, while others are heavily laden. Plums and Cherries are about an average, and the fruit is of good size, although



the foliage of both was much injured by caterpillars in May and June. Apricots and Peaches on walls are a moderate crop. Gooseberries, Raspberries, and Black, Red, and White Currants are very heavy crops. Strawberry plants were much injured by the severity of the past winter, and have not produced half a crop; but in high-lying places where the deep snow protected the plants from the severity of the frost all through the winter they are bearing a fine crop. Nuts are a failure, last season's wood being mostly killed on Walnut trees. On a well cultivated light loamy soil, and in a moderately sheltered district, the following are a few of our best bearing kinds of hardy fruits: Apples—Lord Suffield, Warner's King, Ecklinville, Stirling Castle, Cellini, and Hawthornden. Pears—Jargonelle, Williams' Bon Chretien, Marie Louise, Napoleon, Beurre Diel, and Hessele. Plums—Victoria, Jefferson, Early Prolific, Transparent Gage, Kirke's and Coe's Golden Drop. Cherries—Black Tartarian, Elton, May Duke, Frogmore Early Bigarreau, Governor Wood, and Morello. Apricots—Moorpark and its varieties. Peaches—Bellegarde, Barrington, and Stirling Castle. Nectarines—Pine Apple, Lord Napier, and Elruge. Strawberries—Vicomesse Hericart de Thury (Garibaldi), James Veitch, Keen's Seedling, and, on cool soils, Elton Pine.—M. DUNN.

**Tynninghame, East Lothian.**—Apples are generally a good crop, though nothing like what was anticipated. Pears are in our own case not a large crop, but good in the neighbourhood. Plums are also partly deficient here, though apparently local. Apricots are a fairly good crop. Currants, Cherries, Gooseberries, and other small fruits, with the exception of Strawberries, are very large crops. The last named are only a good crop on two-year-old plants. Many older plants were killed in winter, and all were damaged more or less with frost on June 10—very much worse in some gardens than this. On the whole the fruit crop is a good deal below the average.—R. P. BROTHERSTON.

**Eskdale.**—With the exception of Pears, which are nearly a failure, fruit crops in this part of Dumfriesshire are better than they have been for some years. The failure of Pears I attribute to the intense frost which we had during the winter. In autumn the trees looked well and were well furnished with fruit buds; but when looking over them in the early part of the year I found that nearly all the fruit buds were killed. Apples are in general above an average crop. Plums are under the average with the exception of Victoria. This variety has never failed with us to produce abundance of fruit. Early Cherries are a failure, the buds having been killed like those of the Pear. Morellos are plentiful. No Apricots are grown here, as they have always proved to be a very uncertain crop, although protected. Peaches and Nectarines under glass are carrying heavy crops—none are grown outside. Gooseberries, Currants, and Raspberries are in general good and ripening fully as early as we have had them for some years. I have seldom seen bush fruits so entirely free from insects as this year. Strawberries are above an average crop, and I may say that in the garden here we never had such a quantity of fine fruit. The sorts grown are President, James Veitch, Duke of Edinburgh, Comte de Paris, Sir Joseph Paxton, and Garibaldi. The two last named have done best.—JAMES DICKSON.

**Bothwell Castle, Paisley.**—As far as small fruits are concerned, I can report very favourably; Gooseberries, Currants, Raspberries, and Strawberries are very abundant, and in every way satisfactory. May Duke Cherries are thin; Morellos, a fair crop; Pears, inferior, and Apples very irregular; some trees are overloaded, and there are many with little or nothing on them; taken altogether, the crop is below an average one, though I have seldom seen a finer blossom than we have had this year, and rarely seen so many caterpillars, which destroyed the leaves not only of the Apple trees, but the Oak trees, with which

our woods abound, were almost stripped of their foliage; Plums on walls have greatly failed; Damsons are in some cases good, but not generally so; the Peaches we grow on the open walls are chiefly the Royal George, and a few of the Acton Scot, both of which suffered to some extent from the severe frost of last winter, but the Royal George suffered least, and on some trees we have a fair crop: when in bloom they are covered with scrim cloth when we are apprehensive of frost, but it is taken of through the day.—ANDREW TURNBULL.

**Glamis Castle.**—Apples are more plentiful here than they have been for several years. Our favourite sorts are Codlins; Dumelow's Seedling, Hawthornden, Lord Suffield, Lord Pendu Plat, and Stirling Castle. Apricots are a full crop all over this district; Plums an average crop. We grow most of the leading sorts, all of which do well. Pears, with the exception of a few sorts, are thin. Louise Bonne of Jersey, Passe Colmar, Williams' Bon Chretien, and Vicar of Winkfield are our best kinds. The Strawberry crop is a failure all over this district. Cherries are a good crop, Morellos in particular; we grow all the leading kinds. Small fruits of all sorts, except Strawberries, are a full crop, but very late. We are exposed very much to late spring frosts here; on the 6th and 8th of June we registered 6° and 7° of frost. Our soil is a sharp light loam, and in ordinary good seasons crops of all kinds succeed well in it.—GEO. JOHNSTON.

**Balcarres, Fifeshire.**—Apples are a heavy crop with the exception of a few late varieties that were in bloom and suffered from the hail storm which occurred on the 7th of June; Apricots, an average crop, but few are grown here; Plums, a good crop, Magnum Bonum, Kirk, Jefferson, Green Gage, Victoria, and Golden Drop all good; Cherries, an average crop, Morellos heavy; of Peaches outside we have very few, trees killed in the past winter; Pears, an average crop; Strawberries, abundant, particularly on young plants of two year's standing; Keen's Seedling, Garibaldi, Elton Pine, and a new variety, Marshal McMahon, have been very good. Old plants that have stood any length of time quite killed outright; Gooseberries, a heavy crop, so much so that the branches are weighed to the ground. Sorts grown and heaviest, Crown Bob, Whitesmith, Sulphur, Warrington, White Captain, Ironmonger, Crown Regent, Green Gascoigne, &c. Raspberries, an average crop; Currants, Black, White, and Red, abundant. All kinds of fruit have done well this season but Peaches, and they are scarce outside. We had frosts on June 8, 9, and 10, and since then the thermometer has been very low several times. We are pretty well sheltered from the north and east, but fully exposed to the south and west, and sometimes suffer from S.W. winds of the sea in spring and summer.—E. TATE.

**Alloa Park.**—In this district small fruits, such as Currants, Gooseberries, and Raspberries, are very plentiful; Strawberries are a medium crop; stone fruits, such as Apricots, Peaches, Plums, and Cherries, a very fair crop; Apples are plentiful, and Pears a very good crop. The soil in this locality is generally of a good loamy character. The Apples which appear to do best here are Cellini, Coe's Golden Drop, Ecklinville Seedling, Keswick Codlin, Lord Suffield, Manks Codlin, Ribston Pippin, and Stirling Castle. Pears do not do well here, except a few, such as Jargonelle, Marie Louise, and Williams' Bon Chretien. As to Apricots, the Moorpark appears to be the only variety which is generally cultivated, and it does well. There is little protection for fruits, except in a few cases where woods afford shelter.—THOMAS ORMISTON.

**Dalmeny, West Lothian.**—Early Strawberries are only about one-fourth of a crop; late ones at present promise to be a full crop. Gooseberries are a very heavy crop. Currants, Red and Black, a very heavy crop. Pears on walls almost a failure. Apples, a good crop on such sorts as Ecklinville, Lord Suffield, Chiswick Codlin, Cellini,

and Hawthornden. Apricots, rather a poor crop. Plums, good in the case of Victoria, Jefferson, and Kirke's. Morello Cherries, a fair crop.—JOHN MOYES.

**Oxenford Castle, Pathhead.**—Apricots very poor, and large branches of the trees dying off, a circumstance which has only occurred during these last three years in this locality. Moorpark is being substituted for most of the other varieties. Apples are a heavy crop, and swelling very satisfactorily, notwithstanding the small amount of rain we have had. The following are our most esteemed varieties, viz.: Warner's King, Blenheim Orange, Northern Greening, Yorkshire Greening, Keswick Codlin, Manks Codlin, Lord Suffield, Stirling Castle, Ecklinville Seedling, Oslin Thorle Pippin, King of Pippins, and Duchesse d'Oldenburg. Sweet Cherries are scarcely an average crop, but Morellos are exceptionally heavy. May Duke, Bigarreau, Kentish, and the Morello are the most useful, also Black Tartarian. Of Currants we have a very heavy crop, both of Red and Black. Red sorts consist of Raby Castle, Cherry, and Knight's Large Red. Black: Common, and Lee's Prolific. White: Dutch. Gooseberries are a very heavy crop, and the fruit large. Hedgehog, Sulphur, Whitesmith, Red Captain, Warrington Red, and Warrington White are our most useful sorts. Plums, excepting Victoria and Damson, are a small crop, the former very heavy. Raspberries were never better; no digging amongst them, but heavy mulching and thin training to a horizontal wire along the top of stakes, at 5 ft. from the ground, pruned and topped in autumn. Strawberries are a small crop. Where the plants are old many of them were killed by the severe winter. The only satisfactory crops are from plants which were forced last year and planted out in August. Keen's Seedling, Garibaldi, Duke of Edinburgh (Moffat's), James Veitch, and Elton Pine are the sorts chiefly grown. Pears are under the average with us, and owing to the very dry weather, are not swelling kindly. We grow a large collection, but those most to be depended on are Marie Louise, Louise Bonne of Jersey, Fondante d'Automne, Beurre d'Aremberg, Jargonelle, Autumn Bergamot, Gansel's Bergamot, Crassane, Maréchal de la Cour, Duchesse d'Angoulême, Doyenné du Comice, Williams' Bon Chretien, Glou Morceau, Easter Beurre, Beurre Hardy, and Comte de Lamy. Our soil is a heavy loam on a clay subsoil, consequently cold, and the trees are apt to canker unless frequently lifted, but a sure productive soil when the trees and bushes are fully established.—A. ANDERSON.

**Marchmont, Dunse.**—Apples, Pears, and Plums are plentiful. Apricots scarce, trees killed in some places. Cherries plentiful. Gooseberries a heavy crop. Black Currants, medium. Red and White heavy crops. Raspberries medium; Strawberries a quarter of a crop; the two latter suffered very much when in bloom, as on June 10 we had 9° of frost. Nuts are plentiful, but all sorts are quite 15 days later than usual.—PETER LONEY.

**Dupplin Castle, Perth.**—Out-door fruits of every kind looked very promising early in spring; but cold frosty nights which continued so long destroyed a quantity of the blossom, and also of small fruit in a young state. Pears seem to have suffered much with the cold, great quantities of the fruit having dropped; they are consequently but a thin crop. Apricots are a good crop, and also Apples. Plums are about an average crop. Cherries, good, and the White Hearts have been of very fine quality. Strawberries are above the average, and have also been of fine quality. Gooseberries, Raspberries, and Currants are first-rate crops.—J. BROWNING.

**Fyvie Castle, Aberdeenshire.**—Apples are good on walls, but indifferent on standards. Pears also good on walls. Plums seem a fair average crop. Cherries also fair. May Duke ripe 9th July. Peaches not grown outside. Gooseberries heavy crop—troubled with caterpillars. Raspberries seem over; gathered the first 14th July. Currants all seem good; changing colour. Strawberries below the average; bloom injured by 4° frost 10th June. Our soil is rather stiff,



situation low, rather subject to frost, but not exposed to wind. —R. FARQUHAR.

**Kilmory, Lochgilphead.**—In this part of the country I do not hear of a single feature any where. Trees and bushes are loaded. Our soil in general is of a light character, but both on light and heavy the crops are good. Strawberries are, however, not so good as last year. The weather is very wet here; we have not had a dry day this month. —A. BROWN.

**Dunmore, Stirling.**—Apples both on standards and walls good, specially Codlins. Pears are also good. Plums middling; no variety seems to do so well here as the Victoria. Peaches outside but few, and late Apricots the same. Cherries a fair crop. Gooseberries, Currants, Raspberries, and Strawberries are good average crops. The winter has been long and severe, and the spring, a few weeks late, making crops rather backward. We have severe frost for a few mornings in the beginning of June which tried outdoor fruit severely. Our soil is pretty strong, and deep alluvial (carse). —M. FITZGERALD.

#### WALES.

**Cardiff Castle.**—All kinds of fruit trees in this district promised well for an abundant crop early in the season. They were literally covered with blossom, but the long-continued east winds that prevailed during the greater part of May were very much against their setting well. Of Apples there is a fair crop, but the trees in some places are badly infested with red spider, and will not ripen their fruit well; Pears are plentiful and fine both on walls and espaliers where protected, but not so good on standards and pyramids in open quarters. On pyramids Williams' Bon Chretien and Louise Bonne of Jersey are the best; Peaches and Nectarines are an abundant crop everywhere in this district. The trees are very much infested with green fly early in the season, but they are now clean and healthy and making vigorous growth. Apricots are also plentiful and good, and the trees healthy and clean; Cherries are a good crop generally, though Morellos and some others have been much affected with black aphids. Plums are an average crop here, but in some places in this district they are scarce; Figs are plentiful, but late. Small fruits are a full crop with the exception of Strawberries, which were much injured by the late frosts in June, these destroyed about two-thirds of the crop. Grapes on the castle wall here and on cottage and garden walls are a plentiful crop this year. The Vines are clean and healthy and free from mildew. The Vines in the Vineyard at Castle Coch looked very promising till lately, but now I am sorry to say they are infested with the Vine fungus (*Odium Tuckeri*), a very minute cottony fungus that attacks the epidermis of the leaf, leaving the fleshy parts of it to dry up and rot away. I believe the only effectual cure for it is going over the plants, cutting off all the infected parts and removing them to the rubbish heap. —A. PETTIGREW.

**Castle Malgwyn, Pembrokeshire.**—Fruit crops hereabouts may be considered to be quite up to the average. Apples are good in sheltered places, but in exposed situations a light crop. The blossom was everywhere abundant and a great crop was expected, but the frosty nights in May changed matters. Pears on walls are a good crop, but on espaliers and pyramids very light. Plums are good. Peaches and Nectarines are a light crop here, but in some places near here good. Apricots succeed well in but few places in this neighbourhood. Nuts are a light crop. Small fruits of all kinds are abundant, though Gooseberries are not such a heavy crop as last year. Strawberries here as elsewhere in the neighbourhood are very plentiful. The varieties of fruit that give the best result here are of Apples, Lord Suffield, Keswick and Manks Codlins, Hawthornden, King of the Pippins, Ribston Pippin on a wall, Cox's Pomona, Cellini, Blenheim Orange, and Lemon Pippin. Of Pears, Souvenir

du Congrès, Williams' Bon Chretien, Doyenne du Comice, Summer and Autumn Bergamot, Jargonelle, and Beurré Bosc. Plums—two sorts of Orleans, Green Gage, Victoria, Coe's Golden Drop, Jefferson, Magnum Bonum, and Reine Claude. Strawberries—Newton Seedling, Eclipse, and Vicomtesse H. de Thury (Newton Seedling deserves to be better known). The soil is generally heavy with clay subsoil, but light in places where the rock is 1 ft. or 2 ft. from the surface. —HENRY HOWARD.

**Sidenham House, Chepstow.**—Fruit crops are heavier hereabouts than usual. There are several acres of Apple trees about here. I find those that did not do well last year are doing much better this season, and those that did well last year I find are not bearing so well this year; others are much blighted. Pears, plentiful. Plums, a fair crop. Apricots, Peaches, Nectarines, and Cherries are much better with me than they have been for these last four years. Figs, very good. Strawberries and Gooseberries scarce, but Raspberries and Currants abundant. Filberts, Nuts, and Walnuts, a heavy crop. The soil, which is loamy, lies on the limestone, and we are sheltered from the north and north-east winds. —JOHN L'ADDOCK.

**Dynevor Castle, Llandilo.**—Fruits here and in the neighbourhood are, generally speaking, good. Strawberries are, however, only about half a crop. Peaches and Nectarines a good average; small fruits above the average. Pears a good average. Apples good in some places, in others very short. Plums moderate. Fig trees killed to the ground last winter by the frost, and a good deal of last year's wood on old Walnut trees has been killed from the same cause. —J. TICEHURST.

#### IRELAND.

**Moydrum Castle, Athlone.**—Fruits in this district are above the average both in quality and quantity, with the exception of Cherries and Pears, which are not so good as in former years. Outdoor Peaches and Apricots are above the average, though in my case they had no protection either in winter or spring. Figs are a failure, being injured by the frost in winter. The soil here is a heavy loam, which I find suitable to the growth of small fruit. —JOHN IGOL.

**Woodstock, Inistioge.**—There never was a better promise of a fruit crop than there was this season, the trees being one sheet of blossom in the gardens here, and also in the orchards in this neighbourhood, but, owing to the cold, cutting east wind, which prevailed during the flowering period, we have scarcely an average crop. Apples are under an average. The following varieties are bearing a fair crop, viz., Hawthornden, Lord Suffield, Keswick Codlin, Irish Peach, Winter Pearmain, Court of Wick, and London Pippin. Pear trees on walls are carrying a good crop, but standards are almost a failure. Plums are about half a crop. Cherries are fairly good, and small fruits are abundant and very good in quality. Strawberries were very good, but much damaged by heavy rains. During last month we registered 5.11 in. In this district Peaches on open walls have been for three years altogether a failure, and consequently a good many are giving up growing them out-of-doors. We grow all ours under glass, and have always abundance and of good quality. —WILLIAM GRAY.

**Mount Shannon.**—The fruit crop hereabouts is an average one. Strawberries promised to be a good crop, but the heavy rains we had in June have made them below the average. Peaches not protected will not be much; we have a fair crop, but doubtful if they will ripen. Apricots are a good average. Cherries and Plums are above the average. Bush fruits are all that could be desired, especially Black Currants, which are a very heavy crop. —J. O. TOOL.

**Birr Castle, King's County.**—Apples in this neighbourhood are a fair crop, but un-

fortunately a great many are dropping. Pears, very scarce, and what there are are very poor, being dry and cracked. Plums generally an average crop. Cherries, very good. Of Apricots we have none. Both Peach and Fig trees on open walls were killed down to the ground during the last two severe winters. Strawberries have been a good crop, but much wanting in flavour owing to the wet dull weather which has prevailed in Ireland until within a few days ago. Gooseberries, Currants, and Raspberries are very abundant; Black Currants especially are splendid. The gardens here are very much exposed, being open to the north and east. The soil is of a very heavy nature, resting on a clay sub-soil. —T. J. HART.

**Castle Upton, Templepatrick.**—Apples here are a medium crop; the varieties carrying the heaviest are King of the Pippins, Ribston Pippin, Nelson's Glory, Pomme d'Api, Duchess of Oldenburg, and White Peacock on walls. Crops on standards generally are under the average, the best laden being Keswick Codlin and Northern Greening. Pears as a whole are poor; those carrying anything like a crop are on walls, and consist of Easter Beurré, Beurré d'Aremburg, and Louise Bonne, and the only standard sort carrying a good crop is Hesse. The cause of partial failure I attribute to early May frosts. Nevertheless, fruit rooms will be better stocked this year than last. Plums on walls are a good average; of those bearing good crops, white Magnum Bonum, Jefferson's and Nectarine may be cited; on standards there are none. Cherries very full, notably Archduke, May Duke, White Hart, and Morellos, the latter on north aspects; of Apricots we have none, Nectarines none, and very few Peaches; these three, and particularly the latter two are little or no use here as outside fruit. Small fruits are excellent. Gooseberries all sorts, heavily laden, old bushes requiring the shoots to be propped up; the same may be said of Currants, Red, White, and Black. Raspberries are similarly well laden. Strawberries are fine in quality as well as in quantity. My favourites are Garibaldi, Vicomtesse Héricart de Thury, and President.

Potato coops in this neighbourhood looking remarkably well, those taken up being first-rate in quality and quantity, late, and field supplies very promising, and no signs of any disease as yet. —S. KEVAN.

**Fota Island, Cork.**—Apples an average crop and likely to be of good quality; the kinds that are most plentiful are Lord Suffield, Hawthornden, Northern Greening, Codlins, Roundway's Magnum Bonum, a grand Apple not much known, Dumelow's Seedling, and Cobham; Dessert—Irish Peach, Kerry Pippin, Juneating, Red Ingestre, King of Pippins, &c. Pears a good crop, and likely to be of good quality. Williams' Bon Chretien, Duchesse d'Angoulême, Comte de Lamy, a very heavy crop. Other kinds are good. Beurre Diel, Beurre Hardy, Louise Bonne, Autumn Bergamot, &c. Small fruits of good quality, but the Strawberry crop was *nil* in places; in others, abundant and good. It was so here; but from other gardens, where the plants were equally as healthy, they flowered freely, but no fruit. Nuts a heavy crop. Plums under average. Peaches with glass copings a fair crop, but trees much blistered in consequence of a severe check by the cold in April and May. Cherries on walls have been abundant and good. Altogether, the season here is favourable for all vegetation. —W. OSBORNE.

#### FRUIT GROWING IN AMERICA.

THERE is perhaps no country in the world better adapted to the cultivation of fruit, as far as bright skies and hot suns go, than the United States, while there is no country so bad for insects. It is impossible in the Northern and Middle States to grow Apricots, Nectarines, and Plums in the open air, in consequence of the ravages of the Cuckoo, a little beetle, which



stings the fruit when just parting from the blossom, deposits an egg, sometimes several, which soon becomes a maggot, which eats its way to the heart of the fruit, causing it to fall. Every sort of remedy has been suggested and tried for this enemy—jarring the trees over a sheet spread on the ground, picking up the fallen Cuculios and stung fruit, and covering the trees with fine mosquito netting. I have a house, 30 ft. by 20 ft., completely made of wire, which is planted with Plums and Nectarines; this keeps out the Cuculio, but probably prevents the thorough ripening of the wood, as the fruits generally fall.

The impossibility of growing any of the smooth-skinned fruits outside has necessitated the introduction of fruit houses, where the fruit is grown to fine size and colour, but deficient in flavour, and I write this to ascertain through THE GARDEN the difference in England in flavour between fruit grown under glass and the same varieties outside on walls or as standards. We have no difficulty in ripening the finest Peaches as standards in the open air, which are all that can be desired in size, colour, and flavour, since the thick, woolly skin of the Peaches seems to prevent the attack of the Cuculio; but smooth skin fruits—even Cherries to some extent—it is impossible to grow.

A large grower of fruit near Boston has a very fine show of Nectarines and Plums this year thoroughly exposed to the air, the sashes having been removed from his glasshouses July 1 when the Cuculio season has passed; but his fruit, especially Plums, he describes as tasting like a piece of cloth. In some of my own houses I have every other sash, 8 ft. long by 4 ft. wide, taken off in May, and the top sashes also removed and wire sashes put in their place, as is also done with the doors at either end. Yet, though well coloured, the flavour is far from what it used to be in old times before the Cuculio came. In addition to this enemy, we have another more fatal to the trees—a borer—which, spring and autumn, gets into the trees just above the crown, and if not taken out by a knife or wire in two or three years completely girdles the tree and destroys it. The result of all these troubles is an almost total disappearance of Nectarines, Apricots, and the finer Plums in market. In fact, I doubt if many persons under thirty ever saw an Apricot or Nectarine, and but very few Plums. Apples and Pears are abundant, though the former requires a semi-annual examination for the borer, and the fruit is always more or less stung by the Codlin moth. Nectarines, Plums, and Apricots are hardly ever planted anywhere, even in the best gardens, and though Nectarines, Apricots, and Plums are abundant under glass, yet so discouraged are planters at this total absence of flavour of fruit under glass, whether forced or in unheated houses, that before long they will, I am afraid, disappear also. What is your experience in England with fruit under glass as compared with that outside?

HENRY WINTHROP SARGENT.

Wodeneth, Fishkill-on-Hudson, U.S.A.

**Madresfield Court Grape.**—In one of the Vineries at Swanmore Park, Bishop's Waltham, there is a grand crop of this Grape, the whole being as perfect in colour and finish as they are fine in both bunch and berry. There is an entire absence of cracking—a failing common to this variety in the hands of most cultivators. Mr. Molyneux attributes his success in its culture, particularly in preventing cracking, to never stopping the laterals, but in allowing them to run, and certainly they were growing in a state of wildness. No doubt many of your readers will be glad to have this hint as

to how to prevent the cracking in this fine Grape.—H. W.

**Paste v. Coal Tar.**—Thanks to Dr. Newington for the relief he has afforded to at least one of your readers by ridding him of the "coal tar" nightmare, for even though he is only given "skilly," he much prefers it to the poisonous and dangerous recipe promulgated by those who, to say the least, ought to know better.—W. H.

**Out-door Grapes.**—I have not seen these so promising since 1870. The present tropical weather just suits them, and if given plenty of water and not over-cropped, they will this season bear comparison with a good many hothouse Grapes. The old white Dutch Sweetwater is the most fruitful, but at the present time the hardy Black Esperione is best in appearance.—W.

**The Loquat** (*Eriobotrya japonica*).—Although seldom grown as a dessert fruit, this Japanese shrub is well worthy of culture wherever space can be afforded it in a cool house, for being nearly hardy it only requires slight protection to keep it safe through the winter; in fact in mild districts it might safely be grown on open walls in ordinary winters; but, like most of our fruit-bearing trees, it flowers early in the season and would probably require protection from spring frosts as much as from the cold of winter. We have a large tree planted in an Orangery that every



The Loquat Flowers and Fruit (reduced).

year produces perfect fruits, ripening about this date, and they form an agreeable change in the dessert, as it is very pleasant to the taste. Apart from its fruit, the Loquat is well worth cultivating as a fine foliage plant, the leaves being very handsome, and as an evergreen for a cool house. It thrives in a soil such as Oranges are usually planted in, and the two may be grown together. It is an excellent subject for covering a wall in a glass-covered corridor, and would doubtless be very fruitful in such a position if it could get light and sun heat. The flowers are white, borne in bunches at the top of the shoots, and they usually set from three to five fruits in a bunch; each fruit contains a large seed like a Bean, by which means it may be propagated, or it may be grafted on Quince stocks like a Pear.—J. GROOM, Linton.

#### Two Strawberry Plants in a Pot.

To advocate such a practice as this must require some courage, but I unhesitatingly pronounce the system a mistake, and hope none of your readers will adopt either that or the plan of securing plants advocated by "Anon" at page 90, but continue the plan of layering the runners directly in the pots, these being plunged between the rows of old plants, and allowed to derive nutriment from the parent plant till able to support themselves by their own roots. Plants obtained thus will be doubly as strong as those that have been shaded, crowded, and drawn by coddling in a frame.—W. W.

**The Black Naples Currant.**—Amongst bush fruits the Black Currant holds a foremost

place as a remunerative crop, provided one has a suitable position in which to grow it, viz., where some shelter can be given from cutting winds, and where the soil is deep, rich, and moist, or where it can be made so by artificial means. On light sandy soils the Red Currant succeeds better, but it is not so remunerative. The best sort of Currant to plant is the Black Naples, a very fine and prolific variety. It is rapidly superseding other sorts here; in fact, it is almost exclusively planted whenever fresh plantations are made. Healthy young bushes, set out 6 ft. apart each way, and kept carefully thinned, and young wood being constantly brought up from the base, produce profitable crops for market. A single row of vegetables may be planted between the rows the first two seasons, after which they will profitably occupy all the ground.—J. GROOM, Linton, near Maidstone.

#### Space and Cultivation for Orchards.

—Wm. Sanders, of Washington, has observed that the outside rows of the trees in Apple orchards always grow more luxuriantly than the interior rows. He attributes this superior growth to the cultivation of the soil in the adjacent fields, by which the roots of the outer trees are benefited as they extend beyond the orchard boundary. We therefore infer that the orchards he has seen do not receive cultivation. He suggests setting the trees in two parallel rows, 30 ft. apart, with spaces 300 ft. between these double rows for cultivating in hoed crops. It is evident, however, that the same benefit would be secured by cultivating a regularly planted orchard; and if 30 ft. is too near, greater space should be given them, say 40 ft. or 50 ft. The great requisite is cultivation for young orchards, and top-dressing with manure for old and bearing ones. The fact, which has been fully shown, that the roots of Apple trees, even in orchards not more than ten or twelve years old, extend far enough to cover the whole surface of the ground, and that in trees, young or old, the roots are about twice as long as the entire height of the trees, shows that they will do best with plenty of space; but cultivation and manure will supply the demand, which without them must be obtained by greater distances.—Country Gentleman.

**Pot Culture v. Root Pruning.**—I was pleased to see the remarks of "Peregrine" and Mr. Fish on this subject, for they both aim at what we all most desire, viz., to cause fruit to be more abundant and cheap, so as to come within the reach of all, and the only debatable point is how this desideratum is most likely to be effected. "Peregrine" evidently did not recommend pot culture pure and simple for confining the roots of trees to a given space, thereby insuring fertility, but such partial checks to their unfettered development as should do away with the necessity for root pruning. This might also be done by putting in a slate or concrete foundation to prevent the tap-roots from running down, but still letting the side or horizontal roots grow as they please. I do not think that "Peregrine" or any one else seriously believes that the Rivers' or pot system of fruit culture is ever likely to supply us with cheaper fruit than we now get. It is well suited for orchard houses in which fruit may be got out of its ordinary season, but that is all. We will do well, I think, to let both pot culture and pot pruning alone, except, as I have said, where fruit is required out of its ordinary season. Mr. Fish (p. 32) says, "It is quite a mistake to suppose that those who practise this short cut to fertility are always, or even often, at it. Nothing of the sort. Trees once led into fertility at the point of the knife are not likely to need a second edition of this sort of thing." Any one interested in fruit can see it grown in quantity all round this neighbourhood, but they would never get any practical lessons in root pruning except as a final measure when the tree is grubbed up. What is called here half a crop would astonish root pruners. For the safety of their trees fertility is effected by means of suitable sorts, and suitable stocks, and judicious pruning. The roots are also mulched.—J. GROOM, Linton, near Maidstone.



**Vine Leaves.**—*J. K.*—They appear to be scorched. Is your ventilation sufficient?—*M.*

**The Gooseberry Caterpillar.**—I hope next year to try Mr. George Berry's recipe of Fir-tree oil, mixed with soft water, for the gooseberry blight, mentioned in *THE GARDEN* (p. 93). Our gooseberry bushes were attacked this season, and although the cuckoo is said to clear off the grubs, and our garden is open to the cuckoos in the outskirts of a village, and the cuckoos were numerous and might have worked their will before the village was awake, early morning songsters as they are, the grubs increased. None of the useful garden pest-destroyers came to the rescue, and the bushes would soon have been stripped naked, when we applied the well-known remedy of the fingers. After trying a thick sprinkling of flowers of sulphur, as well as ashes, both of which proved of no avail, ten nimble fingers set to work, and so the enemy was destroyed. But picking is a slow process. I hope to try the Fir-tree oil.—*E. H.*

### SEASONABLE WORK.

**Peaches.**—If the weather continues hot and dry, trees in early houses will derive great benefit from exposure to showers of rain and night-dew, either by the entire removal of portable lights, or by drawing them off and replacing them through the day. When growing under a fixed roof, heavy syringing above and below the leaves will require great diligence, and it may be necessary to give them an occasional wash with a solution of Gishurst compound or soft soap and sulphur, to keep down red spider. Inside borders must have plenty of water, and the outside roots will be the better for a heavy mulching, to prevent evaporation.

**Succession Houses** now clear of fruit may be divested of all useless wood and spray, in order to give the trees the full benefit of light and air. Wash well with the engine, give liberal supplies of water to the roots, and ventilate to the full extremity. Late houses, in which the intensely hot weather of the past few weeks justified a free and unrestricted growth, may now be thinned and tied down, and where trees have filled the allotted space many of the shoots not absolutely leaders may be pinched or shortened back, for the two-fold purpose of letting in light and air, and increasing the size of the fruit. Where the latter are hanging below the trellis an effort should be made to get them raised above the foliage to insure colour. This work may be most conveniently performed as tying-down is proceeded with, when a dexterous man, with short pieces of thin lath laid across the trellis, will elevate 75 per cent. of the finest Peaches.

**Strawberries.**—A hot, dry summer is not the most favourable to the rooting of runners in small 3-in. pots; but where this system has been commenced the pots should be kept in blocks for the convenience of giving water every night. Many growers adopt a plan recommended by the late Dr. Lindley, viz., that of filling the fruiting pots and pegging the runners on them at once. We have prepared the plants in this way, and can speak well of the system, as strong crowns, with an abundance of roots, are secured in a short time, and labour is greatly economised. But whichever plan is adopted, an early start and removal as soon as the roots reach the sides of the pots, are items that must not be neglected. When rooted, a good bed of ashes or boards should be placed in an open, airy situation. The plants should have an abundance of room, and the application of water should be deferred until after sunset. Strong calcareous loam suits strawberries best, and small pots containing single plants are generally used for early work; but the drawback which attends the use of very small pots is the early ripening and premature excitement of the crowns in mild autumns.

W. COLEMAN.

## THE KITCHEN GARDEN.

### FORCING VEGETABLES.

KEEPING in view the object your correspondent "H." namely, the erection of houses for special sorts of vegetables, I think that Asparagus cannot be left out of account as a succulent green vegetable for winter; of course it may not only be grown under glass, as are Peas or Kidney Beans, but it may be forced with greater economy of labour and appliances, and with surer results than either Peas or Beans; indeed, it may be said to be grown from roots instead of from seeds, as in their case. A house constructed for the combined forcing of Peas and Asparagus will be found useful and economical, the main object being Asparagus. It is usually forced in frames over heaps of hot manure or leaves, or in pits over fermenting leaves and stable litter, assisted with hot-water pipes, which is found to be a satisfactory plan. Asparagus is sometimes forced on the quarter on which it is grown, under movable frames with hot-water pipes placed under the beds to be used at convenience; and yet another plan is to have the beds

lined with brickwork, with deep trenches between, 4 ft. each way or so, into which fermenting materials are placed when forcing is to be commenced. Most of these plans are clumsy, taking the preparatory labour into consideration; some of them very expensive, considering the limited extent to which the latter mode, for instance, can be applied and the final result of all the labour directed to the object. There are good gardeners of my acquaintance who advocate and practise the several plans. Under any circumstance the roots must first be well grown, and then as to the appliances for forcing it is a question of comparative expense. Makeshift plans are not the cheapest in the end, and pits are nearly as expensive as houses considering their available area. If we were to build a house specially for forcing Asparagus, it would be one for the combined growth of Peas and Asparagus in winter. A narrow house, say 12 ft. wide (we have used a similar house, though not built for the purpose), hipped roof, with a shallow brick-built bed in the middle, like a Mushroom house shelf, say 9 in. deep and 6 ft. wide with two pipes underneath, a narrow path all round with a box next the front glass and against the wall behind for Peas, the bed in the middle, of course, for the Asparagus, which must be lifted from the open ground and packed close in the bed on a layer of leaf-mould, covering it with the same material. Of course a couple of pipes will be required in front for top heat. This would be a handy and economical house for the forcing of early Asparagus, and the heavy labour of gathering and manipulating quantities of fermenting materials would be obviated. Asparagus can easily be cut before November is out if required, and a succession maintained throughout the winter easily in such a house in the severest weather. We do not here go into the problem of growing the Asparagus, nor the operation of lifting, but simply suggest the best appliance for securing good green Asparagus in winter. Tomatoes cannot be called green vegetables in a strict sense of the term, but a ripe plump Tomato may be called green in the sense of crispness and freshness. Tomatoes may be grown very late, and also very early. An amateur friend of ours is an expert at Tomato growing; he last week realised 3d. each for his Tomatoes in the local market; he endeavours to have the late as well as early, but not all the year round. His plan, originating with himself, we may describe some future time; in the meantime, the plan we would recommend for very early and very late Tomatoes, and that which has best answered our purpose, is to grow them after the manner of Vines to single stems, cordon principle, if the roof of a lean-to house, the roots being in a narrow box over bottom heat in winter; light is always the object which should be first considered in the building of any house. We have grown them in a Cucumber house in the company of Cucumbers in winter. A special house for their culture might be made with a partially sunk passage behind to give head room, with a steep lean-to roof with a height of 9 ft., two pipes laid horizontally in front on which a long narrow box shall rest in which the Tomatoes are to be planted; the box need not be more than 18 in. deep by 14 in. wide; two more pipes would be required in the passage for top heat. The house may be 6 ft. or 8 ft. wide. Such a house 6 ft. wide we have used; the necessity for the sunk passage behind will thus be evident. Altogether a different house would be suitable for summer Tomatoes.

HIBERNIAN.

**Transplanting Leeks.**—These should be got out without delay if still in the seed bed, and

to insure large white stalks large holes should be made in the soil with an iron bar, and the Leeks let in to the bottom with the tip of the leaves just protruding. A little soil may be worked in to cover the roots, and a good soaking of water given to start them growing, after which the soil may be filled in as growth progresses when hoeing the crop.—*J. G. L.*

**Sowing Spinach.**—I find a good large bed of the Round Seeded or Summer Spinach always useful sown at this time of year for autumn and early winter use, for it removes the necessity of commencing the real winter Spinach until it has made a good growth. Ground from which Peas or early Potatoes have been removed answers well if lightly forked over and sown at once.—*J. G. L.*

**Varieties of Peas.**—On February 8 I sowed in boxes William the First, Dickson's First and Best, and Day's Early Sunrise, and put them in a cold pit under glass, planted them out on March 22, gathered my first Peas from all three varieties on the 6th of June. Day's Early Sunrise, although a little deficient in flavour, is one of the earliest and most productive Peas grown. I find, after two seasons' trials with Culverwell's Telegraph and Carter's Telephone, the two are one and the same Pea (Culverwell's Telegraph). I hear a good account of Carter's new Pea Stratagem, but have not seen it. Culverwell's Giant Marrow is decidedly a grand Pea. Here it is growing 6 ft. in height, with a strong branching habit, covered from top to bottom with giant pods containing from ten to thirteen Peas of the most exquisite flavour.—*RICHARD NISBET, Aswarby Park.*

### LANGLEY SEED GROUNDS.

WITHIN the past few years an extensive area of land in the neighbourhood of Slough has been acquired by Messrs. Veitch & Sons, Chelsea, with the view of growing on a larger scale than hitherto annual flowers and vegetables for seed purposes, and also to carry out more effectually the trial of the various seeds sold by them than they are able to do at their trial grounds at Chiswick. The farm is situated near the Langley Station, on the Great Western Railway, and travellers by that route have a fine view of that portion skirting the line, which, during summer, is resplendent with broad masses of colour of the annuals, Roses, and other flowers. The present is the most interesting time to visit places of this description, as now the annuals are at their best, and the vegetables are likewise in a matured stage, so that the various kinds may be readily distinguished. The latter are grown in broad plots, so arranged that the varieties may be readily compared with each other, and also to secure as much as possible the purity of each particular kind, which is continually being carried out by means of what is called "roguing" or weeding out spurious sorts. The same careful system is carried out with regard to all the subjects grown, be it flower or vegetable, and it is interesting to observe how some plots are almost bare on account of the weeding out, while others are left intact.

Not only are annuals grown, but there is also a collection of the finer types of hardy perennials, and it is intended to extend their culture. Already there are some fine collections of such things as Primulas, Carnations, Violas, Sweet Williams, Polyanthes, besides the splendid stock of Iris Kämpferi, occupying what was formerly a cottage garden, which, being composed of good soil and sheltered, is highly conducive to their successful growth, though this season, as everywhere, they are not nearly so fine as the last. The collection comprises the splendid new varieties sent from Japan by Mr. Maries, many of which have been exhibited and certificated. There were some wonderfully fine flowers expanded the other day, some being



fully 6 in. across of beautiful dark velvety tints, from pale purple and violet to the deepest shades, while others equally as large were delicately pencilled and feathered with dark lines on a light ground; some are single and others double-flowered. The best of the named varieties were, Jersey Belle, Sir Richard Wallace, Prince Imperial, Sir Stafford Northcote, Splendens, Violet Queen, Mrs. Cornwallis West, Magnificence, Delicata, Charles Maries, and Imperial Wonder, all of which are very beautiful, and represent a wonderful variety of colour, size, and form.

The Sweet Williams are all of the Auricula flowered type, viz., perfectly circular white flowers with one or two well defined rings of some shade of crimson on the petals. An ideal flower should possess a perfectly smooth edge to the corolla, which the strain here approaches nearest to than any we have seen. One peculiarity we noticed among the Sweet Williams here is that some of the dark-flowered kinds never expand their blossoms, yet they produce seed freely and plentifully.

The annuals form here the most attractive feature just now, and they are indeed very fine this year, though their beauty has been somewhat impaired by the excessive heat and drought we have lately had. Transcribing from our notebook a few of the most noteworthy kinds, we begin with the—

**Candytufts**, which make a bright display, especially the new carmine and the new dwarf hybrid kinds. These latter are particularly fine, being so distinct from the older kinds on account of their extreme dwarfness, compact growth, and floriferousness. One pure white kind we singled out among others that had unusually large heads produced in a dense flat tuft similar to an alpine plant; indeed, such varieties as these, are excellent subjects for the rock garden, and possess all the charms that render alpine flowers so enjoyable. Near to the Candytufts is a large plot of double annual Larkspur, the Hyacinth and Ranunculus-flowered. These, with their dense Hyacinth-like spikes of bloom of varied hues of pink, purple, white, blue, and red, resemble more a large mass of Hyacinths in a Dutch bulb farm than anything we have seen, and yet such fine things as these are not nearly so much known in gardens as many plants of lesser merit, yet no finer annual exists for mixed borders.

**Mignonette** is no longer represented by one form only; besides Miles' New Spiral there is Garraway's New White, which when seen in perfection is a beautiful plant. There is a still finer white, which has had its origin in this establishment, that we shall probably hear more of in future. Queen Victoria and Golden Queen are two fine varieties, both having the stamens of a reddish hue, so much so as to give them quite a distinct appearance. The tall pyramidal and the Giant Red pyramidal are in strong contrast to the Dwarf Compact, so highly valued for pot culture. The perfume from these broad masses of Mignonette may be better imagined than described.

**Canterbury Bells** are in strong force and in beautiful variety. Besides the rose-white and blue, both single and double flowers, there are the Calycanthema section, which are quite a speciality here, and a new rose-coloured sort is the result of many years' patience. This is not yet in commerce, but it will inevitably become popular, as it is so distinct from other sorts. The Xeranthemums are very pretty annuals, and especially valuable for drying for winter use. The varieties superbissimum and gomphreniflorum are the best; the former is very double, and forms quite a globe of petals. Among the Tropæolums we noticed a form of Lobbianum

named fulgens which originated here. The flowers are intensely brilliant scarlet-crimson, while the foliage is a deep purplish-green—a striking contrast with the flowers. It is of dwarf compact growth, and well suited for border culture. Petunias were very gay, particularly a striped variety called elegantissima, extremely effective in masses, and by far the best of the sorts we saw.

**Fringed and French Poppies** are both as gay as any flowers in the grounds, for, indeed, there are few flowers that can surpass them in the brilliancy as well as in the diversity of their tints—every conceivable shade, from the deepest crimson and the most vivid scarlet to pure white, and also every shade of purple and violet. There are the Carnation flowered, the Pæony-flowered, and the dwarf French double-flowered. Nothing can well excel the exquisite blossoms of these French Poppies; their peculiar crumpled appearance, their satiny lustre and



Fringed Poppies.

vivid tints, combined with the fact that they are as simply grown as any hardy plant, render them very valuable for the garden.

Among vegetables, Peas are noteworthy for their great variety, including several unnamed kinds under trial which will shortly be put in commerce. One of the named kinds called Sturdy is remarkable for its dwarf growth (not more than 2 ft.), extreme fruitfulness, and size of pod, which invariably contains eight Peas. The flavour is said to be excellent, which, coupled with its other qualities, constitutes a variety of sterling worth.

Those selected for naming and distributing are, of course, improvements on existing varieties, being characterised by robust growth, extreme prolificness, with a minimum of haulm, and the flavour—the most desirable quality—is said to be good. Among the Broad Beans, of which there are likewise several sorts under trial, we noted one called Hangdown Longpod, remarkable for the singular manner in which the pods depend. It is very prolific, and the pods are of unusual length and size. Another sort, called The Gem, is very dwarf, but extremely prolific. Some plots of the new Lily White Kale is now in seed, and in this condition its distinctiveness from other sorts is very apparent,

In the Melon and Cucumber ground we observed that Queen Anne's Pocket Melon and Duke of Edinburgh Cucumber were represented most numerous—a proof of the well maintained excellence of these sorts.

The soil seems to be particularly well adapted for the growth of Roses, of which there is a large stock, no fewer than 18,000 Manetti stocks being grown on quarters, and their rude health indicates well that the soil and locality suit this stock; and it clearly shows, too, that this firm is putting great reliance on this particular kind of Rose stock. W. G.

#### FROM DUBLIN.

**Balsamita grandiflora** is also a distinct and effective plant of bold and clean habit of growth. Every one admires it, but no one knows anything of it. Our solitary specimen is now supported by two or three dozen strong seedlings, and you may offer it to any good man who will appreciate the plant. Another big Golden Daisy is *Inula glandulosa*, with solitary flowers on stalks 15 in. high, well supported by lance-shaped root leaves. Its flowers are singularly like those of *Telekia*, but then the latter plant bears a great tall branched stalk with a dozen or more of its great Sunflowers spread out on the top, as you will have seen by specimens jammed into a box for you a week ago nearly. I am glad to say that there is less bare earth visible here now than ever I saw before. A good way of fighting weeds is to plant flowers well and abundantly. It is the true way to keep weeds at bay, and to render staking unnecessary. Take the lesson of the Wheat field—the slender wands are easily broken unless well supported on all sides. But Wheat straws 1 ft. apart stand and sway as gracefully in the wind and as safely as the thick-boled Firs of the mountain side. I never forgot the lesson of the Rhubarb roots planted beside a dirty ditch at Ware's as a cordon to keep weeds from creeping into that deep rich bed of white Japan Lilies. It taught me that the hoe is not everything in a weedy garden, although useful in its way.

Do you remember Mr. Rawson giving me a handful of little bulbs from a pot in his greenhouse when we called upon him last year at this time?—spawn (*i.e.*, small bulblets) he called it, of *Spatalanthus speciosus*. They have just now flowered with me, bearing gorgeous stars of pure magenta, size and shape nigh to the flowers of *Tecophylæa*. They are *Gazania* like, opening only in sunshine, but the effect of a pot in flower was quite a new sensation to me, *blasé* as I thought myself to be in the way of flower seeing. It seems to like cool and moist treatment, and when you try and recollect how seldom we do see Cape bulbs even fairly well bloomed, you may, like myself, begin to doubt if after all the "bake and dribble" way of growing them is the right and best way. An old colonist from the Cape has just told me that tracts beside the rivers and at the foot of the hill ranges are often months under water perfumed by Cape Pondweed, and that at another time of the year you may ride over the same tracts with *Disas*, *Gladiolus*, *Watsonias*, *Ixias*, and other flowers, bulbous or herbaceous, dragging at your feet in the stirrup leathers, and now and then they are in clumps tall enough for one to smell their fragrance and examine them close to the eye as one sits in the saddle.

Like others, I found out that saving the seeds of hardy perennials in paper and packets led to poor results. Our present plan is to sow everything as soon as the seeds ripen in a large seed bed in a sheltered position. This bed is constantly refreshed with sifted earth, the refuse of the potting benches, and as soon as the seedlings are fit to remove they are pricked off into other beds or, in the case of strong young plants, removed into their permanent places in the border at once. This is work for showery weather, and the results are very satisfactory if the seeds be sown thinly



The Evening or Night-scented Tobacco, of which Mr. Cullingford spoke so highly in THE GARDEN (p. 21) under the name of *Nicotiana affinis*, is really well worth attention. It has been in bloom here for two years without intermission, and is much liked for its grateful fragrance. It was figured in the *Botanical Magazine* many years ago as *N. longiflora*, and is now grown in some gardens as *N. undulata*. Raised from seed in heat, and planted out in May or June, it blooms more profusely in open air than in pots. It is in all ways satisfactory—easy to raise, easy to grow, and sure to please those who like fragrant blossoms.

F. W. B.

### THE GARDENERS' PARTY AT CAUNTON.

It was a garden party of gardeners; a happily conceived and splendidly carried out idea. Nottinghamshire, chiefly, was represented by her leading gardeners. Belvoir's chief was there, with Henderson from Thoresby, Miller from Clumber, Gadd from Wollaton, Newstead's gardener, with Lyon of Ossington, the head gardener at Grove Hall, with homely Battersby of Winkburn, Merrywether of Southwell, and various others.

It was a grand day, weather-wisely; a day full of summer glory. But some may say—"A garden party of gardeners! Why, they could have no particular interest in a garden, seeing that they each have one of their own, and some of them a larger one. They would see all there was in it in an hour." Yes, perhaps they would, if it had been a garden over which Mrs. Grundy presided, but not the garden of Cauntun Manor, and certainly not with its ruler and chief in attendance, making every one at home in a moment, directing attention to and explaining all explainable things, not talking so much himself as leading on his visitors to talk, and by gentle and apt questions causing the most silent to speak freely, and at their best, too, to their great astonishment—the host withal illustrating the conversation by pithy query, by witty saying, and humorous anecdote. Roses of course were everywhere. As one said, "Drop a Rose plant down anywhere at Cauntun and it will grow, and grow good Roses, too." So it appears from the quantity grown, the diversity of places where they are grown, and the excellence of the blooms upon them all. We went into a place full of Roses, and we said, "Oh, here's the Rose garden!" Quite true, it was; but let us go round that corner, and there's another place full as large as this. Go round another corner, more Roses; and another, and again another, more Roses; and so on. There are Roses on the lawn, Roses in the orchard, Roses in the kitchen garden, Roses here, Roses there, Roses everywhere. The whole village follows suit; there are Roses in all stages of their growth in almost every garden. Look where you would you saw Roses; and last, but not least, the beautiful parish church is, not covered certainly, but well clothed with Roses and Ivy. The present writer made a special walk to the church in order to see the historical Gloire de Dijon Rose; a Rose with a glorious history, and which is blooming even now, after the cruel usage to which the frost of the last two winters has subjected it.

Anybody who has heard of the Cauntun Roses will know at once that they were in good form and condition; so good, so perfect, as well as so many, that the note-books of those who took notes were soon pages full, as also were the heads of those who, despising the weakness of note making, preferred piling the names one on the top of another inside those heads; and, strange to say, on that day (Tuesday, July 12, 1881) Reynolds Hole, the dark crimson Rose—the Rose that bears the familiar name of our host—was the best Rose of the day. I'll engage to say that amongst the list of Roses in any one's note-book at Cauntun that day stands first the name of Reynolds Hole. The Rev. Canon's hospitality was, as every one knows who has ever been the recipient of it at Cauntun, full, all-surrounding, complete; and the graceful, kindly, speech of welcome made by him

after dinner was from his very heart. It was not a day for speeches, but for happy chat, and it was made the most of; yet Mr. Ingram pleased every guest when he, in their name, proposed the health of the host in a few admirably chosen words, a short speech which summed up the feelings of each one to perfection.

We walked round the small, but excellently arranged, well managed rock garden, a pretty sight in itself, with prettier sights of the surrounding country from certain parts of it. Towards the end of the day, the lady of the house took those who cared to go amongst her hives, and astounded all who saw her as she with deft fingers, and in the coolest manner possible, handled the bars of comb with the bees swarming about her, and yet none hurting her, all the while explaining the simplicity of bee arrangements, and the profitable nature of their work.

We saw the club room of the immortal Six of Spades. [See p. 4 of "The Six of Spades," by S. R. H.] It was not difficult for some of us to discover—to our satisfaction, at least—who were the originals of the glorious Six. The president and curate were certainly with us on Tuesday, and Mr. Oldacre had a good story to tell of a visit he had had lately from Joseph Grundy, who had pinned him into a corner and put him through a catechism of questions about "them Vines as we planted." Mr. Evans, dear odd old man, is gone to the better land, and Mr. Chiswick is grown older and is getting grey. The present gardener at Cauntun may stand for a modern Mr. Chiswick. But all through the day, the spirit which pervaded the whole of the day's proceedings was that "joy in a garden" of which the curate tells so sweetly in the last chapter of that book of all books about gardeners already mentioned, "The Six of Spades."

For the satisfaction of those who would like to know what good Roses were out at Cauntun on the 12th, I give the following list taken as put down from my note-book:—

#### Hybrid Perpetuals.

Reynolds Hole  
La France  
Captain Christy  
Duke of Wellington  
Louis Van Houtte  
Dupuy Jamin  
Marie Finger  
Xavier Olibo  
Duchesse de Vallombrosa  
Etienne Levet

François Michelon  
Fisher Holmes  
Emily Hausburg  
Auguste Rigotard  
Marie Raby  
Marie Baumann  
Camille Bernardin  
Souvenir de Spa  
A. K. Williams

#### Tea and Noisette Roses.

Marie Van Houtte  
Souvenir d'Elise  
Madame Lambert  
Souvenir de Paul Neron  
Aline Sisley  
Anna Ollivier

Duchess of Edinburgh  
Cheshunt Hybrid  
Caroline Kuster, and, best of all for some purposes, our English Devonensis.

P.

### NOTES OF THE WEEK.

**Zephyranthes rosea**, in a cool greenhouse at the Botanic Gardens, Edinburgh, is one of the prettiest plants now in bloom there.

**The Baneberry** (*Actæa racemosa*).—A distinct and bold plant is now in flower and might be admired by some, but it has one of the most offensive odours known among plants, and that is saying a good deal.

**The Rose Water Lily.**—Sir Charles Isham writes from Lamport Hall, Notts: "My Red Water Lily, which made but little progress for two seasons, has now spread out well, and has had three flowers in colour better than your beautiful figure."

**Lightning.**—We had a fine Deodar that measured more than 12 ft. in girth 1 ft. from the ground shattered to pieces by lightning on the 6th of this month. I planted it in October, 1834; it is the largest we have had, but not the tallest.—PHILIP FROST, *Dropmore*.

**Coreopsis lanceolata.**—This is a bright and handsome perennial for the late summer and early autumn, rich gold in colour, and beautiful in form of ray; few composite flowers equal it in these respects. Miss Jekyll, in sending good

specimens, says it is one of the flowers that best repays attention in the way of cutting off dead blooms. With it another good perennial, the dwarf form of *Helium autumnale* which seems to flower earlier than the tall form.

**Nymphæa odorata rubra.**—M. Lebeuf, of Argenteuil, writes to us stating that he has this plant in flower. He considers it superior in colour and form to the rose-coloured European Water Lily. They are both very interesting plants, which, however, will require long trial before we can tell their value as compared with each other or as hardy water plants.

**Tropæolum speciosum.**—This plant has at last thoroughly established itself in the cottage garden here. It has clothed a large shrub of *Garrya elliptica* and one *Periploca græca*, and hanging in festoons about them, is most beautiful, and it seems fruiting well.—GEORGE F. WILSON, *Heatherbank, Weybridge*.

**Yuccas in Flower.**—Just now the Yuccas are among the most beautiful plants in flower, and if grown for their bloom alone would deserve to be extensively planted, for their beautiful spikes of white blossoms, in some cases tinted with yellow or green, are not only very striking, but remain in beauty a long time, and combined with the bold arched foliage of *Y. gloriosa* or the smaller, but interesting *Yucca filamentosa*, *recurva*, and *flaccida*, form very conspicuous objects.—ALPHA.

**Hypericum grandiflorum.**—This, as seen growing in Mr. Stevens' garden, is one of the most attractive of hardy flowers. The foliage is broad and intensely green. The flowers are large and of the finest golden-yellow, to which the mass of bright cinnamon-coloured anthers form a charming contrast. Arid heat and long protracted drought do not appear to make the slightest impression upon it, for it is flowering on freely, and wears altogether as fresh and bright appearance as if the season had been of the most genial description.—C.

**Finely-flowered Hæmanthus.**—The other day Mr. Peter Barr sent us a fine specimen, under the name of *H. Katherina*, but what appeared to be an exceptionally fine flower-spike of *H. Kalbreyeri*. The globular head of vermilion tinted blossoms measured fully 11 in. in diameter, and the singular protruding stamens tipped with yellow anthers were extremely pretty. If this kind is what we suppose it is, the plant is far better grown than we have seen it hitherto, and clearly indicates what a splendid plant it is. We gave a coloured illustration of *H. Kalbreyeri* in THE GARDEN, Vol. XVI., p. 138.

**A New Hardy Water Lily.**—We have been much pleased to see several strong tufts of *Nymphæa tuberosa* in the open air tank at Kew. The leaves of this N. American kind stand above the water in close tufts, somewhat concealing the flowers. We have never in this country seen the other hardy N. American Water Lily (*N. odorata*) well grown. A poor little sickly plant usually does duty for it, whereas in the New England lakes it is a bold, handsome plant. It would be very interesting to see the various hardy Water Lilies grown together and well grown.

**The American Fruit Crop.**—From the various reports in the papers, in addition to some personal observations, we learn that the Apple crop, both at the East and West, will be small this year. Although this is the odd or unproductive year, the trees in many places set quite full of blossoms, but a larger proportion of the young fruit than usual has dropped, and left small crops. In some portions of Eastern Pennsylvania, in Delaware and parts of Maryland, an unusually heavy crop is reported, as well as in some of the extreme western counties of New York. A large part of the Peach crop, and in some cases the trees, have been killed by the winter, but when the fruit ripens there will probably be more than was expected by many. Grape Vines in many instances have been killed sufficiently to destroy



or lessen the crop. This is the abundant year for Pears.—*Country Gentleman*.

**Rubus odoratus.**—We have a shoot of this with one leaf over 1 ft. across, so that in addition to its showy flowers, which have earned for it the English name of Flowering Raspberry, the leaf is bold and good in form, and the scent pleasant when rubbed.

**The Bee Balms** with the scarlet flowers (Monarda Kalmiana and M. didyma) remind us of a pleasant aspect of the American woods in early autumn when their red blossoms are scattered under the trees. From Grasmere, good border plants in this country.

**Sweet Williams.**—Good and numerous specimens of these come to us on July 26 from Mr. Caudwell, of Wantage, who says some of the "Sweet Williams (Barlow's Giant) have ragged edges, but they seem too good to discard"—a very true remark. There is no reason why we should discard a Sweet William for a fringed edge. But keeping such Sweet Williams need not prevent us keeping and enjoying those differently formed. It is surprising to see such a good bloom after the great heat.

**A Collection for the Gardeners' Benevolent Institution.**—I am instructed by committee to draw your attention to the accompanying prospectus of this institution, and to seek for your co-operation and support. A strong feeling exists among the supporters of the institution that the amount of the pension is scarcely sufficient, and, the committee sharing this feeling, have determined, if possible, to raise the funds, to increase the pension by £4 per annum. A scheme has been arranged that on a certain day every gardener and horticulturist in the United Kingdom shall be requested to make a simultaneous collection among those employed under him for small sums, and among his friends, and to bring the institution before the notice of his employer. Saturday, the 30th inst., has been fixed for this purpose.—EDW. R. CUTLER, Sec. [We feel assured all our readers will give this movement hearty support.—ED.]

## AMERICAN NOTES.

**The Japan Maples.**—It is an ungracious task to be obliged to tell how sadly the past winter has robbed these of their claims to being considered hardy. We find that *Acer palmatum* or polymorphum, which we said was killed to the ground, is killed outright—roots and all. This seems to us inexplicable for the reason that this is the stock upon which the many varieties of the Japan Maples are worked. Perhaps the death of the *A. palmatum* is due to some other cause besides the severity of the winter. In fact, either this must be accepted as the case or it must be supposed that it is rendered harder by the varieties worked upon it, since the latter, though badly injured, are in no case killed. The Cut-leaved Maple (*Acer dissectum*), a variety of the Norway, is really one of the finest of Maples for ornamental grounds. Its leaves are deeply and peculiarly cut; of a dark green when mature, while the young leaves are as purple as those of the *Schweidler's* Maple.

**A Russian Mulberry.**—On the bare Western plains an interest is felt in every tree and sort of tree that can be made to live and grow. Mr. Clark, of Beatrice, Nebraska, sends an interesting account of the sort of Mulberry brought by the Menonite immigrants from similar arid plains in Russia—the steppes of the Volga, in latitude about 49°. There this Mulberry is the best source of wood for farm supply, and so valuable and indispensable that the new settlers brought along seeds which grow well and, like other sorts of Mulberry, very rapidly when young. The full height of the species is claimed to be about 40 ft. As in other Mulberries, too, the leaves of the seedlings vary in being more or less lobed; some of these are cut as much as those of

any Oak, and these varieties are propagated as trees for ornament as well as use. The fruit is said to be edible and good, but the pale Mulberries are generally inferior both in size and flavour to choice specimens of the dark sorts. Mr. Clark thinks this Russian Mulberry is not of the alba species. Loudon describes a Mulberry native on the steppes as *Morus tatarica*, but thinks it only a geographical variety of alba, having variously scalloped leaves and reddish fruit of no very good flavour.

**The Pendulous Trefoil** (*Desmodium penduliflorum*).—This *Desmodium* is one of the few plants that bloom in late summer and autumn, and it has a gracefully pendent habit and delicate foliage which is embroidered and tasseled with rosy-purple flowers resembling those of the Pea. On many accounts the Pendulous Trefoil finds its most appropriate position in the mixed border of hardy herbaceous plants and hardy shrubs. Its habit of weeping to the ground gives it peculiar value for the outskirts of shrub groups where erect-growing shrubs or even trees need a certain amount of masking to secure their most artistic effect. If this plant, however, had no other qualities of value than its beautiful and abundant August flowers, which last until frost, we should recommend it.

**The Ostheim Cherry.**—Prof. Budd, speaking of the Ostheim Cherry in the *Iowa Homestead*, says he has had several letters from Europe saying it had proven one of the hardiest and most profitable varieties grown on the steppes. Not knowing that it was to be found in this country, he had already ordered trees from the nursery of Dr. Regel, at St. Petersburg, when he incidentally learned that Mr. Meyer, of St. Peter, Minnesota, had brought this variety with him from his home in North Germany, and had fruited it for a number of years in the most trying portion of Minnesota, where he had become discouraged in growing the Apple. Prof. Budd received this spring a few small trees of the Ostheim from Mr. Meyer, the blossom buds upon which were in perfect condition after enduring the past severe winter in their northern position. The hardness of the tree and the fruit buds seem beyond question. The next point of consideration is the size and quality of the fruit. Charles Downing says: "Fruit large; roundish-oblate; skin red, dark at maturity; stalk long; flesh liver-coloured; tender, juicy, almost sweet sub-acid; very good. Season, middle of July."

**Wash for Outbuildings.**—Professor Kedzie, of the Agricultural College of Michigan, an expert chemist, recently said that a paint or wash made of skim-milk, thoroughly skimmed, and water brine will render wood unflammable, and he proved it by experiment. He said this paint or whitewash is durable, very cheap, impervious to water, of agreeable colour, and, as it will prevent wood from taking fire, urged its use, particularly on roofs, outbuildings, barns, &c.—*Rural New Yorker*.

**Gardening on Grass.**—I have not observed that any one has recommended *Bocconia cordata* as a plant suitable for clumps on Grass. We have clumps of it 6 ft. high now in full bloom, growing in soil which has last week required the pick to cut through in the making of a drain near the roots of the *Bocconia*. A noble plant it is, and one which takes care of itself when it gets established. It permits no rival to grow mixed with it. A clump of *Veratrum nigrum* close by rivals the *Bocconia* in height, with spikes of flower of quite a contrast in colour to the *Bocconia*; the flowers of both are equally modest taken individually. Within a few yards is a fine mass of *Funkia Sieboldi*, with its Plantain-like leaves perfect. Another plant of the same is riddled with snails. The carpet one is protected with a broad carpet of sawdust among the stems and under the foliage, which arrangement the snails abhor. By the bye, is the name Plantain Lily derived from the *Musa Plantain*? or from the foliage

of our native *Plantago media*, which, on a small scale, so much resembles the *Funkia*?—HIBERNIA.

## SOCIETIES.

### ROYAL HORTICULTURAL SOCIETY.

JULY 26.

On this occasion the exhibits were few in number, and, with the exception of a collection of Tomatoes grown in pots from Messrs. Carter & Co., possessed but little interest.

**First-class Certificates** were awarded to Messrs. Veitch & Sons for—

**Ixora Burbidgel**, a bright, free-flowering species, similar in character to *I. salicifolia*.

**Lindenia nivalis**, a remarkably distinct plant from Mexico. Its flowers, which are pure white and freely produced, remind one of *Bouvardia Humboldtii corymbiflora*, but they are four or five times as large.

**Tachadenus carinatus**, a small growing, glossy-leaved plant, bearing large bluish-purple blossoms.

To Mons. Lemoine, Nancy, France, for—

**Montbretia crocosmæflora**, similar in every respect to *M. Pottsi* (figured in *THE GARDEN*, Vol. XVII., p. 84), but more robust in habit, and having larger flower-spikes.

To Messrs. Carter & Co., High Holborn, for—

**Tomato Dedham Favourite**.—A kind which bears smooth dark red fruit as large as a medium sized Orange. It also appears to be a very free bearer, a plant in a 12-in. pot being furnished with a dozen and a half of good fruits.

Messrs. Veitch & Sons exhibited a collection of varieties of *Lilium avratum*, which were very handsome; also a pan of finely coloured plants of *Phyllanthus roseo-pictus* and cut blooms of a buff coloured border Carnation named Mr. Toby. A group of flowering plants of the rare *Phalænopsis violacea* was also shown by Messrs. Veitch & Sons; also a fine specimen of the variegated *Crinum Verschaffeltianum* and *Gloriosa superba*.

Messrs. Cannell and Sons, Swanley, Kent, exhibited a magnificent display of cut blooms of *Verbenas*. The trusses were large and of fine form, as were also the individual flowers. Messrs. Cannell grow *Verbenas* remarkably well in pots, and plants laden with such trusses as was on this occasion exhibited rank among the most attractive of decorative conservatory plants at this season of the year. A vote of thanks was awarded. From the same exhibitors also came fine blooms of African *Marigolds*, which are among the most showy of summer and autumn plants, and grow well near towns.

Mr. B. S. Williams, Victoria Nurseries, Upper Holloway, showed a new plant, named *Maranta Leitzei*, which, in some respects, is an improvement on kinds already in cultivation. Mr. H. Eckford, The Gardens, Sandywell Park, Cheltenham, exhibited several Zonal *Pelargoniums* which were good, but no better than many kinds already in commerce. The same exhibitor also exhibited two white *Begonias*, which were very pure in colour. One was named *Princess Royal*, and the other *Triumph*. Seedling *Coleuses* were also shown by Mr. Eckford, but of these we have already too many of a similar type.

Messrs. Hooper & Co. sent from their Twickenham nurseries a plant of the Ivy-leaved *Pelargonium* Mons. Crousse, a kind strong in habit and bearing immense trusses of very large, semi-double, salmon-pink blossoms. The same firm also had a brilliant-flowered *Canna* named *Nardy*.

A remarkably fine variety of *Oncidium Lancéanum* was shown by Mr. Hodges, gardener to E. Wright, Esq., Gravelly Hill, Birmingham. A vote of thanks was awarded. A seedling *Croton* of the trilobe-leaved section, named *Tinneanum*, came from Mr. G. Clark, gardener to J. A. Tinne, Esq., Briarley, Aigburth, Liverpool, for which a vote of thanks was awarded.

A fine group of well-grown plants of *Tuberous Begonias* was sent from the Royal Horticulture



Society's Gardens, Chiswick, from whence came also well flowered plants of that fine greenhouse decorative plant *Cassia corymbosa* and a silvery metallic coloured *Begonia* of the Rex type, named B. Louise Chretien, and some unsurpassed varieties of *Lantana*; also beautifully grown plants of *Torenia Fournieri* in 5-in. pots, and cut spikes of *Pentstemons*.

**Fruit and Vegetables.**—Mr. J. Walker, nurseryman, Thame, Oxon, exhibited a collection of forty varieties of Gooseberries; also two dishes of Currants, viz., Coster's White and Red Gage, both excellent kinds.

A seedling Melon named *Champion* was shown by Mr. C. Salter, gardener to J. Southgate, Esq., Leigham Court Road, Streatham. It was a cross between Read's Scarlet Flesh and Eastnor Castle, but was of no particular merit.

A collection of remarkably well grown Tomatoes in pots was shown by Messrs. Carter & Co., of High Holborn, a kind called *Dedham Favourite* being wonderfully fine, the fruits being as large as a good-sized Orange, very smooth, and of a dark red colour. One plant of it in a 12-in. pot bore a dozen and a half large fruits. Mr. Walker, Thame, Oxon, showed a Pea called *Perpetual Branching*, which has the merit of bearing, for a long time in succession, fine crops of well-flavoured Peas.

#### PLANT LABEL COMPETITION.

THE competition for the silver medal of the Society of Arts and the prize of £5 offered by Mr. G. F. Wilson has just taken place, and the results appear in a recent issue of the Society's Journal. The conditions under which the prizes were offered were as follows: The label must be cheap and durable, must show legibly whatever is written or printed thereon, and must be suitable for plants in open border.

One hundred and twenty sets of specimen labels were sent in. Some of these are ingenious, but many show ignorance of the conditions to which labels are exposed in open border, rock-work, &c. There are a great number of applications of glass to labels; some of these specimens were broken even in the transit, showing how unsuitable they are to stand rough usage. Some very useful labels have been sent in, which, though not perhaps absolutely new, are unknown to the generality of cultivators.

The committee are of opinion that none of the labels sent in competition are deserving of the Society's medal, but they have pleasure in expressing their opinion that the following possess many points of merit, and they therefore beg leave to draw the attention of persons interested in the subject to them:—

E. J. Alment, 194, Romford Road, Stratford.—Zinc labels, with galvanised iron wire stems.

J. Pinches, 27, Oxendon Street, S.W.—Zinc labels, with stems of zinc, iron, and oxidised iron.

Thomas Johnston, Saw Mills, Renfrew, Scotland.—Labels of teak wood.

J. Wolstenholme & Sons, Grimes Street, Mill Street, Ancoats, Manchester.—Holly wood and box wood labels.

Rev. H. Ewbank, St. John's, Ryde, Isle of Wight.—Wood labels, with iron wire supports. These are painted white, and a coat of black paint added, which, when wet, is removed where the letters are required, in order to show the white ground beneath.

J. Wood, Woodville, The Spring, Kirkstall, Yorks.—Zinc labels, with galvanised iron wire supports.

Walter J. Todd, 32, Angell Road, Brixton, S. W.—Wood labels, with wire supports.

C. Yates, Mortlake.—Zinc labels of various patterns; ink for writing on same.

S. Mount, Harbledown, Canterbury.—Painted iron labels.

J. C. Turner, Salisbury Road, Blandford.—Zinc labels.

J. Dowdney, 1, Montpellier Villas, West Street, Croydon.—Wood labels, with wire supports.

Rev. C. Wolley Dod.—Iron and wood labels.

There was also an iron label sent in by the Rev. H. N. Ellacombe, for the inspection of the committee, though not in competition, which is well deserving of notice, since it has been in use for more than sixty years in Mr. Ellacombe's garden, and is still in perfectly sound and good condition.

The committee would suggest that the proprietors of the labels sent in should present their specimens to the Council of the Royal Horticultural Society, if that Society is willing to accept them, in order that they may form a permanent exhibition of labels. They also recommend that the offer of the prizes should be renewed for the following year, and for the guidance of future competitors they offer a few suggestions.

Wood is probably the cheapest and best material for cheap labels. It is at present liable to the objections that the part in the ground rots, and the writing on the label becomes illegible. If by some process, such as perfect kyanising or treatment with paraffin, these objections could be removed, an excellent cheap label would be the result. Such labels, however, would have to be tested in actual use against unprepared labels before any award upon them could be made. Slate labels, made thick enough not to break, might be useful. Cheap thick glass labels might be useful for the same purpose, if proper means of writing upon them were provided.

The committee consisted of George F. Wilson, F.R.S. (chairman), F. J. Bramwell, F.R.S. (chairman of the Council), Lord Alfred S. Churchill, Rev. H. Harpur Crewe, Professor W. T. Thiselton Dyer, F.R.S., Rev. H. N. Ellacombe, H. J. Elwes, Sir Joseph D. Hooker, K.C.S.I., C.B., F.R.S., Jeffrey Whitehead, George C. Joad, Rev. J. G. Nelson, William Sowerby, Rev. Charles Wolley Dod, and Colonel Trevor Clarke.

**Exhibition at Liege.**—The show which has just taken place at Liege has been a great success. Orchids especially were numerous, and well shown by Messrs. Oscar Lamarche, Diendoné Massange, Ferdinand Massange (amateurs), and Messrs. Jacob Makoy & Co. (nurserymen). Amongst the most remarkable plants showed by them we noticed especially the new *Phalaenopsis violacea*, showed in perfection by M. D. Massange; also the *Vanda corulea*, *Lælia purpurata*, *Anguloa Clowesi*, *Disa grandiflora*, *Cattleya superba*, *Mossiae*, *labiata*, &c. The *Anæctochili* were well represented by a good collection from Makoy. Messrs. Linden and Van Houtte, nurserymen, from Ghent, had brought some collections of Palms, stove plants, &c. Roses were sent from Luxemburg by Messrs. Souppert and Notting, and Ketten Frères, but of course, though in quantities, they were not what might have been expected if the weather had been more suitable. The arrangements of the show were well carried out, and the strangers to the town of Liege were received by the members of the society in their usual kind way.

DIED, on 22nd inst., Mr. Benjamin Hyde, for about a quarter of a century in the service of the Royal Horticultural Society at Chiswick.

**Mr. Croucher.**—We learn that Mr. Croucher has secured a suitable nursery at Brook Green, Hammersmith. He does not propose to resign the situation he has filled so long, and will be assisted by his sons in his new undertaking. We trust he may be able to use his very considerable knowledge for the benefit of horticulture.

MR. A. MOORE has been appointed superintendent of the State nursery, which is being made in New South Wales by the Government to supply forest trees for the colony. The intention of the Government is to introduce as many of the timber trees from different parts of the world as will grow in New South Wales, which has a very wide range. The site chosen for the nursery is the best that could be got for the object in view: there are about twenty-five acres of good land at Campbelltown, about thirty miles from Sydney.

#### LATE NOTES AND QUESTIONS.

**Corn Marigolds.**—If "E. H." would like some Corn Marigolds, I can send him some gratis if he will send me his address through THE GARDEN office.—ACHNAMARA.

**Tahiti.**—Your name is as good as any other, and is the one we usually use. *Platyedon autumnale* is increased by seeds or division, but is slow in the last way.

"A YOUNG GARDENER" sends stamps for an advertisement without giving any name or address; postal mark, Richmond, Surrey. Communications of this sort are far from rare.

**Monstrous Foxglove.**—D. M.—The flowers you send show a curious sport, which is not, however, uncommon. It would be interesting to observe if it is perpetuated in the seedlings.—ED.

**Yellow Daisies.**—The malformed flowers appear to be the result of insufficient nourishment. Repot the plants in good soil, and treat them liberally with water and weak liquid manure now and then.

**Diseased Lily Leaves.**—S. Galbraith Bole.—The injury to the Lily leaves you send is no doubt the results of a chill—a drop of cold water on the leaf when the sun shines after cold rain.—G. F. W.

**Hollyhocks Diseased.**—H. Henna.—The leaf you send is attacked by a fungus peculiar to the Mallow tribe, and is particularly prevalent in dry seasons. The only remedy is to supply the plants with plenty of water and a robust growth encouraged, as moisture is unfavourable to the growth of the fungus. In order to check its progress, sprinkle the leaves with sulphur.—H.

**Diseased Poplar Leaves.**—Fastigate.—The "sac-like glands" on your Poplar leaves are caused by the aphides which they enclose. Several species of these insects cause somewhat similar galls on the leaves of various trees. They are not likely to occur in sufficient numbers to cause any injury to your trees. The aphides puncture the leaves, which causes an abnormal growth of the surrounding parts. The aphides were so dried up that I cannot name them.—G. S. S.

**Culture of Primulas.**—What is the proper soil and treatment for the following *Primulas*—viz., *P. cashmeriana*, *P. denticulata*, *P. farinosa*? Information as to the first mentioned is specially desired.—ROCHDALE. ("Rochdale" will find a mixture of two parts peat, one part silver sand, and one part good sweet loam the best for alpine *Primulas*—all the better if some broken pieces of rough sandstone be placed near and upon the surface. All these *Primulas* require a moist situation, but there must be no stagnation. They would not live on a clay bottom, so that perfect drainage is requisite. With these conditions they will enjoy a sunny situation, and in any case they require a clear sky overhead. In the neighbourhood of Rochdale it will be difficult to flower them well in the open garden, except our English *P. farinosa*, which will thrive almost anywhere if properly treated. They are all quite hardy, but our severe winters stunt their growth, so that it is advisable to use cloches in the early spring to ensure perfect flowering. To enjoy the rarer *Primulas* in all their beauty, they should be flowered under cover, as with the *Auricula*. A cold alpine house, into which they can be placed at flowering time, is the best place for them, and in such a situation they continue to bloom for a long time, and the rich mealy coating of leaf and stem is preserved, and adds greatly to the beauty of the flower.—BROCKHURST, Didsbury.)

**Names of Plants.**—E. Hinge.—1, *Abutilon vexillarium variegatum*; 2, *Pittonia argyrea*; 3, *Diplacus glutinosus*; 4, *Maranta olivaris*.—T. W.—*Aerides odoratum*; 2, *Rondeletia anomala*; 3, *Graphophyllum pictum*; 4, *Dicksonia antarctica*.—F. R. M.—1, *Campanula rapunculoides*, *Epilobium hirsutum*; 4, *Agrimonia eupatorium*; 3, *Lysimachia Nummularia*.—Mac.—1, apparently *Circea Lutea* (no flowers); 2, *Epipactis palustris*; 3, send better specimen.—Mrs. Evans.—*Diplacus glutinosus*, cool greenhouse shrub, grows in pots in an ordinary way.

—F. W. Burton.—*Astrantia major*, the pink flowered one is *A. heliophylla*.—David Rhind.—1, *Pteris tremula*; 2, send again; 3, *Adiantum hispidulum*; 4, *Aspidium caryotideum*; 5, *Scolopendrium vulgare crispum*; 6, apparently *Gasteria verrucosa*.—M. E. Stansfield.—*Senecio sarracenicus*, *Potentilla* sp.—Blackmore.—*Perilopaea gravea*.—C. S.—1, —; 2, *Glaux maritima*; 3, *Sedum dasycarpum*. We do not recognise the other plants, as they are badly damaged.

**Mr. Riches, of Tooting.**—We regret to state that we have eight letters now before us (apart from others sent by us to Mr. Riches) in which the writers state that they have forwarded money for plants to him without getting plants or even a reply. One correspondent from Scotland, who wrote twice to Mr. Riches after sending a money order without getting any reply, adds, "I have so uniformly met with the utmost attention and courtesy from many nurserymen when I have sent for plants, that I cannot help thinking there must be something peculiar in this case, and that Mr. Riches may never have heard of my application at all." As Mr. Riches has not replied to our repeated complaints, and we have stopped his advertisements, we have no alternative but to call attention to the above-mentioned facts.



No. 507. SATURDAY, AUG. 6, 1881. [Vol. XX

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare*.

## ARRANGING A GREENHOUSE.

ALL of us who live in country places see occasionally rustic maidens carrying huge nosegays. They are most likely going to the railway, and are bound to some town where probably flowers are scarce; or if not, they would consider it very ill manners to visit a friend unless they plundered their gardens of every available bit of colour. I often glance at these nosegays, composed with reckless disregard of all the principles of colour or art. What business have I to feel hurt that the maiden has chosen to arrange her flowers in her own way? or to find that she had never read *Mérimée* or *Field on Colour*? What difference is there between her simple knowledge and the arts of an accomplished gardener? Not an enormous difference, but it exists, and ought to be attentively considered.

I see sometimes greenhouses resplendent with vivid tints, but where the gardener has paid as little attention to arrangement of colour as our maiden with her nosegay, but in this case he ought to have known a little better. Surely he might have tried the value of a little contrast or harmony, or grouping his plants in an effective way. I constantly see greenhouses where a very little change from the indiscriminate would greatly improve the general effect. Plants of the same kind should, as a rule, be kept more together, not dotted about all over the house; for instance, two *Fuchsias* or two *Gloxinias* placed together make a better show than by themselves. If a plant is very large it will be hurtful to its effect to add a second, unless the second is of a different colour or unless it harmonises; as, for instance, two *Begonias*, which at times grow to an immense size; unless one of them is white and the other orange, they will not go well together. It is the same with all other plants. Masses of colour are far more effective than isolated patches, especially white; and the same rule of colour I gave in my recipe for a bouquet applies equally well to plants in pots—white, scarlet, red, &c. White is the most powerful of all colours; it is seized upon first by the eye, and is the key and guide to judge all colours and tints by. I know of no more beautiful white than the double white *Pelargonium*. I have had none in my greenhouse covered with bloom for some months. Every large house should be provided with masses of white, and orange and carmine should be near it.

I did not intend in my bouquet (p. 101) that people should get the exact flowers I mentioned. On careful reading it will be found that it was only similar colours that were required. I contend that the principle is right, and in accordance with the rules of the best colourists, so I think any one who gives the idea a fair trial will not regret it; at the same time I by no means wish to dogmatise on this subject. People may safely indulge in any style they please, and, if they like, make their bouquets and arrange their plants on the same principles as the country maidens. The most indifferent to this subject will admit that there is such a thing as harmony and sympathetic colours, for Nature herself is full of such. I have a double *Zinnia*, of rich apricot-yellow, the centre of which has an aureola of purple so wonderfully blended with the yellow, that no intermediate strain can be seen. The *Coleus* is generally painted by Nature exactly as a good colourist would choose to do

it by Nature's established rules, even if he had never seen one. I have one with a crimson centre, then black with a thin emerald-green edge; another chocolate with edge of emerald-green; these tints all harmonise. Occasionally there is a daring transgression, but not often. As in the case of

The orange tints that gild the greenest bough,  
She does not hesitate to bring pink  
and green together, yet we contemplate a  
Baroness Rothschild Rose amidst her green  
foliage without our feelings being wounded.  
She can afford to do it, for her materials are  
semi-transparent; ours, stiff paints or dyed  
stuffs. W. T.

Dorset.

## LATE GRAFTING.

ALTHOUGH it is best to take time by the forelock, and to be rather in advance than behind the proper season, yet it sometimes happens that it is impossible to get some particular operation done at the best time, and the only choice that remains is to do it late or let it alone for the season. The re-grafting of fruit trees is one of those things that, although the exact date at which it should be performed has been fixed, like that on which some of our vegetable crops are to be sown, yet it has always been considered essential to cut the stock down while the sap was dormant, and to re-graft as soon as the bark would run, or the sap to flow sufficiently to make the work of uniting the scion to the stock one of the first acts of the rising sap; and in an ordinary way no better mode has yet been put into practice, for the earlier grafting is done, the longer the season the grafts have to perfect their growth, and the stronger they will have become at the end of the year. Nevertheless, as I have stated, there are cases in which it is impossible to get this operation completed before the showers of April have left us; and although some would hesitate to re-graft Apple and Pear trees when May flowers begin to fade, I can assure your readers that the operation may be quite as successfully performed then as earlier, provided the grafts have been kept cool and moist; and if they are plump and good I would guarantee that they would even grow at midsummer, but if dried up they are useless at any time. We re-grafted several Apple and Pear trees this year when they were in full leaf in the end of May. The topmost branches that showed a good prospect of fruit, but of indifferent sorts, were left intact, and all the lower branches were sawn off and re-grafted in the usual manner. They not only grew quite as well as those grafted earlier, but are now but very little behind them, although the top branches are carrying a good crop of fruit, and these will probably be left for another year, by which time a good dwarf head will be formed to replace that taken away. In this manner any upright pyramid Pears, Apples, or other fruits may be converted into natural spreading bushes by grafting the lowest tier or two of branches and letting the top remain for a year or two to bear what it will until the new sort or sorts get established, when, by cutting off the top, a fruitful bearing tree is rapidly formed. Another case I may mention—that of a neighbouring fruit farmer who did not come into possession until the orthodox time for grafting was over; he, nevertheless, boldly headed down all trees that were unsatisfactory, and having grafts in reserve, has now a fine graft growth established on them. I would therefore advise any one similarly situated to put the plan just adverted to into practice, for by so doing even a late start may be made a positive gain as regards time. J. Groom.

## COOL TREATMENT OF TUBEROSES.

It is quite possible the Tuberose will prove hardy in many warm, sheltered places where the sub-soil is dry and consequently warm. It has lived in the open here, and in several other places in this county. Hitherto its flowers under such treatment have not proved satisfactory, but these may probably come more perfect under superior culture in the open air. The cool treatment of the Tuberose under glass is a matter of more pressing practical importance. Anything that can dwarf the stature of these beautiful sweet flowers is of the greatest importance, for the height of the plants mars their usefulness for many decorative purposes. Nothing has been found to dwarf Tuberoses so effectually as the placing of them in cool quarters, or even the open air, as soon as the flower-stems are fairly started. Nor does this cool treatment, if associated with liberal culture, lessen the quantity or lower the quality of the flowers; it only brings them nearer to the root—that is all. Of course, where the flowers are merely grown for bouquet or other purposes the mere height of the plant is of little or no moment. But even then cool treatment is useful in retarding the blooms, and thus extending the blooming period. This is daily becoming of more importance, as Tuberoses all the year round are about as much in demand and as difficult to supply as *Roses* or *Grapes*. A brisk heat of 60° or more seems almost essential for the starting of the Tuberose, but after it has fairly started it thrives best in a moderate heat freely exposed to the air. It also resents severe forcing, the flowers either burning or refusing to open when subject to a high temperature. I had a marked illustration of this during the spring. Anxious for Tuberoses by a given day, a quantity was placed in a temperature of from 70° to 80°, but the flowers, which were nearly full grown, refused to open or move, while others that had been left in a temperature of from 55° to 60° or so opened before the severely forced flowers.

D. T. FISH.

## THE APPLE CROP.

FROM a careful perusal of the reports on the fruit crops I am glad to find that Apples are a much better crop than they have been for some years, for although we hear of some failures, yet in the aggregate I feel sure that not only will the quantity be far in excess of that of any crop of recent years, but, what is of even more importance, the quality will be good. I find that such sorts as the *Wellington*, that in unkindly seasons are speckled and deformed and almost worthless, are this year beautifully clear in the skin, and promise to swell out to a large size. We are now gathering *Keswick Codlins*, medium-sized trees of which are yielding from 8 to 10 sieves each. All the largest should be gathered first, and the small left for a late crop, for in abundant Apple years the price sinks so low as not to be remunerative if they are all left until fully grown. Even during the bad years through which we have passed really good orchards that have had any care bestowed on them have been remunerative, and I feel certain that with a return of brighter and better seasons, of which we have now a fair commencement, the cultivation of orchard fruits, especially Apples, will be one of the things in which we shall be able to hold our own against foreign competition. If, however, hardy fruit is to become a source of national wealth, and a means of employment for our surplus population, cultivators must see that it is grown on the cheapest system possible. In that respect home growers are unfairly handicapped. A correspondent asks, "What are extraordinary tithes?" Well, he would soon find out that if he came here; after agreeing to pay a good rent he would be called on for "extraordinary tithes" as soon as he planted the land with fruits, Hops, or garden produce, which, coupled with the high rates by rail for fruit, keep the land from being turned to the profitable use it might be, for around here it is well adapted for fruit culture. If we had free trade in land, growers



could apply their energies to its culture with a reasonable hope of recompense.

Linton,

J. GROOM.

#### NOTES FROM BINGHAM.

SOME rare plants have been in bloom at Bingham, but I have not been there to see them, except occasionally. The hardy red Water Lily (*Nymphaea alba* var. *rosea*—syn., *sphaerocarpa*) has bloomed with me for the first time in the pond, and is now thoroughly established; but it will not be seen at its best for several seasons. Water Lilies take a long time establishing themselves, and even strong plants do not show their full character under four or five years. The common yellow Water Lilies planted some eight years ago now have such large flowers, that one would really think them some new species. So I will not report on this Water Lily for another summer; but I believe it is the most splendid hardy plant we have. The seedlings grow rapidly when once up, but are very capricious in germinating, and if once the seed gets dry apparently it never will come up at all. Of twenty seeds I have given to Battersea Park for the ornamental waters there seventeen have germinated. My *Nelumbiums* in tubs in a frame are now making very good growth, but I do not think we can grow these in the open air in our English climate. A week of hot weather does wonders for them, but as it is generally followed by very cold weather, they are put back again in their growth. Possibly the dwarf Japanese varieties may be harder, and this I hope to test next summer. *Nymphaea flava* has not made growth this summer, and I suspect it is an annual, like some of the other *Nymphaeas*. It makes runners like a Strawberry plant. The blue Cape *Nymphaea* has been in bloom with me, but I do not think it is quite hardy. *Nymphaea pygmaea* is also in bloom. The hardy red American Water Lily (*Nymphaea odorata rubra*) I had from Woolson, of Passaic, was frosted coming over, but I hope to get it again. A cross between this and the Swedish rose variety ought to produce something very valuable.

**About Lilies.**—*Lilium Hansonii* has been in bloom and has proved perfectly hardy, and as easy to grow in the open border as any of the common Martagons, which it much resembles in form and growth, but is yellow with dark spots. *Medeoloides* has also proved itself a pretty little border Lily; also *Lilium callosum*, of which I have a nice batch from Japan. The white auratum (*virginale*) is just over, and I hope to get seed. It is a glorious plant. The superb Lily Messrs. Veitch have named by Mr. Baker auratum *virginale* is a different thing altogether, as it has no spot of any kind at all, being in texture of petal very like our own Madonna Lilies (*candidum*). It comes from an island off Japan, and is, I expect, a new species, though perhaps the same as *Lilium Wittei*, described in Dr. Wallace's book. Their broad petalled variety of auratum is also quite new to the gardening world. It grows about 2½ ft. high, has very broad leaves like *speciosum*, and very large flowers with more spots and broader petals than any auratum seen before. But the gem of their collection is *Lilium gloriosoides*, which in growth is like an auratum, in flower just like *speciosum*; but the spots, instead of being magenta or crimson, are the most lovely flame colour, like a pinky-orange Azalea. Among other Lilies I have had in bloom is the white spotted Martagon, a creamy white with red spots, a Lily of great beauty; also *Lilium polyphyllum*, now well established, but not worth much. *Lilium Kramerii* is really easy to grow if you get a light and very deep soil with

rapid drainage. All through this hot weather my auratums have never required water or shown a sign of dropping their buds or leaves, and that is because they can send their roots into 2 ft. of the lightest soil, and then into 6 in. of broken bricks beneath. I never saw Lilies in the open air in a more healthy state. The deep preparing of a border may be very expensive to start with, but it entirely saves the trouble of watering, as they have had none at all. *Lilium Hansonii* I fancy is from the Kurile Islands.

The scarlet Clematis has stood the winter unprotected, but it will not be of much value till we get crosses from it. *Eremurus robustus*, from 7 ft. to 8 ft. high, has been in bloom and is now seeding. I thought I had lost it during the winter, as the snow got pulpy and soft from the rapid changes of weather, but now it is in good health, and is perhaps the finest late spring plant we have. *Delphinium cardinale*, now about 5 ft. high with us, has quite astonished me with its beauty—a lovely scarlet with a yellow centre. I look on this as a great plant of the future. It is perfectly hardy and easily managed.

FRANK MILES.

#### NOTES FROM DUBLIN.

**Indian Poppies** (*Meconopsis*).—Some one wrote in THE GARDEN a few weeks ago that these were "interesting," but not beautiful. My first plant of *Meconopsis Wallichii*, from last year's seed, opened its flowers a fortnight ago. It was a pale flabby variety of a bluish-lilac shade, and it went a long way towards convincing me that Fitch's beautiful figure in "Himalayan Plants" was—well, a trifle too dense in the blue; and also that the statement of the writer in THE GARDEN was quite correct. Now, however, a stronger seedling of *M. Wallichii*, opening its first blossoms (the first flowers at the top of the plant are far finer than later ones lower down the stem), proves Fitch's representation to be pretty near the mark, and I fancy the plant could not have been seen in good condition, or perhaps the variety was but a poor one, when the term "interesting" was used respecting it instead of beautiful. Without a doubt well-grown plants of *Meconopsis nepalensis* (sulphur yellow) or *M. Wallichii* (Prussian blue) afford one a treat when in bloom. They do not succeed with me in the full sun, but when so planted that the mid-day glare is screened from them they luxuriate, and their great rosettes of hairy leaves are beautiful even if one did not see the flowers. Treated as biennials and saved through the winter under a cap-glass or in a cold frame, they bloom strongly the second season.

**Flowers for Vases.**—As a rule even the best decorators fill their vases too full. One now before me contains three leaves and three flower-spikes of the purple-flowered Plantain Lily (*Funkia ovata*), a flower of *Lilium longiflorum*, three tall spikes of *Gladiolus Colvillei albus*, a single spike of *G. brenchleyensis*, and two slender sprays of the common Asparagus. The vase itself is of a soft grey tint, 1 ft. in height, and 3 in. across the top from rim to rim. Cutting the flowers and the arrangement of them took up less than ten minutes. In the cutting of flowers for vase decoration the tendency is—and among young gardeners it is a strong one—to cut them with short stems. To catch hold of a flower-stem just below the blossom, as if it were a snake, and then to reap off the stalks just below the hand, is not the right way. If blossoms are borne on long and graceful stems, such must always be cut full length for vase decoration. Cut your flowers with the stalks as long as is natural, arrange a few of their own leaves with them, and above all do not cram the vases too full. Two or three distinct types of flower beauty arranged with fresh bold leaves, or a bit of graceful Grass-like spray, is far more pleasing than a bouquet-like handful of flowers caught up tightly by the throat, so to speak, and then jammed down into the neck of the vase.

**Large Crimson Groundsel** (*Senecio pulcher*).—Like some other growers, I some time ago began to think this plant rather difficult to manage rightly in order to make sure of its late autumnal blossoms. Now I find it best to treat it as a biennial as follows: In November or December dig up such stock plants as are not showing flowers and you will find to each several long white roots as thick as a crowquill, or thicker if the plants be strong. These roots cut into 1-in. lengths, and inserted as cuttings in a pan of coarse sand, root and break into leafy growth freely if they be watered occasionally and placed on a shelf near the light in a temperature of 50° during the winter. In April each will have become a plant with several leaves varying from 1 in. to 2 in. in length. Pot them off separately in 3-in. pots, using leaf mould, loam, and sand in equal proportions, and place the plants in a cold frame, which should be kept rather close until new roots are made. They may then have air during fine weather, and may be planted out in a well dug sunny border in May. Thus treated, they make strong and rapid growth. Some of the strongest will throw up a spike the first year, but all bloom strongly the second season. My plants propagated in this way in December, 1879, are now vigorous, and all promise to produce strong spikes. The strongest pieces are throwing up two or three flowering stems each, and have magnificent leaves of great substance. Any plants which fail to flower the second season, or which show a tendency to break up into several weak crowns instead of one strong one, should be broken up for stock, using the thick quill roots for cuttings as before mentioned.

**Picotee Painted Lady** (*Somers*).—This is a bright and effective flower. In vivid colouring and brilliancy it is one of the finest things I know in its way, and the fringing of the petals, which prevents it becoming a florist's flower, enhances its beauty a thousand-fold, and gives a lightness to its vivid colouring which it would otherwise lack. It was given to me by the raiser, Mr. John Somers, a zealous amateur florist. As a border flower it is very floriferous, and the foliage is bold and of a clear glaucous tint, somewhat resembling that of the old Clove Carnation. The colour is light rosy scarlet, each segment being edged and lined behind with white in a very elegant way. From the same collection we got the old Waterloo and Wellington Pinks, robust and free-blooming varieties with bold fringed flowers of a deep rosy lilac colour, with dark purple velvet-like markings in the centre. Unlike many of the delicate productions of the florist, these two varieties are perfectly hardy, and give an abundance of bright and sweet flowers from the open ground for decorative uses.

**Gladiolus Saundersi.**—Amongst the many beautiful bulbous plants figured in THE GARDEN this is one of the best, hardest, and most effective. It is now in bloom here, a strong clump bearing three spikes. Last autumn I paid a shilling, I think it was, to Mr. Thompson, of Ipswich, for a good sound bulb, which was planted on a deep sunny border close to a brick wall. Last August it produced a good strong spike, and, as before stated, this season there are three vigorous spikes now in perfection. In point of beauty the vivid scarlet white-eyed blossoms, each of good texture, and nearly 5 in. across, are comparable with those of *Disa grandiflora*, and when the bulbs become well established, there is a great improvement in the size, texture, and colouring of the flowers. If only as a companion for the long-tubed white Japanese Lilies, this Cape bulb is well worth a place in all good gardens.

**Primula capitata.**—Of Primroses now in bloom, this is one of the finest. It seems to be a dark and late flowering purple or plum coloured variety of the *P. denticulata* section from Northern India, and, thanks to the generosity of an amateur whom I have never seen, it is now in bloom in our collection. Different individuals, as raised from seed, vary much in colour—a charm in store for those who will boldly raise seedlings



of all good hardy flowers. I wish Mr. Wolley Dod would, at his leisure, kindly tell us how to preserve this Primrose through the winter months. I lost several plants of it last year in a cold frame, and I am sorry to hear that my own experience was not unique in that way. *P. erosa*, *P. mollis*, and *P. Munroi* in the same frame were uninjured. *P. rosea* is already showing the short scaped trusses it generally affords in late summer or autumn, and the old Siberian *P. cortusoides* grown in the shade is throwing up tall scapes of its deeply gashed rosy lilac flowers, as indeed it has not failed to do since May last. It is now known to be quite distinct from *P. Sieboldi*, of Japan, which is yet in some gardens grown under the erroneous name of *P. cortusoides amena*.

**Gladiolus Colvillei albus.**—Of all white flowers this has been most plentiful during the months of June and July. As vase flowers its cool white blossoms, set so prettily on long slender arching scapes, are unique in their way. Cut when the lower-most flower expands and placed in water, every bud opens fresh and fair, the average duration of each spike so cut being a fortnight. Good sound bulbs produce one spike the first year, and from three to five the second season after planting—that is to say, they do so in our light rich sandy soil. We plant a few bulbs of it every autumn, and find that they flower earlier and better at the foot of warm walls than when planted in the open border. A friend who has much to do in the way of filling drawing-room vases has a sunny two-light frame full of it every season. In October a bed of loam, leaf-mould, and sand in nearly equal proportions is made up in which to plant the bulbs. The bed is about 1 ft. in depth and well drained, and in this the bulbs, some hundreds in number, are planted rather thickly and 4 in. in depth. The lights are replaced, air being left on always except during severe frosts. No water is given until the leaves appear about February, or earlier if the season be mild, and then only enough to keep the soil moist. The lights are thrown back during mild weather; in April they are removed altogether. During the latter part of May and in June, sheaves of scapes are cut for decorative purposes, and are then much admired. The bulbs are marked at 15s. per hundred in a catalogue now before me.

**Montbretia Pottsi.**—Will some one who has had much experience of this plant (figured in THE GARDEN) kindly oblige by saying if the leaves turn yellow quite suddenly just as its flowers begin to expand? This is the case with two tufts of it which we have here, and the same thing happened at precisely the same time last season. As it was very hot and dry in August last year I supposed at the time that extreme drought was the cause, but this year the plants have been watered thoroughly, and so I am now convinced there is some other reason, especially as *Tritonia aurea* is as fresh and as green as a Leek close beside the Montbretia. I may add that the Montbretia increases very rapidly, a single corm planted two years ago now forming a dense mass of leafy shoots 1 ft. through at the ground level. The yellowness of leafage to which I refer is strikingly similar to that attributed to sun-stroke, drought, &c., by various growers in the case of *Lilium auratum* and other kinds of Lilies.

**Tritonia (Kniphofia) McOWani.**—This is one of the dwarfiest of all the species, and also the first to flower in our climate. A good figure of it has appeared in THE GARDEN, and now, after several more years' experience of the plant under cultivation, it still continues to rise in my estimation. It would appear to be a good, safe, and showy plant in nearly all soils and situations, and is certainly most brilliant and effective here when in flower. To say that its red flower-spikes are produced in succession from August until the sharp frosts of November check them is no mean recommendation. Another dwarf and effective plant appears to be even less common in gardens. I allude to *T. pumila*, as figured in one of the early volumes of the *Botanical Magazine*. The name is quite familiar, but the true plant is rare

in comparison with the labels, which so often are all that represent it. F. W. B.

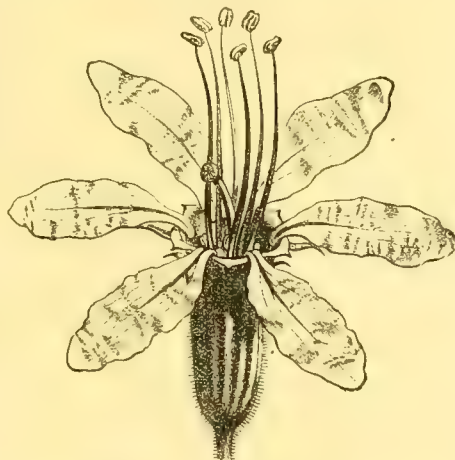
## NOTES OF THE WEEK.

**Royal Horticultural Society's Gardens.**—The number of visitors to these gardens and the Medical and Sanitary Exhibition on Bank Holiday was 12,209.

**Magnolia glauca.**—As a sweet scented shrub for a lawn this species is specially commendable, as it produces its white flowers so low that they may be examined closely and their delicious odour inhaled. On the lawns at Kew are some fine examples now in flower.

**Cienkowskia Kirki.**—As a further instance of the great value of this new African Gingerwort as a decorative subject, we might mention that it is still in flower at Kew, and is even developing some more flower-spikes. It is now some two months since we first noticed the plants of this in flower.

**Purple Loosestrife.**—The pretty *Lythrum Salicaria* may now be seen in flower almost everywhere along with water-side plants, among which it stands out prominent owing to the gay purple-rose of its tall spikes of blossoms. Pretty as is the ordinary wild kind, it is far surpassed by the varieties that have originated in gardens, of which those named *superbum* and *roseum* are the



Flower of Purple Loosestrife (enlarged).

finest, and both are in flower in most of the hardy plant nurseries round London. The colour of these is a much clearer rose than the common kind, and the spikes also are larger, particularly those of *superbum*, which, under good cultivation, rise 5 ft. or 6 ft. high. These fine varieties should take the place among waterside plants of the typical kind, particularly in localities where the latter grows abundantly in a wild state.

**Himalayan Blue Poppy.**—A fine plant of *Meconopsis Wallichii* is now in flower on the old rockery at Kew. It has been planted out for about a year, and is now covered with numbers of its large porcelain blue flowers, which are highly attractive. If treated as a biennial in this way it is a very satisfactory plant to cultivate.

**Salvia porphyranthera** is by far the brightest and best Sage among the numerous species grown in the open air at Kew. It is a hardy kind, but thrives finely during summer out-of-doors, and it flowers profusely, and the blossoms, about medium size, are of such a brilliant crimson as to eclipse all others as regards colour. It is a dwarf grower, and very compact.

**Hardy Ceanothus.**—There are so many kinds of *Ceanothus* that are not sufficiently hardy to withstand the rigour of our climate, that the perfectly hardy kinds are doubly valuable. The most beautiful of these is *Gloire de Versailles*, now in great beauty in the open air at Kew. The

flowers are produced in feathery clusters, terminating each branch, and the colour, a pale bluish-purple, is really lovely. It is perfectly hardy, and the plant does not appear to have been in the least injured by the last two winters.

**Beautiful Greenhouse Climber.**—One of the finest of all greenhouse climbing plants is undoubtedly *Rhodochiton volubile*, a slender-growing plant bearing flowers with a pink bell-shaped calyx encircling a deep crimson-maroon corolla. These hang in graceful festoons from the slender twining branches, and retain their beauty from the beginning till the end of summer. Some fine examples of it may now be seen in flower in the greenhouse (No. 4) at Kew trained to the roof of the house.

**Howardia caracacensis.**—In the Victoria regia house at Kew there is now in flower a specimen of this singularly attractive Cinchonaceous plant from South America. It is of shrubby growth; each branch is terminated by a loose cluster of long tubular flowers of a purplish rose hue. The most attractive organs, however, are the heart-shaped bracts of a pleasing rosy tint, which subtend the flowers much in the same way as in *Mussaenda frondosa* and *luteola*, belonging to the same family, and which are both in flower at Kew.

**Dipladenia boliviensis.**—This beautiful stove climber is one of the most desirable for general cultivation, as it is more easily managed than the pink flowered section, and, being freer in growth and flowers, renders it all the more valuable. In the Victoria regia house at Kew there is now a vigorous plant twining prettily round one of the pillars, and the large white blossoms with orange centres contrast finely with the shining green foliage. The beautiful *D. amabilis*, one of the finest of the carmine-tinted kinds, is likewise in bloom in the stoves.

**Seedling Pelargoniums.**—Herewith I send trusses of blooms cut from three seedling plants of zonal Pelargoniums. The three plants were raised this year from one pod of seed from Dr. Denny crossed with *Violet Double*—seedlings not yet cut down.—W. FARREN, *How House, Cambridge*. [The flowers sent represent some very beautiful varieties; one a good double; another a semi-double; while the third is a single sort with large and finely-formed flowers. All are of a rich deep crimson, the doubles being particularly brilliant.]

**A Beautiful Bramble.**—One of the most attractive plants in the temperate house at Kew just now is *Rubus phoenicolasius*, a climbing Bramble from Japan. The plant is growing luxuriantly planted out in the border, climbing to a tall pole some 15 ft. high. It is now covered with its bright scarlet fruits, which in form and size much resemble Raspberries. It is presumably quite hardy, but on this point we have no conclusive evidence. The fruits are said to be delicious, of fine flavour, pleasantly sub-acid; hence it would make an addition to our list of fruits if grown on a large scale.

**Select Pentstemons.**—Amongst the best Pentstemons at Messrs. Downie & Laird's nurseries, near Edinburgh, are the following: Miss Arnott, Mrs. Robertson Munro, Mrs. S. Walker, W. P. Laird, Provost Shields, William Thom, T. P. W. Butt, Richard Dean, William Mulligan, Mrs. Dow, Miss Melville, James Eadie, Mrs. F. Terret, Master F. Terret, Lady Mathieson, James Leadbeater, John J. Hewison. Some of these have flowers almost like Foxgloves in size. Amongst many very beautiful Delphiniums, double and single, is one called *Douchfour*, curiously like the old *D. grandiflorum* in flower and manner of growth. Some of the finest Phloxes I saw at Pink Hill were *Lady Belhaven*, *Bellini*, *John Anderson*, *Mrs. Row*, *John Shearer*, *Earl of Mar*, and *James Black*, tall, late kinds, most of which are not fully in blossom. Mr. Goodall is beginning to introduce a dwarf form of the late Phloxes, which will be an improvement. Some of the early dwarf Phloxes now in flower are very good in shape and colour.—C. M. OWEN.



**Jean Verschaffelt**, we learn, has given up his nursery at Faubourg de Bruxelles, Ghent, and it has passed into the hands of Messrs. Romain and Raphaël de Smet, by whom the business will be carried on under the name of De Smet Frères.

**Tomatoes and Melons.**—At the meeting of the Royal Horticultural Society, on Tuesday next, the prizes offered by Messrs. Hooper & Co., Covent Garden, for twelve fruits of Model Tomato and one fruit of Melon Sirdar of Cabul will be competed for.

**Grammanthes chlorantha** (gentianoides). This is a bright little plant in sunshine; it should be treated as a tender annual and put out on sunny spots and choice borders. Sent by Mr. Burbidge. It is usually somewhat uncertain in cultivation, but no doubt a gem seen in a somewhat better climate.

**New Tropæolum.**—Messrs. Carter & Co. send us specimens of their new Tom Thumb Nasturtium Empress of India, to be sent out this season. It is far in advance of that already popular variety King of Tom Thumbs, the colour being many shades deeper, and the habit of the plant perfect.

**Fine Lilium auratum.**—Mr. Peacock sends us from his garden at Sudbury House, Hammersmith, an exceptionally fine flower of this Lily. It measures about 15 in. across the extreme tips of the petals. The bands of the petals are suffused with red, and the flower is copiously spotted with the same colour.

**National Rose Society.**—A special meeting of the general committee of this society will be held at the Horticultural Club, 37, Arundel Street, Strand, on Tuesday, August 9, at twelve o'clock, for the purpose of drawing up a statement of the terms on which the society will be prepared to hold their metropolitan exhibition in the gardens of the Royal Horticultural Society in 1882.

**Large Brussels Sprouts.**—We have a photograph showing the wonderful size and vigour to which this plant has been grown by Mr. Gilbert, of Burghley. Personally, we like Brussels Sprouts as they are eaten in Brussels and by all Christian people who really know them; but, as our friend at Burghley says, there is a large portion of the public "who like something to look at as well as something to eat;" and no doubt these Brobdingnagian Brussels Sprouts "meet a great want."

**Show of Cut Roses.**—During the past week a collection of cut Roses has been exhibited in the gardens of the Royal Botanic Society, Regent's Park, from Cranston's Nursery and Seed Company's grounds, at King's Acre, Hereford. It consists of a fine display of the best sorts as well as several new kinds. Among the new varieties is a seedling of last year, called Mrs. Jowitt, a bright carmine flower of fine form. Another novelty, one of this year's seedlings, is named Mrs. Gretton. It is of a deep velvety maroon, with thick petals, and is of good form. Crimson Bedder is also a desirable variety on account of its lateness. Other varieties shown were Reynolds Hole, Mdle. Oswald de Kerchove, Madame Gabriel Luizet, deep pink, John Stuart Mill, Constantia Pretiakov, deliciously scented, Mons. Etienne Levet, rosy vermillion, Emilie Hausburg, Louis Van Houtte, and Marguerite Brassac, a new Rose of a rather deeper shade than the well-known Charles Lefebvre. The show will be continued until the 9th inst.

**Water Lilies.**—These constitute at the present time one of the chief attractions at Kew. In the old Lily house near the Palm house the tropical kinds are in great beauty. These principally comprise the varieties of the Egyptian Lotos (*Nymphaea Lotus*), viz., *dentata*, with large and beautiful flowers of a pure white; *rubra*, of a deeper rose tint than the type; and *rubra minor*, a charming little variety, quite distinct from the rest, the colour being deeper and the flowers much smaller. *N. stellata* is rather a poor flower as regards size and colour, but very delicate in form, the petals assuming a star-like pattern. *N. scutifolia* is an intense blue, though

the flowers are not nearly so large as *N. gigantea* minor of the same colour. The latter is a small flowered form of the Australian Water Lily that grows to such a large size in the still lakes about Brisbane and other localities in the west part of that continent. There are several other tropical species represented in the collection, though they are not in flower at present. One other kind remains to be mentioned among those growing in the Water Lily house, which is the rose-coloured variety of the beautiful North American *N. odorata*. It is known as *N. odorata minor*, and also as *N. odorata rosea*. The flowers are smaller than the typical *N. odorata*, and of a beautiful, soft, bluish tint, even more pleasing than the rose-coloured form of *N. alba*. Among the Water Lilies in the open-air aquatic tank in the herbaceous ground, *N. tuberosa* is still in flower, and may readily be distinguished by its manner of growth from either of the other hardy kinds.

**Extraordinary Tithe.**—This impost, according to the report of the select committee appointed to inquire into its assessment, originated under the Tithe Commutation Act of 1836, which empowered the commissioners to make Hop gardens, market gardens, and orchards into separate districts, on which an extra assessment was to be levied. This distinction was based on the plea that the produce of garden and orchard land is more profitable than that of ordinary arable land. If a district producing Hops, fruit, or vegetables is converted into corn land the extraordinary tithe ceases; and when land previously devoted to grain or pasture is cultivated for Hops or gardens the extraordinary charge is put on it. The objections to this system are obvious. The ordinary tithe is merely a charge on the land, while the extraordinary tithe is a charge on production. A difficulty, moreover, exists as regards making a distinction between agricultural and garden produce. Some crops, such as Potatoes, Cabbages, Peas, and Beetroot, are classed both as field and garden produce, and in parts of Scotland even Strawberries are regarded as field crops. The difficulty of drawing a clear line between the two has given rise to considerable litigation at times. The general effect of the operation of this increased assessment is recognised by the special committee as mischievous, and they propose a substantial measure of relief, which is called for alike in the interest of producers and consumers.

## EDITOR'S TABLE.

A ROSE-COLOURED PINK.—Mr. Woodall sends us from Scarborough a bright and pretty rose pink. It seems distinct in colour from any grown about London, and a desirable companion for the old white, the purple Glove Pink, and other favourites of the same family.

A STRIPED ROSE.—A very pretty and fragrant Rose, the buds and flowers of which are all well dotted and striped with deep rose on a pale ground, comes from Sir A. Jardine. It is named *Panachée d'Orleans*, and seems better than most Roses of a similar class that we have seen.

THE CAPE HYACINTH.—Very good and very graceful just now when well grown, and the pips bold and fresh. As a cut flower it is useful for the simpler and bolder kinds of arrangement. From Mr. Kingsmill. It has looked well in borders of late.

THE JAPAN ANEMONE.—The first blooms of this handsome plant come to us from Mr. Edwin Jackson, in North Wales. They seem to open earlier than those about London. We shall now have a long season of it. We did not expect it would be earlier in Wales than in the London district.

GENTIANA SEPTEMFIDA.—A pretty autumn-flowering Gentian. It is to be desired that the good autumn Gentians were got out of the "dotty" state, and planted in little spreading colonies and groups on the rock garden, that one might see them to fuller advantage; only they must always have plenty of good soil wherever placed. From Mr. E. Jackson, Llandegai.

PICOTEE PAINTED LADY.—This is a charming novelty, and beautiful even among its race; the colour is very bright and peculiar; it would almost give a new zest to the culture of the Carnation and Picotee, rich enough and fair as these already are. It is typical of the interesting "breaks" one may see among those flowers when free from binding rules as to what are called "perfect" flowers.

SPARAXIS PULCHERRIMA.—The most beautiful and graceful plant that has come to us this year, 7 ft. high, with drooping racemes of lovely bloom. To see it so grown is worth a journey to the Caledonia Nursery, Guernsey, whence it is sent us by Mr. C. Smith. This lovely plant is rarely seen in good bloom in England, though we have seen it charming on light loam at York.

IPOMOPSIS ELEGANS.—The name of this biennial occurs very often in catalogues, but it is not often one sees it well grown. Some spikes of it sent during the week are among the brightest and prettiest things we have seen for a long time. The plants require peculiar treatment—sowing in autumn to flower the following year. They seldom get what they want. Where they would live out-of-doors through the winter the desired result would be obtained in the best way, no doubt.

A NEW SHRUBBY HIBISCUS.—The post is a friend to THE GARDEN and brings us from Mr. John Saul, of Washington, U.S., a nice dried specimen of "a beautiful scarlet Hibiscus from South-Western Texas, of shrubby habit, similar in growth to an Abutilon." In the summer of 1880 my only plant bloomed beautifully out-of-doors during summer. It was lifted in the autumn, kept in a cool greenhouse during winter, and set out in spring. It is at this date covered with bloom." Mr. Saul thinks it would prove hardy in England.

THE FLOWERING YUCCAS.—Much as we have said of these, we have failed to do them justice. The finest things seen in the open garden during the week have been the flowering pyramids of *Y. filamentosa*, well grown and well placed, 5 ft. high, not crowded among other tall plants, but standing clear and telling well—free, so to say. Every day things are planted in gardens which are merely effective in exhausting good soils, but these flowering Yuccas (we apply the term to *Y. filamentosa* and *flaccida*, because of their free flowering) are plants of the value of which there can be no doubt.

A HARDY CACTUS (*Opuntia Rafflesiana*).—We have been surprised during the week at the strange beauty of this plant on a little rock garden in Surrey, the broad leaves having grown more freely this season than Cactuses very often do in houses. There were many flowers of a good yellow either when opened or half closed. It seems probable that we may by-and-by fill an interesting little department of the rock garden by the aid of the hardy Cacti that wander from Mexico up along the Rocky Mountains and great cold prairies, where one may see them sprinkled with snow in early November.



## COUNTRY SEATS AND GARDENS OF GREAT BRITAIN.

## ENDSLEIGH.

THIS, the summer residence of the Duke of Bedford, is one of the most delightfully situated places we have ever visited. From Exeter to Tavistock it is about forty miles by rail, and Endsleigh lies some eight miles from the latter town. The drive from Tavistock is most enjoyable; the road runs through fertile country, chiefly pastoral, diversified with hill and dale, so that fresh views are opened up at every turn. The hills increase in elevation as we approach Endsleigh, the view from each successive eminence

commanding a wide range of country. Devon, to the lover of Nature, is one huge picture gallery, of which the fine views round Endsleigh form appropriate and beautiful pictures.

The lodge entrance to Endsleigh is embowered in trees, and its little garden is filled with old-fashioned flowers, among which were masses of the bright Golden Evening Primrose. From the lodge to the mansion is about a mile, the road winding through picturesque scenery—Nature and art blended so carefully as not to offend even the fastidious eye. Shrubs and trees of the most varied and interesting character abound. The verges of turf bordering the drive are of irregular outline, the trees and shrubs occasionally running almost down to the road, then receding up the high ground, forming

nooks and glades in miniature. Handsome groups and specimens of Rhododendrons are plentiful, and occasionally the rocks crop out, showing in a most picturesque manner a jutting peak or a shelving ledge. Ferns, too, for which Devon is so famous, are not wanting in the foreground; whilst grand masses of the common Barberry, full of clusters of fruit which will, when ripe, form a telling feature, distinct in its brightness, are plentiful.

Through an avenue of Rhododendrons, across an open glade of turf, we come upon a lofty eminence crowned with a Swiss cottage, and from the balcony in its front one of the finest views imaginable is obtained. In front of us,

are magnificent from their extent and their undulated surface rather than from the size and height of individual trees. There are finer trees at Killerton, Powderham, and other places in the same county, but they lack the grand bold outline and extent.

Our walk now is through the pleasant Ease-well Valley—to give it the name it bears, our guide (Mr. Prout, the gardener) telling us of the many miles of drives there are through the wood, of the long stone walls, and also pointing out the various wood-crowned heights. He tells us of Rickswood and of Warren Wood, of the Castle Head and the Mount. We now enter the precincts of the more highly dressed ground,



The "Pond Cottage" at Endsleigh.

stretching for miles, are wood-crowned hills gradually rising as they recede in the distance, until all things become blurred and indistinct among the dark crowns of the far-away hills of Cornwall. To the left in the far distance are also Cornish hills, the Kit towering above them all; down below, seemingly at our feet, but really 200 ft. beneath us, winds the gently flowing river Tamar.

Half a mile or so away from where we stand is the mansion, a picturesque building of the mixed cottage style. It is not a grand house, like Burleigh, Hatfield, or Chatsworth, but its outlines are artistic and essentially English, and above all it is peculiarly fitted for its site, with quaint creeper-covered gables and verandahs. From our standpoint we have also a fine view of the woods of Endsleigh, which

neatly and appropriately kept, but there is none of the scrupulous tidiness that makes it almost painful to walk about for fear of leaving a footprint in the gravel, or inadvertently placing a foot upon the sward.

Here we noticed several fine young Conifers, and some of larger growth. And of deciduous trees we noticed the White Poplar up the steep hillside, very effective amid the dark foliage of the Pines, and right in our path a handsome specimen of the Weeping Ash, and a handsome specimen of *Abies Albertiana* is growing near. The Weymouth Pine and a fine young *Araucaria* are also on the hill. The Deodar is evidently unhappy at Endsleigh; in fact there are but few places where it retains its beautiful colour and outline after it is twenty years old. *Pinus insignis* also dies in early life at

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this beautiful place, but many of the best kinds of Coniferae are quite at home. *Cedrus atlantica* is doing well and putting on its sheen of silver. This grand tree will be as useful as the Cedar of Lebanon, and may be planted almost universally. *Abies Douglasi*, *Picea Nordmanniana*—one of the hardiest and best of Conifers for general planting—*P. Pinsapo*, and many others are growing about the hills, all adding to the general effect.

Passing a pretty shell grotto, we come near the mansion and terraces. The lower terrace is arched over at intervals throughout its entire length with climbing Roses, and groups of Poppies and Sweet Peas flank the walk among the Rhododendrons and other shrubs.

The mansion improves as we draw nearer. There is an appearance of culture and refinement in its immediate surroundings that is very charming. There are no great breadths of gaudy flowers. There is a narrow border of sweet-scented flowers, mostly annuals, growing close up to and almost into the low windows; then a gravel path and an irregular stretch of closely-shaven lawn trending away in various undulations till the river is reached. The long border skirting the base of the mansion is planted in a sweet and homely fashion, just such a border as a man of limited income might have beneath his windows. There were Scarlet Linum, Godetias, Poppies, Saponarias, Larkspurs, Prince's Feather, Yellow Fumitory, Sweet Peas, Candytufts, Mignonette, Stocks, Annual Chrysanthemums, Lupines, White Mallows, *Convolvulus*, &c. The combined fragrance of such a border is now-a-days, when such things are so scarce, a thing to sigh for and dream of. Groups of taller annuals, hardy plants, and bulbs are on the lawn to the right of the house, but it is not overloaded with flowers anywhere.

North of the main building, but connected with it by a wide verandah and stone pathway is the children's cottage, and in the intervening space is the only formal flower garden I saw at Endsleigh. It is of small dimensions, laid out on gravel, and tastefully planted. There is a bust of Earl Grey in the cottage, and an effigy of one of the abbots of Tavistock in a niche at the north end of the mansion overlooking the small flower garden. The monks of Tavistock probably held property in this neighbourhood before the Dissolution. The village we saw down in the valley to the right called Milton Abbot, just before we entered the lodge, would suggest as much.

We leave the precincts of the mansion and enter the Dairy Dale, which is even more beautiful and picturesque than the grounds we have hitherto traversed. It is a deep dell or valley 100 ft. deep at least, and perhaps 200 yds. wide, intersected by winding paths which ascend the steep hillsides, occasionally disappearing behind a group of trees only to reappear at some spot where something special is to be seen. Precipitous cliffs are there bald and bold, and jutting crags peep out from beneath shrub and Fern; and down through the lowest parts, bubbling and rippling, is a tiny stream making as loud music as the river which is destined to swallow it up. The dairy, which stands at the bottom of the dale, is a very ornamental structure, both externally and internally. The inside, indeed, is fitted up most elaborately with marble tables and stands, the walls panelled with china, and the windows are of stained glass. It is not now used as a dairy, but is retained for its picturesque appearance in the landscape. Lower down the dale we emerge upon another interesting detached building called the Pond Cottage, a woodcut of which we give. It is entirely hidden at the back by trees, and there are also trees growing on the lawn in

front, their stems being picturesquely covered with Ivy and other creepers. The small lawn slopes down to a pond, which is encircled by a path overhung with trees, and round the edge of the water are growing huge plants of the Royal Fern, *Carex pendula* and other aquatics.

The overflow water from the pond falls over a cascade at the north end, and then rushes through Brake and Brier to the river. There are here several fine old Oaks with bald tops and gnarled stems, which denote the slow, but sure approach of decay. On the west side of the pond is a well cut out of the solid rock, called the Holy Well. Away up another flight of steps to the regions above, and we note the handsome white-barked Birch and the old Thorns draped with Ivy, with masses of rock cropping out covered with Ferns and other suitable vegetation.

The rock garden is a bold, rugged piece of work with a fountain in the centre, but after seeing so much natural rock, we do not care at this moment for the artificial.

Endsleigh being a summer residence, neither the kitchen garden nor the glass department is in any way remarkable, but the grounds, so far as our observation goes, are unique.

E. HOBDAY.

## THE ROSE GARDEN.

### A FIELD DAY AMONG ROSES.

THIS was literally and figuratively true: it was a day in fields of Roses. The large Rose gardens have now grown into Rose farms. It is already a long fatiguing walk; anon it will become a good ride—never, it is hoped, a gallop through them. A field day among Roses is a capital antidote to brooding notions and despairing ideas about Roses. We had thought *Maréchal Niel* and many other Roses dead, but a visit to the Rose farm of Mr. Benjamin Cant, at Colchester, shows us acre on acre of *Maréchal Niel* alive and well. Tea Roses by thousands on thousands in all forms and sizes abounded in all directions, and most of these looked fresh and strong, as if zero had never swept over them during the last winter. These Roses owed their safety to two causes—the site is high and so far favourable, and the plants were carefully protected in the way and manner that I have so frequently recommended in *THE GARDEN*. In regard to the site, though it is so situated as to command a magnificent view of Colchester, springs abound to such an extent, that the water almost touches the roots of the Roses—would, in fact, do so were the land not thoroughly drained. This close proximity of water evidently neutralises to a great extent the natural advantages of the elevated site of the Rose farm. The water below attracts the cold as much or more probably as the elevation or altitude repels or rolls it off. Hence the power of protection is illustrated on a grand scale by the safety of the stock of Tea and Noisette Roses. During the terrible severities of the past winter, a hand-to-hand struggle was waged on this farm between the dead and terribly destructive forces of Nature and the living power of human skill, energy, and perseverance. And the latter won the victory, to the salvation of thousands of Tea and other semi-tender Roses. Zero was baffled with straw, stubble, and a handful of Fern fronds. The tremendous energy of radiation was held in check, baulked of its legitimate prey—a full meal of Roses—by these apparently flimsy forces; and it is exactly in their flimsiness that the strength of such protecting material lies. Scatter them lightly over the heads and roots of Roses; they hold the vital fort of life impregnable against all the attacks of the frost. Use more compact and solid materials, or compress these too much, and the cold passes through, or rather the heat in the plants escapes, as if no barrier were placed between them and the open sky. This

truth was also illustrated in the old nurseries of Mr. Benjamin Cant.

### Dense or Thick Coverings a Mistake.

Where more dense materials were used on the heads of the Roses in lieu of the Bracken, those Roses were crippled or killed. In virtue of its greater thickness or density it held the wet, and the mass and moisture of the protecting material facilitated the escape of the heat of the Roses, and so did more harm than good. It is worth much to see proved on such a large scale that an elevated site, a handful of Bracken on the crowns, a surfacing of hay, stubble, or manure ensures the safety of Tea Roses through such a severe winter as the last. *Devoniensis* and *Maréchal Niel* may fairly be accepted as representatives of the Tea and Noisette family, and these and others of the same classes had escaped by the thousand. Possibly such protection might prove insufficient in low-lying wet places in close proximity to water. But fortunately we are not obliged to plant our Roses in hollows, nor as marginal plants to our artificial lakes or natural rivers; and on most suitable sites Mr. Cant's protection would prove sufficient. In regard to the root covering of dwarfs, the thickness may range from 3 in. to 18 in.; and even the power of the latter might be doubled, by earthing up the stems of the Roses before it was applied.

### Brick Walls for Tea Roses.

A fine new brick wall stretches across part of the upper end of the nursery running east and west. The south side is planted wholly with Tea Roses, which are making haste to clothe it with a compound growth from standards on the Brier and dwarfs. It is also intended to clothe the north side of this fine wall with Teas for summer cutting. The border on either side is also to be furnished for some distance from the wall with the same class of Roses. Tea Roses are also being planted in other sheltered places alike for stock, cut bloom, and sale, and this new Rose farm is likely to earn and merit the title of the home of the Teas. Assuredly they thrive with a vigour and flower with a profusion here that is seldom seen elsewhere.

Teas are a speciality on Mr. Cant's Rose farm. One meets with them everywhere in the most robust health and laden with bloom. The dwelling house is clothed with venerable and yet healthy Teas and Noisette Roses. Enormous plants of *Lamarque*, *Climbing Devoniensis*, and the original plant of *Maréchal Niel* clothes and adorns large portions of it with verdure and beauty. The *Maréchal* is worked as a standard on the Brier, and the two have clogged so exactly together that the usual protuberance at the point of union is conspicuous by its absence.

The habits of each variety are studied, and their peculiarities turned to account in every possible manner, so as to produce healthy and floriferous stocks of all the finer varieties. For example, little is heard of Cloth of Gold of late years. Those who grow it seldom get much or any bloom. Always rather capricious in this matter, it has well-nigh become sterile of late. Mr. Cant has noticed that by budding from flowering shoots this sterile habit may be modified and got rid of, and he is now propagating stock from the buds of flowering shoots only. A similar course is adopted with *Boule d'Or*. The complaint is that it seldom opens well unless under glass or on a wall. By working from moderate sized flowering shoots on the Brier as a standard, the *Boule d'Or* shows and opens freely on this farm.

### Stocks.

From Tea Roses to stocks and Briers is a rough transition. There is, however, a closer connection between them than at first sight appears. The Teas here are very largely grown on the Brier, alike as dwarfs and standards. This and the *Manetti* are the only stocks used in quantity. I never saw so many and such fine Briers. To write that there were acres on acres, thousands and tens of thousands, gives a most inadequate idea of their numbers. In closely



packed rows of 400 each, we walked between bushes of dwarf Brier and Manetti, and veritable woods and copses of standards. The uniform health and strength of these excited wonder, admiration, and a feeling akin to envy. For had not we lost full half our Briers? and here their well-filled ranks had scarcely a visible blank anywhere among them. It is all very well for we amateur growers and you editors to advocate Roses on their own roots. Those fields of Briers seem to bid defiance to our teaching. For the present there seems really no hope of it. Cuckoo like, the Rose will go on for many years using the borrowed roots of the Brier and other stocks, and there is room enough and work enough for all the Brier-carried and self-rooted Roses. And the more the practice of Rose striking can be practised, and the simpler and surer and more successful it can be made, the sooner our Roses will become all Roses, and perhaps, for those grand Briers raise a doubt, the better, stronger, and longer-lived our plants will be.

Writing broadly, there are but two stocks used by Mr. B. Cant on his farm—the Brier and the Manetti. The Briers are of two sorts—hedgerow standards and dwarf cuttings. Seedlings have been tried, and a Water Brier, that is a species or variety of the Wild Rose, of a greenish colour, generally found in moist or wet places. But cuttings are preferred to the former, and the latter is an experiment at present.

#### Mode of Rooting Brier Cuttings.

The Brier cuttings are put in early in the autumn, say October, and two eyes left out of the ground. They all seem to take and to grow freely. The next season they are replanted out, and budded on the old wood at the base the succeeding June or July. The Manettis are treated in the same manner, and on this farm make just such growths as delight the eyes of the rosarian. Nearly every variety of Rose makes most wood on the Manetti, and yields the finest flower from the Brier. Roses also, as a rule, live longer in health on the Brier than on the Manetti. They also flower earlier on the Brier.

#### Time and Conditions for Budding.

Plumpness of bud, firmness of bark of stock, were held to be of more ultimate value to the Roses than early budding. In one sense late budding is a necessity on such Rose farms as those of Mr. Cant's. Thousands and tens of thousands of dwarf Roses were only in full flower on the 20th, while very many had not yet reached that state. The shoots were full of vigour and of sap, and in the case of many thousands no good buds could have been formed. The fact, however, is worth noting for the benefit of impatient amateurs, that the major portion of the budding on Mr. Cant's Rose farm must this year be done in August.

Notwithstanding the enormous amount of work on hand, Mr. Cant seems in no hurry to begin. Scarcely any budding had been done at the time of my visit, the 20th of July.

#### Vigorous Condition of Rose Stocks.

—If anyone would like to see the results of budding with stocks and buds in proper condition he could not do better than pay a visit to Mr. Benjamin Cant's farm at Colchester. I did not see a single miffy plant on the grounds. Of course no one expects to see all Roses growing alike anywhere; that would be impossible, but the uniform health, strength, extraordinary vigour, and floriferousness of those fields of Roses is marvellous. One must imagine a garden full of every variety, and then multiply this area by the number of good Roses in existence, to get a mere glimpse of the sweetness and splendour of this Rose farm. Varieties are packed into solid masses like soldiers in brilliant uniform massed into squares of such well-known Roses as Alfred Colomb, A. K. Williams, Annie Laxton, Beauty of Waltham, Star of Waltham, Baroness Rothschild, Charles Lefebvre, Comtesse d'Oxford, Dr. Andry, Duke of Wellington, Duke of Edinburgh, Edouard Morren, Etienne Levet, Exposition de Brie, Fisher Holmes, François Louvat, General Jacqueminot, Horace Vernet, La France, La Havre, Louis

Van Houtte, Madame Charles Wood, Madame Hippolyte Jamin, Madame Victor Verdier, Madame Eugène Verdier, Marie Baumann, Marie Rady, Monsieur E. Y. Teas, Monsieur Noman, Pierre Notting, Reynolds Hole, Monsieur Vaisse, Sultan of Zanzibar, Thomas Mills, Xavier Olibo, &c., &c.

**Tea Roses.**—Among these the more striking were the Gloire de Dijon, Devoniensis, Belle Lyonnaise, Anna Ollivier, Homer, Jean Ducher, La Boule d'Or, Madame Bravy, Madame Hippolyte Jamin, Marie Van Houtte, Niphotos, Perle des Jardins, Souvenir de Madame Pernet, Souvenir d'Elise, Souvenir d'un Ami, Safrano, &c. Among newer Teas were Innocenti Pirola, a white with a slight suspicion of pink, of full size, and good form, flowers freely, almost another Devoniensis, but distinct, Madame Angele Jacquier.—This singular looking Rose is almost a new colour, and if it proves constant will be a very useful variety. The colour is of a deep coppery yellow with a pink centre, the flowers large, and form fair. Madame Welch.—Flowers large, full, and of good form, colour light yellow with a dark orange centre.

**Of the Newer Kinds of Roses.**—Of these, the following seemed most worthy of note: Alfred K. Williams is now four years old. Still, as I was asked for a verdict on its merits some time since, the good stock I saw of it here, as well as its constant appearance on winning stands throughout the season, enables me to state that it is one of the finest, if not the most valuable, introduction of late years. Mr. B. Cant remarked of it "that it was always good," and assuredly its large, full finely-formed, bright carmine-coloured flowers were in no danger of being overlooked among the semi-bewildering masses of beauty that furnished this Rose farm. Countess of Rosebery.—This is a free-growing, brilliant Rose of the Etienne Levet type, and its reddish salmon-coloured, smooth petalled flowers will be welcome in the garden as well as admirable for bouquets, and perhaps also show purposes. The Duchess of Bedford is another of Wm. Paul's Roses that promises well. The flower is of fine moderate size, the petals slightly reflexed, colour rich velvety crimson, suffused with scarlet. Dr. Sewell is another fine Rose added to the dark maroon crimson class, of which we have already too many for our own comfort in hot weather, as they absorb the heat so much as to burn themselves. It is of fine form, full size, distinct, and beautiful. Gloire de Bourg-la-Reine.—This is one of the most brilliant of all the new Roses, and is likely to prove one of the most valuable of our garden Roses, the flowers being large, and of a brilliant scarlet colour. Harrison Weir.—One of the best and most beautiful of the new Roses, of good size, substance, and form, and rich velvety crimson colour. Jules Chretien.—Very distinct in habit and colour, and full of promise, good form, full size, bright crimson shaded with purple. Madame Gabriel Luizet.—This it also a most promising new Rose, of vigorous growth, and very distinct character. Penelope Mayo.—A lovely brilliant carmine Rose, of full size, great substance, and perfect form. Pierre Carot.—A most promising Rose, of excellent free habit, of dark red colour tinged with violet, large size, and excellent form. Prince Arthur.—This is one of Mr. Cant's raising that promises to be a useful all-round Rose, beautiful in the garden and also indispensable for exhibition. The form is well high perfect, and the colour of a deep brilliant crimson. Among Noisettes, the most striking feature was the enormous stocks of the Maréchal Niel alike as standards and dwarfs, and the vigorous growths they have made. It is obvious that no one need suffer from any dearth of gold among their Roses beyond the present season, as this farm alone seems capable of making good the golden losses of the nation. D. T. FISH.

**The Japanese Rose (p. 102).**—It is very certain that the beautiful *Rosa rugosa* (Ramanas) is not the new Rose it is generally supposed to be. It was described by Thunberg nearly a hundred

years ago, and afterwards by Lindley in 1820, but from Thunberg's description, and not from personal observation. There is, however, no doubt that he had seen it, and described it as *Rosa ferox*, both in his monograph of Roses and (with a figure) in the Bot. Reg., p. 420 (1820). As *Rosa ferox* it has lingered in the gardens till it was again brought into fashion with the white and double varieties a few years ago. The true *Rosa ferox* of Mars. Bieberstein is a totally different plant.—HENRY H. ELLACOMBE, *Bitton Vicarage*.

**Roses Mildewed.**—I should like to obtain advice about the treatment of Roses in a cool house. They are covered with mildew, and we are quite at a loss what to do. We have tried smoking, but that has done no good. What can be done so as not to injure the bushes, which are covered with buds?—H. P. M. [The simplest, safest, though it is rather a slow cure in bad cases, is sulphur, pounded fine, and applied through a dredger box over the leaves. The Roses should be syringed overhead first, seeing that the under as well as the upper sides of the leaves are wetted. Then dust both sides of the leaves and the young wood with the sulphur-coating, in fact, the affected parts with it. If properly done the plants will look after the dressing as if they had been dipped in sulphur dust. The sulphur often fails because it is too coarse, and is also applied in the wrong place and way. The finer it can be, and the more completely every infested part is sulphurised, the better. To bring the sulphur in closer contact with the mildew sources, convert it into a liquid infusion by boiling. A quarter of a pound of sulphur boiled half an hour in a gallon of water makes a decoction strong enough to kill mildew. The dry sulphur is, however, the safest method. It may remain on for a week or so and then be thoroughly syringed off. Should the mildew be destroyed, that will suffice; if not, repeat the dose until it is. The dry sulphur, though rather unsightly, will not injure the buds. The sulphur tea may for the future be used; but the trees should outgrow the mildew, or rather it should never be allowed to gain a footing. It is generally produced by sudden draughts or changes of temperature, extremes of moisture or of dryness either in the earth or air, an excess of food or starvation, or a stuffy atmosphere. Avoid these, and the moment a mildewed leaf, shoot, or plant appears, out with it, to prevent it affecting the others. Such precautions and careful ventilation will generally suffice to prevent mildew, which is not only better, but far easier than cure.—D. T. FISH.]

**Movements of Leaves.**—Leaves, Mr Darwin says, when they go to sleep, move either upwards or downwards; or in the case of the leaflets of compound leaves, forwards, that is, towards the apex of the leaf, or backwards, that is, towards its base; or again, they may rotate on their own axes without moving either upwards or downwards; but in almost every case the plane of the blade is so placed as to stand nearly or quite vertically at night. Moreover, the upper surface of each leaf, and more especially of each leaflet, is often brought into close contact with that of the opposite one, as the upper surfaces appear to require more protection than the lower. The evil effects which result if sleeping leaflets be prevented from pressing their upper surfaces together, so as to protect them from radiation, were well seen in experiments of Mr. Darwin's, in which he pressed down the leaflets of Oxalis, Marsilia, &c., so that they could not bring their upper surfaces into contact; the result was that the leaves were killed. Thus of twenty-four leaves of Marsilia extended horizontally, exposed to the zenith and to unobstructed radiation, twenty were killed and one injured, whilst a relatively very small proportion of the leaves, which had been allowed to go to sleep with their leaflets vertically dependent, were killed or injured. Mr. Darwin noticed that the difference in the amount of dew on the pinned-open leaflets and on those which had gone to sleep, was generally conspicu-



ous, the latter being sometimes absolutely dry, whilst the leaflets which had been horizontal were coated with large beads of dew. Another fact observable was that when leaves were kept motionless, they are more liable to injury than when they were slightly waved about by the wind, and thus got a little warmed by the surrounding air.—*Popular Science Review*.

## TREES AND SHRUBS.

### IVY ON TREES.

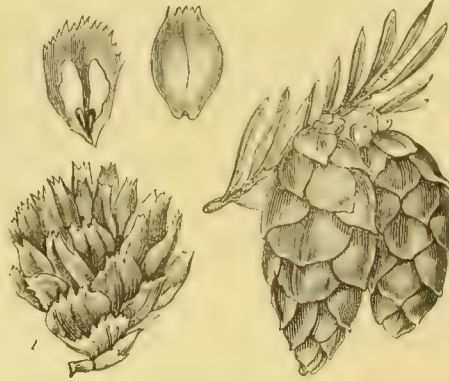
I AGREE with "Repton" in thinking that Ivy is not so hurtful to trees as is generally supposed, but I do not go so far as to think that it does not injure some trees even to the extent of killing them. These, however, are the exceptions rather than the rule. Very much depends upon the species it grows upon. On umbrageous trees with abundance of foliage producing a deep shade, the Ivy is over-mastered, and never makes sufficient progress to do any harm. It is a plant that loves the light, and will not grow fast or well under the branches of a Sycamore or a Beech, for example. With scanty foliated trees, however, it is different. Many years ago the noble proprietor here had Ivy planted against the stems of the trees in many places, and it has been growing with the trees as they grew. On the Birch it grows fast, and some of these have, in the course of time, been all but entirely covered from bottom to top. The last one fell a few years ago, apparently killed by Ivy, which had covered it all but a few feeble twigs at the very top, all the side branches having perished one by one previously. The Birch was about 60 ft. or 70 ft. high, and fell during a gale of wind, the trunk being quite rotten near the base. We have other trees of the same kind and age and much larger ones also, but they are in good health; these have no Ivy upon them. The Birch, being a scanty leaved tree, of course the Ivy grows fast upon it and overmasters it. The species on which it thrives next best is the Larch, and we have fine old specimens of these showing an even and tapering column of Ivy about 70 ft. high, and 3 ft. or 4 ft. through, 20 ft. from the ground. The branches of the Larch are dead as far up as the Ivy goes, but the trees on which no Ivy is growing are in no better condition, and some of them not so good. They are all about 80 years of age, and the Ivy upon them cannot be much younger. On the Ash the Ivy makes some progress, and some of our old trees are clothed to near the top with it, side limbs and all, and do not look in very good health, but whether due to the Ivy or not I would not venture to say. On the other trees that have good and ample foliage it never makes much headway, and we have no example of it in the Beech worth speaking of. It thrives on Scotch Fir, but on the Sycamore it is either dead or dying in most instances. J. S. W.

### THE BLACK SPRUCE.

(*ABIES NIGRA*.)

THE Black Spruce is throughout the northernmost parts of America one of the most common of the Fir tribe, large forests being composed of it, in some cases alone, and in others in the company of the White Spruce (*Abies alba*), from which it is readily distinguished by its colour, the foliage being of a dark hue; in *Abies alba* the foliage is much lighter, although others might now be pointed out to which the name of the White Spruce could with more propriety be applied, such as some forms of *Abies Menziesi* and the glaucous variety of *Abies Engelmanni*, but at the time *Abies alba* and *nigra* were introduced (about the year 1700) the other kinds were unknown. The leaves, with which the branches are thickly clothed, are mostly about  $\frac{1}{2}$  in. in length, and the cones  $1\frac{1}{2}$  in., these latter being when young of a purplish colour, which adds still more to the sombre

appearance of the tree. In its native country the Black Spruce attains a height of from 50 ft. to 80 ft., but in common with all widely distributed kinds it varies a good deal in many particulars, so much so, that one of its forms is often found under the name of *Abies rubra*, but is scarcely sufficiently distinct to be considered a species, the principal difference being that it is of a rather more vigorous habit, with



The Black Spruce (*Abies nigra*).

both longer leaves and larger cones than the ordinary form of the Black Spruce. As a timber tree this Fir is largely used in Canada and the Northern States, occupying there about the same position as the Norway Spruce does in Europe. The Black Spruce succeeds best in a cool, moist, loamy soil, and when so situated its distinct characters are very noticeable, and its rate of growth is, although not rapid, yet moderately fast, while in dry hot soils it assumes a sickly appearance and makes but little progress.

The White Spruce (*Abies alba*), which is often found in company with the foregoing, is a smaller growing tree; the leaves and cones, however, are of about the same size as those of the Black Spruce, but both the foliage and the bark are of a much lighter colour. This Spruce



The White Spruce (*Abies alba*).

is very useful as a medium sized thoroughly hardy tree, succeeding best under the conditions favourable to the Black Spruce, but it also does well in exposed places if not too hot and dry. This species is said by Sir J. Richardson to extend nearly to the Arctic Sea, and being the only tree that the Esquimaux have access to in a growing state is much sought after by them and turned to a variety of uses. ALPHA.

**Ceanothus Gloire de Versailles.**—The collection of *Ceanothus* at Kew suffered severely

during the last winter, many kinds being cut to the ground, and all, with one exception, being in a sadly crippled condition. This one (*Gloire de Versailles*), is a hybrid Continental variety, which, although slightly injured, has recovered, and is now a charming mass of flower. If so much superior in hardiness to the others, as one would suppose from this specimen, it should certainly be looked after, for these beautiful shrubs are in the open so often injured by the winter as to prevent them from flowering satisfactorily.

**Japanese Maples Hardy.**—At page 125 I see it stated that the Japanese Maples are not hardy. I can only say that I have nearly all the varieties, and they have stood the winter without any protection, and are not in the least injured.—R. HANBURY, *Poles, Ware*.

**Propagating *Xanthocerus sorbifolia***—It is stated in a recent number of the *Journal of the French Horticultural Society*, that the best method of increasing this is by means of root cuttings, the smallest portion of which will grow. It is also highly recommended for forcing.—C.

**Lilac Madame Moser.**—This variety is highly spoken of in the *Journal of the French Central Society of Horticulture*. It is a pure, white kind, and was considered worthy of a first class certificate. It was exhibited by M. Moser, nurseryman, at Versailles.—J. C. B.

**Aria Decaisneana.**—At a recent meeting of the French Central Society of Horticulture, M. Lavallée exhibited flowering specimens of this new tree. He described it as forming a tree of moderate proportions, differing from the rest of the genus in flowering and fruiting every year. The leaves are larger than those of its congener *villosa*, the upper surface being covered with long silky hairs. In the early part of the season the foliage assumes a whitish tinge, which later on changes to an intense green. M. Lavallée also exhibited a new Japanese *Viburnum*, named by him *V. hydrangeoides*, and a new unnamed *Ribes* of a very ornamental character.—J. C., *Byfleet*.

**Clematises and Wistarias.**—A pretty effect with climbing plants is formed by allowing Clematises to mingle with *Wistaria sinensis* on a wall. We have now enormous blossoms of *Clematis lanuginosa* studded all over a large *Wistaria* that, at this time of year, always turns of a pale yellow or straw colour, and the effect is very pretty. Many very pretty combinations may be formed with Clematises, as, for instance, the purple Jackmani, if trained thinly over a ground-work of variegated Ivy or *Euonymus*, for the Clematis does not shade the plant, it is trained over enough to injure it in the summer, and as soon as the foliage dies away in the winter, the Clematis may be closely pruned in and securely fastened, for a very few shoots left at the winter pruning will make a gorgeous effect when fully grown the following summer.—J. GROOM.

***Spiraea arifolia*.**—Permit me to add my meed of praise to that of others already given on behalf of this exquisitely beautiful shrub. To have it in full grace and beauty a partially shaded site is desirable for it. In the eastern counties, in the open and fully exposed to the sun, the flowers are less pure and fluffy. Those who have seen the plant in full beauty will appreciate the latter phrase. The long sprays of bloom, white as driven snow and lighter than eiderdown, droop down with a grace and beauty that no plant can match. All other *Spiræas* are in fact heavy and stiff contrasted with this. The foliage is so small and sparse on old plants as hardly to be seen. The plant is all bloom, and stands up amongst or in front—the latter being the best place for it—of other shrubs like snow-flakes built up and wreathed out by fairy fingers. We prune our plants but little. Our finest is about 7 ft. high, and perhaps as much through or more. The growth is slender, and the flowering branches droop. This plant is, however, a great age. Younger ones are neither so white nor so graceful, though they are also very beautiful. Every garden, however small, should have one of these *Spiræas*, while there are few larger ones that would not be



vastly improved by fifty or a hundred of them.—D. T. FISH.

— It would at all times be difficult to speak too highly of *Spiræa arifolia*, noticed on p. 98 of THE GARDEN, but I do not agree that it needs cutting back. Six or eight here of 30 years' growth in the poorest of soil are 22 ft. in diameter; they have never been cut but for decorating, except on one occasion, when one or two thousand persons were allowed to gather flowers from them or anything else in the shrubberies *ad libitum*. However, on the second day of the fête when they commenced breaking off the top branches they had to be stopped.—C. ISHAM, *Lampport Hall*.

## THE FLOWER GARDEN.

### LARGE HERBACEOUS PLANTS.

CONTIGUOUS to my house on the north side is a hollow in the clay, about half an acre in extent, and surrounded by brick walls. It was known to my ancestors as "the broad lake." In wet weather the surface water used to collect there and supply the moat which then surrounded the house. The slopes of it were formerly covered with pig-styes and shippens (or cowhouses), the drainage of which, mixed with rain-water, used to make a pond which nothing but good constitutions and absence of sanitary inspection would have endured within twenty yards of a family mansion. I have heard an old relation speak of the fun it used to be when the tithe geese (for the squire was also the lay rector), some hundred in number, used to be brought home and turned into "the broad lake," keeping the house awake all night by their cackling. This pond I was vandal enough to drain and fill up, and turn into a kitchen garden. A few years later, becoming fonder of flowers than of fruit, I stole a width of 6 ft. all round it, as it was surrounded by a walk, for a herbaceous border; but some of the plants were nearly 6 ft. across, so I made a 1-ft. wide track inside the border, and got leave for just one row of plants on the other side of the track. Here I now grow some giants, many of them plants such as are generally consigned to wild gardens, in happy soils where wild gardens are possible, but they are not out of place where I have put them. All are strong and hardy, and their height is from 4 ft. to 7 ft. or more. Here I grow the wild Elecampane (*Inula Helenium*), a plant of which has ten stalks, each bearing about a dozen flowers; the radical leaves are 3 ft. long, and nearly 1 ft. across, and it is 7 ft. high and 6 ft. across—a grand specimen; *Centaurea macrocephala*, with flowers like those of a huge yellow Thistle; *C. aurea*, with similar flowers, but of taller growth and more floriferous; *C. montana*, blue, white, and rose. Lilies, Orange and Nankeen, the latter fully 6 ft. high, and bearing as many as seven fine flowers on a stalk; Mulleins, yellow and white, up to 8 ft. high. Meadow-sweet, pink and double white; Scarlet Lychnis; blue and white tall Veronicas; *Achillea macrophylla* and *Spiræa Aruncus*; scarlet, white, and purple Monardas; Canadian Fleabane; bright blue Alkanets, always full of bees; and blue and white Monks-hoods, Ligularias, and Silphiums; and tall Asters; not forgetting those handsome large white Daisies, *Leucanthemum lacustre* and *Pyrethrum uliginosum*. That huge Scabious, *Cephalaria tatarica*, is in its right place here, and so are the Sun-flowers, the best being *Helianthus rigidus*, *H. decapetalus*, *H. latiflorus*, and *Rudbeckias*, with their abundance of showy flowers. The larger *Potentillas*, both single and double, do well, and so do some of the Mallows, especially the white Musk Mallow, growing here to an incredible size. Goat's Rue, of three distinct colours, makes plants 5 ft. high and as much across, endless in their flowering; whilst

gaps are filled by *Oenothera Lamarckiana*, which rejoices in the shelter of the other tall plants. *Sambucus Ebulus*, a native herbaceous Elder with pink anthers, is now very pretty. I might also mention amongst many others, perennial Lupines, tall Poppies and Heleniums, but I must not say too much, for I hear, second and third hand, that some of your readers doubt the descriptions and dimensions of my plants, and exclaim "Impossible!" Certainly, there are few to verify my statements, for Mr. Ewbank, of Ryde, is nearly the only amateur who has visited my garden in the last two months, but to the incredulous, I say, come and see, and bring your measuring tapes with you. My garden is open to all who will give me notice of their coming and care to see it. I confess that I make the best of my plants when I sing their praises.

*Si canimus flores, flores sint carmine digni*, or something like it, was a line in one of the first lessons of Virgil which I learnt at school, and from it I learnt that we ought to make the most of the subjects of our praise. As long as the pages of THE GARDEN and other journals are open to me, I do not see why my flowers should suffer the oblivion which shrouds the heroes who lived before Agamemnon's time, when there was no such thing as writing. C. WOLLEY DOD.

*Edge Hall, Malpas.*

### BLUE-FLOWERED ALLIUM.

(*A. CÆRULEUM*.)

So distinct is this species from its compeers, or indeed from any other hardy bulbous plant,



Blue-flowered Allium (*A. cæruleum*).

that it is well worth growing in any garden. The annexed woodcut shows a natural-sized head of flowers, which are a deep azure blue, and being, like the white-flowered kinds, borne on long slender stalks are well adapted for cutting purposes. It succeeds well in any border of light soil in a sunny position, and continues to flower for a long time during summer. It is often called *A. azureum*, but the true azureum of Ledebour is synonymous with *A. cærulescens*, an inferior plant to *cæruleum*. Another handsome globe-headed Allium in flower at the present time is *A. descendens*, having deep purplish-red blossoms that continue in perfection a long time when cut from the plant. It is of

easy culture in any border. Other kinds of Allium we should recommend besides the white-flowered kinds mentioned at p. 79, are *Murrayanum*, *falciforme*, *Moly*, *acuminatum* and its varieties *lacteam* (very fine), and *fragrans*, the latter having flowers finely scented. W. G.

### NOTES ON HARDY FLOWERS.

THE following hardy plants are amongst many good kinds grown by Mr. Munro at his nursery near Edinburgh: *Brachycome Sinclairi*, *Gentiana incisa* and *G. Froelæchi*, the latter a dwarf kind with a blossom rather like *G. asclepiadea*, but not over 2 in. high, stem and all, and *G. ornata*, ranking second only to such kinds as *verna* and *bavarica*; *Asperula cynanchica* and *Silene petraea*, both rather like Sandworts; *Pentstemon heterophylla*, a beautiful alpine species, and *P. humilis*; *Androsace lactea* and the pretty and distinct *Saxifraga androsacea*; also *S. Zimeteri*, very dwarf and compact; of the Aizoon section, *S. cochlearis* and *S. pyrenæica maxima*. *S. aquatica* looks quite different when grown in a pot, and on dry soil, from what it does in a bog bed, where it grows many times larger. *Geranium Wallichii*, with blue flowers striped with red, a prostrate kind; *Campanula Allioni*, and one which is either the true *C. fragilis* (which Mr. Munro remembers Mr. Stirling calling it), or its variety *Barrelieri*; *Arabis petraea*; *Linaria origanifolia*; *Hypericum ciliatum*; *Chelone Lyoni*; *Nierembergia rivularis*; *Triteleia Murrayana*; and *Hemifragma heterophylla*, a creeping plant which has deep red berries, and is as dwarf as *Nertera depressa*; *Sheffieldia repens*, which much resembles *Anagallis tenella*, but with white flowers and somewhat stiffer growth. This appears to be an excellent plant for the choicer parts of the rock garden, as is also *Soldanella minima alba*. The *Edelweiss* grows freely here. *Origanum Tourneforti*, the Dittany of Crete, proved perfectly hardy last winter. A *Scolopendrium* about 1 in. high, more like a dense-growing *Selaginella*, is very curious; it was found in a Vine border. The following plants are more fitted for beds and borders than for rockwork: *Aster pyrenæicus*, *Dactylis glomerata aurea*, *Delphinium chinense* (the old single Siberian Larkspur), *Eryngium alpinum*, with flower-heads much larger than *E. amethystinum*; of the latter Mr. Munro has a very blue form. *Goderia acaulis*, a large yellow Composite from Central Africa; *Malva moschata alba*, with pure white flowers over 1 ft. high, *Gaillardia grandiflora*, *Rudbeckia purpurea*, *Linum provinciale*, a brilliant blue Flax, *Spiræa Foxi*, and *Mimulus coccineus*, evidently a form of *M. cardinalis*, of a deep pink colour, *Veronica corymbosa vera*, and *V. telephifolia*. A large bed of many-coloured Cornflowers shows how bright and beautiful common and easily grown hardy flowers can be. Mr. Munro grows the following early *Chrysanthemums*, so dwarf as usually not to require tying, and covered with buds. A few flowers are already in blossom: *Andromeda*, deep crimson; *Albafiora*, white; *Cassy*, flesh colour; *Fred Peel*, maroon; *Filberti*, yellow quilled; *Du Luxembourg*; *Illustration*, pink, changing to nearly white; *Orion*, yellow; *Madame Pecole*, soft rose; *golden Gem*; *White Queen*; *Scarlet Gem*; *Gold Button*, with creeping underground stems. C. M. OWEN.

**Veronica Traversi by the Sea.**—Visiting Trundle a few days since, and looking through the ground attached to Cliff Terrace, I was glad to see the first outdoor *Veronica* I noticed flowering this year that escaped last winter. It was a few yards from but 100 ft. above the sea margin, and apparently had no protection



last winter. Outdoor Hydrangeas, Jasmines, and Fuchsias that were all killed with me and others inland all seemed to have escaped here, and I understand in other places around the southern coast. Probably this was the same as Mr. Jackson's, referred to p. 79 as *V. devoniensis*, and which also survived with him at Bangor. This points to a marine location being more equable in temperature.—W. J. M., *Clonmel*.

### LILY CULTURE.

It would add to the usefulness of "Country Gentleman's" good practical article you quoted from (p. 80) if we knew the conditions of climate and natural soil under which the Lilies were grown. I hope by the end of the year to have proved that *Lilium auratum*, at least, depends for success on having moisture at its roots, and that the reason that a light, open peat and loam soil has in most situations proved the best for its growth is, that it gives this condition, as it enables the long roots (I have measured *L. auratum* roots 4 ft. long) to go down to seek moisture. Nearly two years ago I planted one or two hundred of *L. auratum* on the natural soil of a light loamy hillside with a damp subsoil, in full exposure to the sun, with great doubts as to the probability of success; they succeeded so well that I followed up the experiment by planting some thousands near them. These are now coming into beautiful flower, having been untouched, except in a very few instances, by the May frost, which damaged many of those planted in more sheltered situations, though not sheltered as in *Rhododendron* beds, where they seem always to prosper.

We have this year for the first time succeeded in blooming well the old white Lily (*L. candidum*) in three different situations. It was a reflection against an old Lily grower that *L. candidum*, which succeeds without care or attention in so many cottage gardens, and grew well in our own old garden, would not, after many experiments, including leaving it alone, be made to flower well with us, but there was the melancholy consolation of having an answer to those discouraged after failure in growing other Lilies—"Once learn the soil and situation they want in your particular garden, and your difficulties will be at an end, as mine will be when I once learn how to grow *L. candidum*." G. F. WILSON.

*Heatherbank, Weybridge.*

### SELECT DELPHINIUMS.

FEW hardy flowers are more worthy of universal culture than the Perennial Larkspur, combining stateliness of growth with brilliancy of colour, and being withal of easy culture and by no means difficult to please in the matter of soil and situation. In Mr. Stevens's garden at Byfleet Delphiniums have for some time made a grand display, and as the collection consists of about 100 varieties, containing, not only the best of the older kinds, but also many of the newest introductions, it may be considered as truly representative. It is scarcely necessary that I should describe the whole of this collection, as, although all the varieties are beautiful, and there is not one but would prove an ornament to any garden, many of them so much resemble each other as to render their presence desirable only where it is sought to form a large and more or less complete collection. I therefore propose to enumerate the best only of the various types into which these Delphiniums throw themselves, so that any one wishing to commence the culture of these noble hardy flowers, will by choosing from the subjoined list secure as much variety of form and colour as they are capable of affording. The most showy kinds and those best suited for obtaining bold masses of colour and distant effect

appear to be the single-flowered varieties of the *formosum* and *Hendersoni* type. These are, as a rule, very free flowering, forming large, spreading panicles of bloom, and are generally of robust habit, and are therefore well adapted for dotting amongst shrubs, or for massing together in large bold groups where striking effects are sought for. Some of these varieties have, in Mr. Stevens's garden, attained a height of 8 ft. with corresponding amplitude of foliage. The effect of these large specimens when in bloom was truly grand. One of the finest kinds in this section is *Madame Hock*, a strong habited variety bearing deep blue flowers with a white centre. *Mesoleucum superbum* is much in the same way, as is also *Montmorency*, the flowers of which, however, are, when first opened, of a brighter blue than the preceding, taking on a tinge of purple as they advance in age, the outer petals changing to mauve. This is a grandly effective kind, the foliage being broad and handsome, and the habit exceptionally strong. *Formosum lilacinum* is a very pleasing pale large-flowered kind. *Gloire de St. Mandé* is an attractive variety with fine dark blue flowers slightly tinged with crimson, and brown centre. *Defiance* is much in the way of *formosum*, but has larger flowers; and *Attraction* is one of the most floriferous kinds grown, and when seen in the form of a large specimen a really noble object.

In Herman Stenger we have a wonderfully fine variety with double flowers, the outer petals of which are of a fine rich blue, the inner ones clear violet tinged with mauve with a very pronounced metallic hue, altogether a beautiful combination of colours. Two attractive light coloured kinds are to be found in *Sphere*, a variety of moderate growth, and *Michael Angelo*, a strong grower bearing a profusion of flowers of the most lovely silvery blue. *Alepacroxiodes* is an extremely double neat habited kind, the flowers densely packed on the stems; other good doubles consist of *Delight*, double blue, *Glynn*, crowded spikes of bloom, blue, white centre, *Barlowi vittatum* and *Star*, a dwarf kind, extremely double, the flowers disposed with extreme regularity, and *perfectum novum*, forming a dense head of bloom, the flowers of a rich purple being densely packed on the spike—a very vigorous grower. *Triomphe de Pontoise* and *Pompon de Tirlemont* are two very distinct kinds, the former being a dwarf variety with doubled button-like azure blue flowers, the latter bearing single blue flowers flushed with blue, closely set on the spike. Another distinct and altogether charming variety is *Victor Lemoine*, the spikes of which are of great length, the flowers semi-double, the inner petals being white, shaded with blue, the outer ones clear blue. *Trophée* is a new introduction, and represents a new break in this family. The outer petals are large, of a fine clear blue, the centre consisting of numerous florets white and striped with lilac. Other fine kinds consist of *Rahama*, a grand variety, remarkable for the metallic lustre which distinguishes the richly-coloured flowers; *Madame Henri Galotat*, *Louis Figuer*, *Azureum plenum*, worthy of special notice; *Mad. Ravillana*, and last, not least, the lovely *Belladonna*, which should be found in every collection, however small. J. C. B.

**Azurean Thyme.**—*Thymus azureus* is worthy of notice, as it creeps about very close to the soil on the rockery, and is now covered with racemes of rather pale blue flowers, which, with the foliage, are very sweetly scented. It is very similar in habit to *T. micans*.—A. S.

**Delphinium ranunculoides.**—This Larkspur is a fine plant for the mixed border; in fact it is particularly striking as we have but so few really double Larkspurs. It may be known to those who are really much interested in hardy plants, but I doubt if it is much known to gardeners. When grown in a good rich soil it makes fine spikes of bloom, and, as its name denotes, it is as double as a *Ranunculus*. The colour of the flowers is best described as a deep violet-blue.—I. E. X.

**Smilax** (p. 109).—If "H. M.," Bromsgrove, will send me his address I will send him a spray of the true *Smilax* of Theophrastus. It is a very common South European plant.—H. N. E.

**Dahlia scapigera.**—I met with this the other day at the Oxford Botanic Gardens, and a pretty little thing it is, very desirable for cutting; the flowers are small, single, of a bright lavender or mauve, with yellow anthers. As single Dahlias are so much sought after now, it seemed to me that this ought to be better known.—DELTA.

**Tropæolum Bedford Rival.**—Having used it for years as one of our principal bedders, I vouch and testify like "A. D." (p. 98) to its continuous free flowering and compact growth. Almost immediately after the heaviest storms of rain, whilst *Pelargonium* flowers are washed out, this, though laid a little, very quickly regains its accustomed beauty, which continues long after the *Pelargonium* season is ended.—W. W.

**Campanula persiciflora flore-pleno.**—This is a very chaste and beautiful hardy plant that has been before noticed in THE GARDEN, but it can hardly be noticed too often as it is a most useful plant where white flowers are in request, and as it is easily cultivated there is no reason why it should not be more often met with. It should be planted in a fairly dry soil and every second year the old plants should be taken up, divided and planted in some fresh soil.—I. E. X.

**Echium rubrum.**—Not long since a correspondent highly praised this plant, and certainly it deserves it. A plant I have now on the rockery is in full flower, the stem is nearly 2 ft. high, and furnished nearly the entire length with flowers of a reddish purple colour. The plant even in foliage is very ornamental, and it may even be termed stately. I have heard of *E. albicans*, but do not know it, and should be glad if any reader would send me one; if so, I will send in return *E. rubrum*.—A. S.

**Flowers Becoming Weeds.**—Allow me to warn such of your readers as live in a climate like this, and with light sandy soil, against admitting to the garden proper such plants as *Linaria tristis*, *Eschscholtzia*, *Limnanthes Douglasi*, *Mimulus cardinalis*, *Nemophilas*—they become most persistent weeds. The following also seed here like weeds, and come up everywhere: *Myosotis dissitiflora*, *Viola tricolor*, *Nasturtiums*, *Arabis alba*, *Digitalis* (fine sorts), *Mimulus* (spotted), *Pyrethrum Golden Feather*.—ACHNAMARA.

**Balsamita grandiflora.**—Seeing that nobody has presumed to answer Mr. Burbidge's second query respecting this plant, I must conclude that he has been answered already, and that the plant is, as named, *Plagiis grandiflora*, otherwise *Balsamita grandiflora*; and I think it must be acknowledged that my supposition was not far wrong. The discoid-flowered composites are not very common, and I cannot at this moment call to mind any plant that may be confounded with the above except *Craspedium Richei*.—THOS. WILLIAMS, *Ormskirk*.

**Erythræa littoralis.**—Although a British plant, this is one well worth cultivating, as it is not by any means plentiful in a wild state. It forms tufts of shining green foliage from which the tiny flower stems spring. These are from 4 in. to 6 in. high, numerous divided, bearing lovely four-petaled flowers of a rich pink colour, rather less than  $\frac{1}{2}$  in. across; the flowers last a considerable time in beauty, and will withstand full exposure to the sun, although partial shade is beneficial. We have it planted in ordinary soil on the rockery and it is much admired.—A. S.

**Bladder Sennas** (*Colutea*).—Although common, the curious inflated seed-pods of these are so distinct from any of their compeers as to suggest themselves to the notice of the planter, succeeding as they do in almost any soil or situation; even in hot sandy places, where little else flourishes, they grow and flower profusely, and the blossoms succeed each other for such a long



time, that one sees flowers and full-sized pods on the same branch. The leaves of this being sometimes used as senna on the Continent, have, in conjunction with the inflated pods, obtained for it the name of Bladder Senna.—ALPHA.

**Campanula carpatica pelviformis.**—This plant is, I believe, one of M. Froebel's introductions. It is a Harebell of the first rank, being so very distinct even from the type. My plant is comparatively weak, but nevertheless there are a great many flowers now expanding about 1½ in. across, and very open saucer shaped. The colour is very pale blue, and the blossoms are borne on stiff erect stems about 9 in. high, although they grow much taller during a damp season or when the plant is thoroughly established. It is a most valuable border plant, and I have no doubt will reproduce itself true from seed. This must be the same plant as that described as *C. turbinata* var. at p. 82.—A. S.

**Hybrid Lily** (*Lilium tigrinum* × *croceum*).—Stem about 5 ft. high, stout and strong, spotted and clouded with dull purple, and thickly clothed with dark green obovate lanceolate leaves, and surmounted by a crown of more than forty flowers on long footstalks of a clear apricot yellow, spotted somewhat sparsely with maroon a third of their length. The tip of the petal is unspotted. The bloom much resembles that of *L. Leichtlini*, but is a darker shade of yellow. The petals are only slightly recurved with yellow on the tip. Raised by Mr. J. D. Mangles, Valewood, Haslemere.—Rev. H. HARPER CREWE.

**Verbenas from Seed.**—Messrs. Sutton, in reply to enquiries as regards the fine examples of Verbenas from seed referred to previously, write: The seed was sown on or about January 15, in a temperature of 65° to 70°, in soil of a very light character. They were pricked off in February into 2½-in. pots, and kept in about the same temperature. When fully established they were taken to a pit, placed near the glass and kept aired. They were next potted singly into 2½-in. pots at the end of March, and then into 3-in. pots in the latter part of April, and planted out-of-doors, 2 ft. apart, about the middle of May. We have no doubt that good plants might have been obtained with much less trouble and attention than we gave to these.

**Eremurus himalaicus.**—This scarce and beautiful hardy Indian Asphodel, recently described in the THE GARDEN, has now ripened some 200 good seeds in my garden, which I shall be happy to distribute in half dozens as long as they last to any readers of THE GARDEN who think it worth their while to send me a stamped envelope addressed to themselves, and who do not mind waiting till the year 1886 or 1887 to see them bloom, as my seedlings did not acquire sufficient strength to bloom till either the fifth or sixth year from being sown. During the first two years the seedlings had better be kept in a pot till they strengthen sufficiently to be put into their blooming position in the open border, where they may then be left undisturbed, as they are perfectly hardy.—WILLIAM E. GUMBLETON, Belgrove, Queenstown, Ireland.

**Malmaison Carnation.**—I fancy the Malmaison Carnation you speak of as having been sold for such large sums at a bazaar must have been grown by General Mark Wood, of Bishop's Hall, near Romford. The growth of these plants has long been a specialité of his, and he has now a wonderful collection of this Carnation. They are so easily grown and so sweet in perfume and delicate in colour when in flower that I wonder they are not more generally grown. At Bishop's Hall they are grown in large pots in a cold lean-to house about 120 ft. long, and when all the plants are in flower (which they were about July 12 this year), it was a sight well worth seeing. I was a great friend of General Wood's old gardener, now, alas! no more, and many were the conversations we held as to the management of the Malmaison and the failures of those to whom he had given cuttings to cultivate it well. Should

you think it of sufficient interest I will gladly give particulars another time.—FILIPUS. [Pray do.]

**The Coral Plant** (*Erythrina laurifolia*).—This is a favourite plant of mine, and I am aware that it is not perfectly hardy. I am therefore anxious to gain information respecting it, having, in the winter before last, lost my plants through the severity of the frost, but as they were young plants, I am anxious to learn if old-established plants fared any better in other parts of the country. Three years ago I saw a beautiful specimen in the gardens at Henbury Hill, Westbury-on-Trym. I have also seen a good plant at Messrs. Kelway & Sons' Nursery, at Langport, both of which had stood out close to a wall for several years, but whether either of these plants have passed unharmed through the last two severe winters, I do not know. If they or any others have done so, I should not hesitate to plant it again, as I think the time has come when we may hope for a cycle of mild winters, which may give the plants an opportunity of becoming established before a return of hard winters.—J. C. B.

**Hyacinthus candicans** (*Galtonia*).—Seeing a reference made to this plant in THE GARDEN, some of which were exhibited growing in pots 3 ft. high to show their suitability for pot purposes, I would like to mention that I have quite a number of them in bloom in the conservatory here. They are in many cases fully 5 ft. high, with stems stout and strong, requiring no support. They are in 5-in. pots; a dozen or more flowers open at the base, and others opening and many more unexpanded, promising a long succession of bloom. I consider it quite a valuable addition to the conservatory, its Snow-drop-like bells drooping so gracefully, and the whole plant presenting so commanding an appearance, that they seldom fail to please all who see them. Although they lack the perfume of the Tuberose, they may lay claim to be a fit companion for that plant, if not a more effective one.—E. BARTON, Beech Hill, Cork.

**Ten-week Stocks for Cut Flowers.**—There are few more useful plants for supplying cut flowers during the summer months than the Ten-week Stock. We sowed a few packets of distinct colours under hand-lights in March. The plants were gradually hardened off by removing the tops on fine days, and at the end of April they were planted out in single lines between rows of double and single Primroses, for the purpose of giving shade to the crowns of the Primroses in scorching weather. They were both kept moist by watering, and the Stocks developed into fine branched heads, 90 per cent. being double, and really beautiful. The side branches are for furnishing vases, the clear whites and bright crimsons looking extremely well arranged separately, and the beautiful fragrance they emit in the garden makes them well worthy of culture for that purpose alone. As a border flower, or for mixed beds, I do not know of any flower more worthy of culture than these Stocks, for they commend themselves especially to those who have limited accommodation for tender plants under glass.—J. G., Linton.

**Carnations in Italy.**—On returning to England, and reading up back numbers of THE GARDEN, I find at p. 44, June 9, that a correspondent objecting to my suggestion that Carnations should be grown tumbling down a wall, quotes Milton in favour of the old system, and asserts that the poet describes Eve as tying up Carnations. May I ask him to read the passage again, when he will see that the word "Carnation" denotes a colour only, not the name of a flower; just as Shakespeare uses it in the mouth of Mrs. Quickly (Henry V., ii., 3): "A could never abide carnation; 'twas a colour he never liked;" and again, "How much carnation ribbon may a man buy for a remuneration?" ("Love's Labour Lost," iii., 1.) The passage referred to runs thus:—

Off stooping to support  
Each flower of slender stalk, whose head, though gay  
Carnation, purple, azure, or speck'd with gold,  
Hung drooping unsustained;—  
—"Paradise Lost," ix., 427.

In speaking of the beauty of Carnations when allowed to droop over a balcony, as commonly grown in Italy, the drooping referred chiefly to the habit of the plant, and did not mean that the flowers hung head downwards, as I think I understand your correspondent to infer. The flowers take care of themselves; their stalks hold them up as a swan's neck carries the head. May not this way of growing show the purpose of the many-jointed stems, both of leaves and flowers?—G. JEKYLL.

#### NOTES FROM THE READING NURSERY.

ANY gardener passing through the fine old county town of Reading and omitting to look in at the Messrs. Sutton and Sons' London Road Nursery would leave the place poorer in thought and information than he otherwise might, for here are to be seen so many good things, and with these not a few novelties, that it is indeed rare that there is not found something to repay a visit. I was fortunate enough to drop in just at the moment when the houses were all aglow with Gloxinias and Begonias, of which there are superb strains, and in the outside grounds were in bloom (many most effective) all sorts of hardy and tender annuals and myriads of other things. In catering for the horticultural public in these days of strong competition it is of the first importance for the reputation of any seed house that what seeds it may send out shall be not only of the best, but true. It is, therefore, as a test ground for seeds samples and stocks that the nursery ground is in the summer largely employed, and because of that use does it now present so many features of interest.

**Gloxinias.**—It is not exaggerating to say that a grander collection of these beautiful flowers cannot be seen anywhere than is now here in bloom. Several houses and pits are devoted to their culture, but two houses especially are quite full of plants in rich bloom, the entire lot in one house growing in 6-in. pots, and in the others all are in large 3-in. pots. The seed was sown in January last, and thus we find hundreds making large, literally luxurious plants, producing many huge blooms in six months—quite a marvel in plant culture. For, of course, fine as the strain is something is due to good culture, and to the grower all praise is given. Here is the cultural formula: Sow the seed in heat in January, the plants are up in February, pricked out into other pans in April, and according to size potted off in May and June. The house filled with the pottings in 3-in. pots is hardly less striking than the other one, and it is remarkable that here are seen plants producing from twelve to fourteen fine blooms expanded at once. This shows that the too common practice of growing Gloxinias in large pots is, if not a mistake, at least needless. A marked feature in this strain is that all the leaves droop or reflex, so that not so much space is occupied as with other kinds, and the pots get well covered. Even almost all the blooms are erect, and have good substance. Indeed, the flimsy speckled kinds are specially avoided, because the stout, leathery texture of the blooms should not be injured. Many flowers are exhibiting strongly-marked clear white throats of fine round form; some have speckled throats, others have the ground colour well down the tube. Indeed, for variety of colour and marking, for size, and for form and quality, the strain is a grand one, and cannot well be excelled.

**Begonias.**—We have here another marked race of decorative plants that are highly favoured at Reading. With these, as with other things, seed is the great object of culture. There are no big plants, for the firm's able hybridist wants all available space for the production of seedling plants, and is in the process of crossing and selection to secure the finest seed strains for ever at work. The houses devoted to Begonias are full of plants, the chief portions of which are raised from seed sown in January. They are mostly in 4½-in. pots, are from 6 in. to 9 in. in height, and blooming profusely. One of the most marked



results of a careful cross is seen in the number of dwarf compact-habited plants, the flowers of which are sent out, not from branches, but from the crown, and have nice long stalks that render them useful for gathering. The crowns of the plants literally swarm with buds, and the leafage is dense and compact. Sutton's Reading Beauty is a charming kind, the blooms opening primrose, and becoming a pale creamy white. It is of the Pearcei type, though there are many of the pale hued colours. Some are so deep as to rival our richest zonal Pelargoniums, and the petals are getting so stout and round as to make the resemblance greater. The pink, carmine, and vermilion-tinted flowers are peculiarly beautiful. A good perennial variety, Schmidt's, having small whitish flowers most profusely borne, and seemingly a perpetual bloomer, is a capital market kind, and one that should be in great request.

**Balsams.**—Though not yet at their best, the plants in the open air show their fine qualities. It is indeed strange that whilst many persons find it difficult to grow a good plant in a pot, that here from the open ground may be lifted scores of plants that in a week or two would make good pot specimens. There are crimson, purple, scarlet, carmine, white, and other selfs, others shaded, others spotted, and others flaked, and all beautiful. Some dwarf bushy plants are worthy of notice as suitable for windows, where if drawn they would not be tall, and for edging beds of the taller kinds.

**Verbenas.**—Here is a mass of Verbenas of many colours and markings, and all from seed sown in heat in the spring. These are grown and indeed sold in colours—scarlet, blue, white, carnation flaked, and other forms, and all come remarkably true. The scarlet is just a fine reproduction of the old scarlet Defiance, that prince of scarlet bedding plants of some years since, and the growth and quantity of bloom produced is marvellous. When Verbenas are so much grown in frames to get the blooms up for exhibition, it is most refreshing to find such a charming lot growing from seed and giving so little trouble. Of the bedding type of Lobelias there are sample plants of blue, white, and red forms, and of kinds compact and kinds that trail. The general results of the trials of the various kinds are excellent, but one of the most striking novelties is the compact habited, purplish-red-flowered kermesina, a very pleasing and effective kind.

**Petunias.**—These make a fine display, double and single, large and small, self-striped, and all colours. Fimbriata fl.-pl. is a large beautifully fringed flower of great substance; marginata is curious because of its green edge. There is one as blue as Clematis Jackmani; others are deep crimson; some finely striped, and many too peculiarly marked to describe at all. A very pretty and most useful kind is Sutton's Dwarf Striped, a compact-habited sort bearing in great profusion small round flowers that are deeply barred with red; this would make a good edging kind for beds of the taller sorts. Of the Phloxes, P. Drummondii is very beautiful and very showy. Some of these if planted thickly would make beautiful masses of most striking hues. Coccinea is really a rich deep crimson of fine habit; Leopoldi is a rich rosy-pink, and alba a fine clear white. Then of dwarfier kinds of the compacta section very charming indeed are Hortensiflora, rich rosy-pink, and Victoria, a brilliant reddish-crimson. There are many with diverse markings, and perhaps not less beautiful, but not so advanced.

**Hollyhocks.**—The show of these is most refreshing, and very noble and striking are they. The first impression made is that they are all named kinds, but such is not the case, for all are from seed, and, indeed, represent seed stocks as sold in colours. Here are pink, red, crimson, black, white, indeed, many hues, and the flowers fine, double, and effective. There is no evidence of fungus, fortunately, and it is not probable that there will be any found now. Such a fact should make us hopeful for the future of the Hollyhock, one of the grandest of hardy border flowers.

**Miscellaneous.**—Under this heading may be classed a brilliant lot of double Zinnias, the flowers of fine form and almost as big as Dahlias; a mass of border Carnations of many hues and markings, raised from seed and for seed, of which the present hot dry season should favour the production. These are all good double kinds, and though not florists' flowers, are quite as good in quality, and far better in strength and robustness. Large beds of the various double and single Dianthus testify to the value and usefulness of these for bedding and to furnish cut flowers. Then there is a very pretty dwarf compact Anagallis named Garibaldi, the flowers of which are pale scarlet and produced most freely. The Loasa hispida would make a good mass plant for big beds. It grows to a height of 20 in., and produces a large quantity of curious yellow flowers. The leaves of this kind appear to be stinging. Scyphanthus elegans is a useful plant for training over rockwork. The flowers are yellow, and the plants have a twining habit that shows some support is needful. There are, too, the new yellow-flowered Mignonette, really orange in colour, and also the Diamond, or white flowered, both novelties. Stocks are not yet well in, and Asters want more time, but these will make fine displays later on.

A. D.

## THE GARDEN FLORA.

### PLATE CXXCVI.—BOMAREA CALDASIANA.

It is only the most recently introduced species of this genus that are now cultivated, and ten years ago the only one known to me in the neighbourhood of London was the handsome subject of the accompanying plate, which was represented by a single specimen in the collection of the late Mr. Wilson Saunders. There is something peculiarly charming in the graceful habit of these twining Alstroemerias, as one may call them; the slender stems bear such elegant spirals of pretty bright green leaves, each one turned by its stalk, so as to bring the lower surface uppermost. This happens also in Alstroemeria, to which genus this has been united. For the convenience of garden botany these genera must be kept apart. Bomarea is climbing in habit and possesses other characteristic differences. The twining stems are really the branches of an underground creeping stem, and the former when of sufficient strength always terminate in an umbel of flowers. B. Caldasiana is well shown both in colour and form by the plate. It reaches a height of about 8 ft., and usually bears from a dozen to fifteen flowers on each umbel. The leaves are thin, ovate lanceolate, of a pale green tint, and, as in other species, the parallel veins are conspicuous. It is a native of Quitinian Andes. The name B. multiflora is given as a synonym.

B. Carderi is one of the finest. It reaches with good culture a height of about 12 ft. The umbels reach 2 ft. across, and may bear as many as forty flowers. They have been compared in form to Lapageria, and are 2½ in. long, with rose coloured outer segments; and although the inner segments are less showy, they are conspicuously ornamented with purple-brown spots. This was simultaneously introduced to Kew and Mr. Wm. Bull's establishment, Chelsea. At first it was known at Kew as B. Jacquesiana. It has fine golden fruits, which are often produced. A native of New Grenada.

B. oligantha is a handsome species, the introduction of which is due to Herr Max Leichtlin. The flowers are funnel-shaped, with reddish outer segments; the inner ones are yellow, with claret brown spots. One of the handsomest species ever introduced is

B. chontalensis, which came to Mr. Bull's establishment from New Grenada. It is now

unfortunately lost to cultivation. All the preceding with this exception may now be obtained.

**Culture and Position.**—The culture of this genus is not difficult. They may be raised from seeds or increased by division of the underground stem above referred to. Tuberous roots are formed like those of a Dahlia, but unable of themselves to form plants. They often live after the stems on which they grew are dead, but they are never worth keeping, as they have no more power of forming buds than the Dahlia has. In making a division it is necessary to observe that the part taken has some roots by which to live till new ones are formed. It should be potted at first and may, when established, be planted out or shifted on. Seeds may be raised in a warm house without difficulty, and those imported have grown well. They germinate in a few weeks, and when the young plants are 2 in. or 3 in. high, it is time to plant them three or five in a pot. It is unnecessary to divide them again, and after one shift they are ready for planting out, unless the position they are intended for requires still longer stems to reach the light. Plants may be grown on singly, but then it takes a longer time to make a specimen. A good compost is that in which so many plants are found to succeed whatever their natural soil may be, viz., a mixture of peat and loam, the former in sufficient quantity to preserve an open texture. But as soils vary so much in quality, the intelligent cultivator will use his own judgment. These are not peat plants, and that soil, as in many other cases, serves only a mechanical purpose. They are fast growers, and the soil should be rich. Manure water should be given during the season of growth. Fine specimens may be grown in pots if they have sufficient room without being overdone, but I much prefer planting out; it is a system by which much trouble is avoided, and it allows a more perfect development. Some houses are provided with store shelves, on which it is easy to keep a mass of soil together by means of a few stones, somewhat in the form of a rockwork. It must be remembered that flowers are produced in proportion to vigour. Loudon says that all plants of this genus will do very well out-of-doors in a warm, sheltered position during summer, but that in winter they require protection. I imagine that they would only succeed in favoured localities, and could not survive such winters as the two last. At any rate, they are so choice as to be worth growing in a greenhouse, and so far as I am aware they are always now cultivated under glass.

R. I. LYNCH.

### THE SHRUBBY CLERODENDRONS.

THOSE who only see large specimens of these plants at exhibitions may not know what beautiful objects they make when flowered in a small state raised from seeds or cuttings put in at the present time. Where large plants of C. fallax and C. Kämpferi exist and have flowered early, they will now bear good seed, which if sown at once in small pots and placed in a stove temperature will vegetate in two or three weeks. The seedlings should be kept in a growing heat through the autumn, moving them into 4-in. or 5-in. pots about the end of September; they ought to occupy a place on a shelf close to the glass during the winter, as here they will not get at all drawn. They will not in the dull season make much top growth, but they will keep on forming roots that will help them in the spring, when they should be moved into 8-in. or 10-in. pots. In these they will make pretty dwarf plants with large single panicles of their bright scarlet flowers.











Cuttings of these plants now put in a brisk heat, and placed when rooted in similar pots to those advised for the seedlings, treating them generally the same through the autumn and winter, will answer the same purpose. But the seedlings make the nicest plants the first season. The old *C. fragrans*, one of the most fragrant of all flowers, does equally well struck now from cuttings in the same way. Its double white flowers are most useful used singly for bouquets or button-holes.

T. B.

## THE INDOOR GARDEN.

### TODEA SUPERBA AS A ROOM PLANT.

THIS filmy Fern is not only the most beautiful of the Todeas, but one of the most elegant of all cultivated plants. This and other allied species owe their ability to thrive in rooms where the atmospheric conditions are not suited to plant-life to their need of always being kept closely confined under a glass covering of some kind, either an ordinary bell-glass or a tight-fitting Fern-case, a still damp atmosphere continually in contact with their delicate leaves being a necessity of their existence. Another merit they present is that they will succeed better in a room which has its windows facing the north than if they were in an opposite direction under the influence of the sun. In fact, these Todeas may be said to be completely sunless in their wants, only requiring a subdued and limited amount of light; beyond this they will bear without injury a temperature so low that would be fatal to most plants usually grown in pots. Several degrees of frost will do them no harm. In an instance that I am acquainted with a plant of this Todea was placed in a room such as I have mentioned facing northwards nearly two years ago, the pot in which it was growing was plunged in Moss in a large pan, and covered with a corresponding sized bell-glass; its largest fronds were then about 1 ft. long. During the summer it made about a score more fronds, many of which were over 18 in. in length. The plant has taken a handsome vase-like form, the fronds from their base for some length upwards assuming a partially erect position, and then arching over with their points down to the Moss in which it is plunged. This year the growth is both considerably stronger and larger; if stretched out horizontally the specimen would measure above 3 ft. 6 in. across. All the attention it has received has been to water the roots freely about every week or ten days whilst growth was in progress, but not wetting the top of the plant in the least. The syringing or sprinkling overhead which this Todea is often subjected to is generally most injurious, causing the fronds to become brown, very different in its effect to the moisture that arises within the glass and covers them with a complete garniture of condensed pearl-like globules. During the winter months it does not require water oftener than every three weeks or so. To those who can see beauty in a plant without flowers, it is not possible to have a more charming object in a room. It thrives better where there is not a fire regularly, and does not require any artificial heat unless there is more than 8° or 10° of frost, which is not likely to occur in many houses.

A. Z.

**New Crotons.**—At a recent meeting of the French Central Horticultural Society, Messrs. Chantrier exhibited two new hybrid varieties of Croton, named Baron Franck Sellière and late-maculatum. They are described as being of exceptional beauty, and were awarded first-class certificates.—J. C. B.

**Erica elegans.**—This old, and at one time highly valued Cape Heath, does not appear to be extensively grown at the present time. Although by no means of quick growth, it is of fairly easy culture, and can scarcely be classed with the "miffy" kinds—those that demand large practi-

cal experience and extremely close attention to bring them to anything like perfection. In appearance it is quite distinct from the rest of the family, the foliage being glaucous, and the flowers of a peculiar shape. This Heath is seldom propagated in trade establishments by means of cuttings, as it seeds freely, and the seedlings come true to character. The seed germinates well if sown as soon as ripe in sandy peat, placing the pan in a cool house or frame.—J. C. B.

**Old v. New Cyclamen Seed.**—I am not at all surprised that Mr. Grieve should receive my statement concerning the relative germinating power of old and new Cyclamen seed with something of incredulity. The facts are, however, as I have stated, and I leave the explanation to others. I have the best of reasons for knowing that no error crept into the sowing operations, as some 200 pots were sown, and quite four-fifths of them were occupied with the old seed, for my new seed was not all fully ripe at the time I wished to sow. I had no faith in the old seed, and simply used it for want of fresh. Taking pot for pot, I should say that not 5 per cent. of the old seed failed to germinate, a fact that gratified as much as it surprised me.—J. C.

## THE LIBRARY.

### MISS ORMEROD'S MANUAL OF INJURIOUS INSECTS.

WE have just received a very useful and interesting work on insects which injure our cultivated plants and trees, entitled "A Manual of Injurious Insects, with methods of prevention and remedy for their attacks to food crops, fruit trees, and fruit," by Miss E. A. Ormerod, editor of the annual reports on "Injurious Insects." This manual is of a handy size, well printed and illustrated, and supplies a want which has long existed for a work of this kind; hitherto there has been no book in the English language on this subject, except "Farm Insects," by the late Mr. John Curtis, and one by Kollar, a translation from the German, edited by Prof. Westwood, both of which are now and have been for some time out of print, to which gardeners or agriculturists, whether amateur or professional, could turn for information concerning the insect pests which destroy their plants or crops. This manual will be welcomed by every one interested in the cultivation of plants, as it contains the latest suggestions for destroying and preventing the attacks of various insects, with a description of each insect. It is well illustrated; the woodcuts vary considerably in merit, but as they have been obtained from various sources this is not to be wondered at, but all are sufficiently good for their purpose. After the usual preface and induction, Miss Ormerod gives a short and clearly written introduction to entomology, which will be found of great use by those unacquainted with the elements of that science. The body of the work is divided into three parts—food crops, forest trees, fruit crops, and the insects that injure them. From our point of view we can only wish that a fourth part had been added, namely, plants cultivated in flower gardens or under glass, and the insects which injure them. Many of the insects described are hurtful in flower gardens, and the means given for their destruction can in many cases be as easily applied to one kind of plant as another; still, as a rule the insects which destroy our flowers are ignored, which prevents this book of being of such general interest as it would otherwise have been. Under the heads already given the insects are arranged according to their food plants, which are placed alphabetically. This appears to be an inconvenient method; for instance, the wireworm is described, &c., under the head of Corn, and, again, as far as Hops are concerned, under Hops. Under this second head a paragraph on wire worms in Turnips (not alluded to under Turnips), and two paragraphs of general interest, not confined to any

plant in particular. Surely had all the information concerning wireworms been given together, any one wishing to refer to and study this insect could have done so much easier. It is a great pity that as the insects alluded to in this work are not placed according to their natural affinities, a properly classified list should not have been given, as it would have been of great convenience to the entomologist and others. Again, any one wishing to study the insects which injure his crops, &c., is placed at a disadvantage by some almost obsolete scientific names being used instead of those now usually employed, for though in a work of this kind the scientific names are perhaps of little value, as a large proportion of its readers will know little of the nomenclature of insects, still, as it may be hoped that many will be led to study this most interesting subject of economic entomology, it would be as well if they are to learn hard names that they should learn the right ones. It must be admitted, as Miss Ormerod says, that "the number of synonyms or scientific names used by different writers causes some difficulty;" but the difficulty would have been to a great extent surmounted if the nomenclature "in some standard work on each class of insects (say in "Butterflies and Moths," Mr. Stainton's well known manual) had been adopted, instead of giving the name used by the writer from whose work a quotation is made. The "prevention and remedies" given after the description of each insect have been carefully collected, and should be well studied by those interested, and those which are most likely to suit the soil and other circumstances tried. Some of the insects alluded to are very seldom injurious to our crops to any appreciable extent, such as the bumble bee, the Birch mite, and the Beet carrion beetle; and there are a few others which might have been with great propriety introduced. We have, however, every reason to be thankful to Miss Ormerod for her valuable contribution to economic entomology. A useful glossary and an index complete the work. In the former the following mistake at once attracts attention: Femur, plural femora, should be plural femora. The index requires revision; at present several names are omitted.

### Hints to Writers for the Press.

Write on single sheets of white paper, and on one side only, leaving a margin on left-hand side of about 1 in. A good sized paper for printers is 8 in. by 7 in., or 8 in. by 5 in.; any size near these will do. It is a common error to suppose that printers can easily read bad writing; it is, on the contrary, a source of loss to the printers, annoyance to everybody connected with a journal, and is often the cause of communications being rejected. All proper names of persons, places, and, above all, botanical or technical names should be written perfectly clearly. All writing for the press should be more clearly written than for private correspondence, as manuscript has to be read not only by the editor, but by the compositor, the reader, the reading boy, perhaps more than once, and referred to; therefore, bad writing is not an infliction on one person only, but on several. Never run the pen on from one word to another. Mark each sentence clearly with a full point or stop. Finish the article or note as you desire it, without leaving corrections till you see it in type, as this leads to much needless cost and loss of time. Write your name and address on the top left-hand corner of the first page, and number all subsequent pages. Put a heading to each communication. Express your ideas in the shortest way consistent with clearness. State facts. Eschew preface. Plunge at once into your subject. Condense.

**Sida malvæflora.**—As sent by Mr. Betteridge, what is this plant? I have grown a plant for years under the above name, a pretty but not absolutely handsome malvaceous herbaceous plant. But a few weeks ago it was described as coming from Mr. Gumbleton as a shrub. I believe the above plant is now known as *Sidalcea*, *Sidalcea californica* is a truly handsome herbaceous plant.—THOS. WILLIAMS.



## RAINFALL OF THE BRITISH ISLES.\*

THE following tabular matter shows the distribution of the rainfall of the last decade, during which we have nearly four hundred perfect sets of observations. As each set of observations comprises more than a thousand entries, and the following table contains the result of nearly half a million observations, it is probable that it contains some slight percentage of error, but we have no suspicion of the existence of any which appreciably affect the results.

Mean rainfall at 325 stations during the ten years 1860-69.

County.	Station.	Height of Rain-gauge.		Mean Annual Rainfall, 1860-69.
		Above ground.	Above sea.	
		ft. in.	feet.	inches.
DIVISION I.				
Middlesex	Camden Town	0 6	100	25.681
DIVISION II.				
Surrey	Weybridge Heath	0 6	150	25.451
"	Croydon (Tanfield Lodge)	0 8	155	26.333
"	" (Waldronhurst)	35 0	237	24.388
"	Wimbledon	3 0	160	23.476
"	Kew Observatory	1 3	19	23.282
Kent	Hythe (Horton Park)	1 4	350	32.677
"	Tunbridge	1 0	71	28.258
"	Maidstone (Linton Park)	0 6	296	27.559
"	" (Hunton Court)	0 6	80	25.998
Sussex	West Thorney (Emsworth)	0 8	10	26.875
"	Chichester Museum	0 6	50	29.026
"	" (Shopwyke)	1 2	61	29.194
"	" (West Dean)	1 6	250	37.082
"	" (Chilgrove)	0 6	284	33.224
"	Arundel (Dale Park)	3 5	316	33.732
"	Hastings (High Wickham)	2 0	212	26.373
"	Maresfield Rectory	1 3	250	32.190
"	" (Forest Lodge)	1 2	259	31.479
Hampshire	Isle of Wight (Osborne)	0 8	172	30.725
"	Farcham (North Brook)	0 2	26?	33.006
"	Petersfield (Liss)	0 7	400	38.033
"	Selborne (The Wakes)	4 0	34.427	27.036
Berkshire	Aldershot	3 0	325	27.036
"	Reading (Englefield)	1 0	190	25.726
"	Long Wittenham	1 0	170	27.379
DIVISION III.				
Herts	Bayfordbury	0 4	270	25.011
"	St. Albans (Gorhambury)	2 9	27.849	26.388
"	Hemel Hempstead (Nash Mills)	3 0	250	27.594
"	Tring (Cowroast)	4 2	395	23.922
"	Hitchin	1 4	238	23.509
"	Royston	0 6	266	25.705
Bucks	High Wycomb	0 9	225	26.129
Oxford	Radcliffe Observatory	0 8	207	26.222
"	Banbury (High Street)	7 0	350	23.349
Northampton	Althorp House	3 4	310	24.092
"	Wellingborough	0 3	170	23.132
Hunts	Kimbolton (Hamerton)	5 4	106	22.487
Bedford	Cardington	0 0	109	21.760
"	"	3 6	142	18.170
Cambridge	Ely (Stretham)	36 0	142	20.609
"	Wisbeach (Harecroft House)	4 9	11	24.037
DIVISION IV.				
Essex	Epping	6 0	360	24.132
"	Witham (Dorward Hall)	1 6	20?	20.466
"	Dunmow	0 0	234	22.750
"	Braintree (Bocking)	3 6	260	23.984
"	Saffron Walden (Ashdon)	1 0	300	23.056
Suffolk	Hadleigh (Aldham)	2 6	25.469	23.962
"	Bury St. Edmunds (Abbeygate)	35 0	240?	23.522
"	" (Westley)	1 0	216?	23.680
"	" (Barton Hall)	1 0	145?	24.835
"	" (Culford)	1 2	84?	22.223
Norfolk	Diss (Dickleburgh)	3 6	120	22.637
"	Downham Market (Outwell)	4 0	16	23.139
"	" (Fitcham)	4 0	100	22.169
"	Norwich Institution	30 0	53	24.035
"	" (Cossey)	1 0	88	23.975
"	" (Honingham Hall)	0 6	150	25.097
"	Fakenham (Egmere)	4 8	39	23.875
"	Holkham	0 0	43	23.232
"	Hunstanton	4 0	60	19.559
DIVISION V.				
Wiltshire	Baverstock	3 0	300	30.247
"	Salisbury Plain (Chiltern House)	4 0	380?	29.279
"	Swindon (Penhill)	0 10	60	28.592
Dorset	Bridport	0 8	60	32.248
Devon	Plymouth (Salttram)	0 3	96	44.813
"	" (Ham)	3 0	94	42.888
"	Plympton St. Mary (Ridgeaway)	0 6	116	48.646
"	Tavistock (Library)	20 0	283	43.356
"	" (West Street)	4 6	266	53.170
"	Bovey Tracey	0 6	92	43.126
"	Coryton Lew Down	6 0	445	45.941
"	Exeter Institution	13 7	155	31.757

## RAINFALL OF THE BRITISH ISLES.—Continued.

County.	Station.	Height of Rain-gauge.		Mean Annual Rainfall, 1860-69.
		Above ground.	Above sea.	
		ft. in.	feet.	inches.
DIVISION V. (Continued.)				
Devon	Cullompton (Clyst Hydon)	1 0	260	32.694
"	" (Bradninch)	1 6	234	35.000
"	Honiton (Broadhembury)	1 6	400	34.562
"	South Molton (Castle Hill)	3 5	200	47.118
Corwall	Barnstaple	0 6	43	39.905
"	Helstone	5 0	116	37.872
"	Penzance	3 0	94	41.507
"	Redruth (Tehidy Park)	0 6	160	41.220
"	Truro (Royal Institution)	10 0	56	42.877
"	" (Penarth)	1 0	190	42.556
"	Bodmin (Castle Street)	2 6	338	47.708
"	" (Warleggan)	2 6	559	54.557
Somerset	Wadebridge (Treharrock House)	2 9	303	39.301
"	Langport (Long Sutton)	0 10	50	28.574
"	East Harptree (Sherborne Res.)	1 0	338	42.097
DIVISION VI.				
Gloucester	Bristol (Small Street)	25 0	40	30.549
"	" (Phil. Inst.)	16 0	192	34.085
"	Clifton (South Parade)	0 10	50	27.121
"	Gloucester (Queaddeley)	0 6	42	32.612
"	Cirencester (Further Barton)	1 2	250?	28.311
Hereford	Ross (Archenfield)	1 0	159	33.591
"	" (Rocklands)	1 0	250	27.105
Shropshire	Leominster (West Lodge)	0 11	100?	26.744
"	Burford (Tenbury)	0 4	1000?	28.530
"	Ludlow (Knowbury)	3 5	355	24.870
"	Shifnal (Haughton Hall)	4 4	192	19.499
"	Shrewsbury	6 0	470	35.647
Worcester	Oswestry (Hengoed)	1 6	137	28.017
"	Northwick Park	1 0	200?	30.900
Warwick	Worcester (Lark Hill)	0 9	30.562	25.165
Birmingham (Edgbaston)	Tenbury (Orleton)	1 3	510	25.611
DIVISION VII.				
Leicestershire	Wigston	0 6	220	24.319
"	Thornton Reservoir	2 8	420	24.476
"	Waltham Rectory	1 0	560	22.407
Lincoln	Belvoir Castle	1 0	237	20.870
"	Grantham	0 6	179	23.429
"	Lincoln	3 6	26	21.659
"	Market Rasen	3 6	100	21.347
"	Gainsborough	3 6	76	24.113
"	Stockwith	3 6	21	21.391
"	Brigg	3 6	16	22.163
"	Grimsby	15 0	42	24.927
"	Barnetby	3 6	51	22.065
"	Brigg (Appleby Vic.)	0 9	60	20.344
Nottingham	New Holland	3 6	18	24.636
"	Southwell	1 0	200?	22.469
"	Welbeck Abbey	4 0	80	22.743
"	Workshop	3 6	127	26.807
Derby	Retford	3 6	52	26.930
"	Derby	6 0	180	24.591
"	Chesterfield	3 6	248	49.020
"	Kilmarsh (Norwood)	3 6	238	50.008
"	Combs Moss	3 6	1669	41.947
"	Reservoir	3 6	710	52.188
"	Chapel-en-le-Frith	3 6	965	
"	Woodhead	3 6	873	
DIVISION VIII.				
Cheshire	Bosley Minns	3 6	1210	32.043
"	Reservoir	3 6	590	34.536
"	Macclesfield	3 6	539	36.746
"	" (Park Green)	2 1	450	43.894
"	Bollington (Spond's Hill)	3 6	1279	34.810
"	Whaley	3 6	602	35.254
"	Marple Aqueduct	3 6	321	33.979
"	" Top Lock	3 6	543	37.732
"	Godley Reservoir	3 6	399	31.683
"	Mottram (Matley's Field)	3 6	396	37.232
"	Newton	3 6	396	46.323
"	Arnfield Reservoir	1 0	520	51.828
"	Rhodes Wood Reservoir	0 10	680	32.974
Lancashire	Woodhead	0 10	680	33.712
"	Denton	3 6	324	34.727
"	Gorton	3 6	263	32.597
"	Manchester (Old Trafford)	2 7	106	36.775
"	" (Ardwick)	3 0	154?	40.898
"	" (Piccadilly)	40 0	194	36.133
"	Fairfield	6 0	312	37.123
"	Oldham (Waterhouses)	3 6	345	36.007
"	" (Gas-works)	6 0	600	48.081
"	" (Strines Dale)	6 0	800	56.610
"	Bolton (The Folds)	3 6	283	44.210
"	" (Belmont)	0 0	500	44.132
"	" (Heaton)	1 6	900	34.909
"	Rochdale (Nagden Dale)	0 8	38	38.303
"	Ormskirk (Rufford)	0 6	73	32.994
"	Preston (Howick)	1 8	29	48.560
"	Blackpool (South shore)	0 8	376	44.786
"	Stonyhurst	1 6	464	43.944
"	Clitheroe (Downham Hall)	1 6	120	45.625
"	Lancaster (Caton)	1 6	120	
"	Cartmel (Holker)	4 8	155	

\* From the Report of the British Association for the Advancement of Science.



## RAINFALL OF THE BRITISH ISLES.—Continued.

County.	Station.	Height of Rain-gauge.		Mean Annual Rainfall, 1860--69.
		Above ground.	Above sea.	
		ft. in.	feet.	inches.
DIVISION IX.				
Yorkshire, W. R.	Sheffield (Broomhall Park)	2 0	340	31-276
"	Redmires	4 0	1100	39-684
"	Sheffield Station	3 6	188	28-159
"	Tickhill	2 0	61	23-990
"	Dunford Bridge	3 6	954	56-177
"	Saddleworth Station	5 0	640	41-968
"	Standedge	2 0	1150	53-700
"	Huddersfield (Longwood)	4 6	650	34-008
"	" (Rastrick)	1 3	410	32-121
"	Halifax (Warley Moor)	"	1425	46-330
"	" (Well Head)	0 11	487	33-313
"	" (Midgeley Moor)	"	1350	50-000
"	" (Ovenden Moor)	"	1375	46-090
"	Leeds (Leventhorpe Hall)	2 0	90	23-261
"	" (Holbeck)	32 0	127	22-853
"	York (Bootham)	0 6	50	24-479
"	Settle	40 0	498	41-349
"	Arncliffe	2 9	750	60-075
"	Hull (Beverley Road)	3 10	11	25-024
"	Malton	1 0	75	27-455
"	Richmond (Aske)	2 8	550	31-105
DIVISION X.				
Durham	Bishopwearmouth	"	"	20-247
Northumberland	Allenheads	0 9	1369	51-160
"	Shotley Hall	0 3	312	28-494
"	Bywell	0 6	87	28-874
"	Wylam Hall	0 4	96	26-900
"	North Shields (Wallsend)	0 6	100	26-640
"	" (Rosella Place)	1 0	124	26-065
"	Stamfordham	1 0	400	27-637
"	Hexham (Parkend)	0 4	276	33-550
"	Lilburn Tower	6 0	300	28-657
Cumberland	Seathwaite	1 0	422	154-046
"	Ullswater (Watermillock)	3 6	720	59-910
"	Bassenthwaite (Mirehouse)	0 7	310	53-756
"	Cockermouth (Whinfell Hall)	2 0	265	57-366
"	Carlisle (Bunker's Hill)	6 0	184	27-616
Westmoreland	Kendal (Kent Terrace)	4 6	146	53-322
"	Windermere (The Howc)	1 2	470	87-923
"	Appleby	1 0	442	35-094

## WALES AND THE ISLANDS.

## DIVISION XI.

Glamorgan	Cardiff (Ely)	3 0	45	42-016
Cardigan	Lampeter	4 6	420	45-183
Brecknock	Hay (Pen-y-Maes)	1 0	317	31-680
Radnor	Rhayader (Cefnfaes)	2 0	880	44-980
Flint	Hawarden (Chester)	0 7	270	26-443
"	Holywell (Maes-y-dre)	5 0	400	24-430
Denbigh	Llandudno (Warwick House)	0 6	99	31-004
Isle of Man	Point of Ayre	3 4	27?	30-600
Guernsey	"	12 0	204	37-477
Alderney	Harbour Works	10 0	48	28-624

## SCOTLAND.

## DIVISION XII.

Wigton	Mull of Galloway	"	"	27-656
"	Stranraer (South Cairn)	1 4	209	49-603
"	Corsewall	"	"	37-927
Kirkcudbright	Little Ross	3 3	130?	26-981
"	Cargen (Dumfries)	0 4	80	44-372
Dumfries	Dumfries (March Hill Cottage)	0 5	70	37-045
"	Westerkirk (Charlesgill)	"	"	60-092
"	Wanlockhead	0 4	1330	66-628
Roxburgh	Kelso (Springwood Park)	1 0	130	24-663

## DIVISION XIII.

Selkirk	Bowhill	11 0	537	33-033
Peebles	Penicuik (N. Esk Reservoir)	0 6	1150	38-014
Berwick	Lauder (Thirlestane Castle)	0 3	558	29-977
"	Dunse (Mungo's Walls)	0 6	267	28-494
Haddington	Prestonkirk (Smeaton)	13 0	100	23-263
"	Haddington (Millfield)	4 0	140	25-630
"	East Linton	0 3	90	23-767
Edinburgh	Cobbinshaw Reservoir	0 7	863	37-450
"	Inveresk	2 0	90	29-016

## DIVISION XIV.

Lanark	Hamilton (Auchinraith)	4 9	150	31-951
"	" (Bothwell Castle)	18 0	146	28-885
"	Glasgow (Cessnock Park)	4 4	29	37-958
"	" (Observatory)	0 1	180	44-411
"	Baillieston	0 3	230	46-471
"	Shotts (Hillend House)	7 0	620	33-445
Ayr	Ayr (Auchendrane House)	2 3	96	44-825
"	Largs (Mansfield)	0 6	30	48-920
Renfrew	Gorbals, W.W. (Ryat Lynn)	0 5	310	47-801
"	" (Wauk Glen)	0 5	280	49-845
"	" (Middleton)	0 5	550	56-682
"	Mearns (Nether Place)	0 6	360	50-143
"	Greenock (Hamilton Street)	0 6	50	66-156

## RAINFALL OF THE BRITISH ISLES.—Continued.

County.	Station.	Height of Rain-gauge.		Mean Annual Rainfall, 1860--69.
		Above ground.	Above sea.	
		ft. in.	feet.	inches.
DIVISION XV.				
Dumbarton	Loch Long (Arddaroch)	0 10	80	78-321
Stirling	Falkirk (Kerse)	1 0	"	32-960
"	Stirling (Polmaise Gardens)	0 2	12	41-300
Bute	Pladda	3 3	55	40-141
Argyll	Castle Toward	4 0	65	54-554
"	Lochgilphead (Callton Mòr)	4 6	"	54-253
"	Inverary Castle	0 1	30	67-370
"	Appin (Airds)	0 3	15	63-640
"	Ardnamurchan	3 6	82?	45-594
"	Cantire, Mull of	"	279?	44-166
"	Campbeltown (Devnar)	3 4	75?	47-312
"	Rhinn of Islay	3 0	74?	33-434
"	Lismore (Mousdale)	3 4	37?	46-215
"	Mull, Sound of	0 6	12?	72-159
"	Tyree (Hynish)	"	"	70-092
DIVISION XVI.				
Kinross	Lochleven Sluice	0 10	"	35-780
Fife	Balfour	0 6	127	28-589
"	Leven (Nookton)	0 6	80	28-988
"	Isle of May	2 2	182	20-482
Perth	Aberfoyle	0 6	60	61-820
"	Dunblane (Kippencross)	0 4	100	36-165
"	Deanston House	0 4	130	43-991
"	Lanrick Castle	0 0	"	48-805
"	Bridge of Turk	0 6	270	61-890
"	Auchterarder House	2 3	162	34-315
"	" (Trinity Gask)	0 1	133	35-324
"	Loch Earnhead (Stronvar)	"	"	82-434
"	Perth Academy	64 5	83	23-584
"	Scone Palace	2 6	80	29-182
Forfar	Barry	0 3	35	29-729
"	Craighton	0 3	481	34-876
"	Kettins	1 0	218	35-172
"	Hill Head	0 3	570	35-187
"	Arbroath	2 0	60	29-050
DIVISION XVII.				
Kincardine	Brechin (The Burn)	0 6	235	34-910
"	Girdleness	4 7	86	22-718
Aberdeen	Braemar	1 0	1114	33-404
"	Aberdeen (Rose Street)	1 4	95	29-433
"	Alford (Castle Newe)	"	"	33-500
"	Kinnaird Head	3 4	64	24-168
"	Buchanness	"	"	25-588
Banff	Gordon Castle	1 6	60	29-192
DIVISION XVIII.				
Ross and Cromarty	Isle of Lewis (Stornoway)	3 4	31?	31-792
"	" (Bernera)	0 6	15	65-027
"	Cromarty	3 4	28	25-941
Inverness	Isle of Skye (Oronsay)	0 6	15?	72-359
"	" (Kyleakin)	0 2	3?	82-067
"	" (Raasay)	1 4	80	77-120
"	" (Portree)	1 8	80	104-261
"	Barrhead	3 0	640?	31-726
"	S. Uist (Ushenish)	0 4	157?	43-905
"	Harris (Highland Glass)	3 4	50	31-129
"	Rona	0 6	20	39-470
"	Culloden House	3 0	104	27-084
DIVISION XIX.				
Sutherland	Golspie (Dunrobin Castle)	0 3	6	27-692
"	Cape Wrath	3 6	355?	39-371
Caithness	Wick (Nosshead)	3 4	127?	24-699
"	Dunnethead	3 6	300?	25-401
"	Pentland Skerries	3 3	72?	28-763
Orkney	Hoy (Graemsay East)	3 4	27?	39-007
"	" (West)	"	37?	32-693
"	Shapinsay (Balfour Castle)	0 6	50	32-408
"	Pomona (Sandwich)	2 0	78	38-853
"	Sanda (Start Point)	0 6	29?	31-371
"	North Ronaldshay	3 4	21?	31-015
Shetland	Sumburghead	3 4	265?	26-454
"	Bressay Lighthouse	0 4	60	36-488
IRELAND.				
DIVISION XX.				
Cork	Cork (Royal Institution)	50 0	70	34-771
"	Fermoy	"	"	37-207
Waterford	Waterford (Newtown)	4 0	60	40-660
Clare	Killaloe	5 0	123	47-654
DIVISION XXI.				
Queen's County	Portarlinton	1 2	240	36-857
King's County	Tullamore	3 0	235	27-938
Wicklow	Bray (Fassaroe)	5 0	250	41-822
Dublin	Black Rock (Rockville)	29 0	90	27-096
DIVISION XXII.				
Fermanagh	Enniskillen (Florence Court)	11 0	300	44-363
Armagh	Armagh Observatory	1 5	208	32-014
Antrim	Belfast (Queen's College)	7 4	68	34-225
"	" (Linen Hall)	4 0	12	36-767



## MR. PETER HENDERSON.

ADMITTED to be among the first of practical gardeners whose practice bears the test of results, Mr. Henderson is no mystery-monger. He does not hide his light; he, on the contrary, lets it show others the right road. We are often pleased with bits of his writing, always clear. The only thing of his we do not care for is a wonderful illustration of a flower garden which lately appeared in one of the American illustrated magazines. In this some very remarkable carpet beds, something that looks like a pillar post-office or a hen-house, a flock of geese, and sundry other things, are all mixed up together in one scene that is bad beyond belief. However, it may have been the artist, and we forgive the author. In a recent *Rural New Yorker* we find the following suggestive portions of an essay read by Mr. Henderson at the meeting of the association of American nurserymen at Dayton, Ohio, in June. The reader will bear in mind the severe winter climate of America, which necessitates practices unknown here.

Mr. Henderson is inclined to believe that, whatever kind of horticultural product is grown, whether fruit, flowers, or vegetables, he that is nearest the market, other things being equal, has a decided advantage; so much so, that in most cases a man had better pay £10 or £15 per acre rent, if within one or two miles from the market of a large city, than to get land ten or twelve miles away for nothing.

The past season Mr. Henderson's firm raised nearly half a million of Cabbage and Lettuce plants, which they sold at £1 per 1000. They sowed the seed the first week in February on one of their greenhouse benches, so thick that they stood twenty plants to the square in.; these they began to thin out, to prick in hotbeds, just as the first rough leaf appeared, placing 1000 plants in a 3x6 sash. The handling of that quantity was a big job, but Mr. Henderson doubts if one plant in a thousand failed, owing, he thinks, to a plan used in preparing the bed on the greenhouse bench for the seeds—a plan that is well worthy of imitation in preparing a bed for seeds that have to be transplanted, of any kind, whether outside or under glass. He used only 2 in. in depth of the soil for the seed bed, which was made up as follows: the first layer, of about 1 inch, was a good friable loam, run through a  $\frac{1}{2}$ -in. sieve. This was patted down with a spade and made perfectly level and moderately firm. On this was spread about  $\frac{1}{4}$  in. of Sphagnum (Moss from the swamps), which had been dried and run through a sieve nearly as fine as mosquito wire, so that it was of the condition of fine sawdust. On the top of the Moss the ordinary soil was again strewn to a depth of about  $\frac{1}{4}$  in. This being levelled, the seed was sown very thickly, and then pressed into the soil with a smooth board. On this the fine Moss was again sifted, thick enough to cover the seed only. The bed was then freely watered with a fine rose, and in a week every seed that had life in it was a plant. When the seed of most plants germinate, where they are quickly sown, the stem strikes down into the soil, the roots forming a tap-root with few fibres, unless arrested by something.

Here comes the value of the one-fourth of an inch of sifted Moss, placed three-quarters of an inch from the top. As soon as the rootlets touch the Moss they ramify in all directions, so that when a bunch of seedlings is lifted up and pulled apart, there is a mass of rootlets, to which the Moss more or less adheres, attached to each. To the practical gardener, the advantage of this is obvious; the tiny seedling has at once a mass of rootlets ready to work, which strike into the soil at once. The advantage of the Moss covering of the seed is not so apparent in the matter

of a free germinating seed, such as Cabbage, as in many others, but in many families of plants it is of the greatest value. For example, Mr. Henderson, last November, took two lots of 10,000 seeds of *Centaurea candidissima*; both were sown on the same day, and exactly in the same manner, in boxes of soil 2 in. deep, but the one lot was covered with the sifted Moss and the other with fine soil. From the Moss-covered lot were got over 9000 fine plants, while from that covered by soil there were only about 3000. The same results were shown in a large lot of seeds of the now famous climbing plant *Ampelopsis Veitchii*, and in the finer varieties of *Clematis*. The reason is plain: the thin layer of sifted Moss never bakes or hardens, holding just the right degree of moisture, and has less tendency to generate damp or fungus than any other known substance.

Quite a number of our market gardeners are now getting to grow Strawberries in conjunction with their vegetable crops, by following the pot layering system, by which a crop is obtained in less than a year from the time of planting. Mr. Henderson has grown for the past six or seven years upwards of an acre of Strawberries in this manner, alternating them with the vegetables. The process may be described as follows: Just as soon as the fruit is gathered the beds are well forked up, and the runners begin to grow rapidly, so that in the vicinity of New York strong pot layers may be obtained by the 10th to the 15th of July. These, if then planted out, never fail (if properly cultivated and the runners pinched off) to give a full crop by June next year; not only a full crop, but finer fruit than is usually obtained by the other methods. The pots, which should not exceed  $2\frac{1}{2}$  in. in diameter, are filled with the soil in which the Strawberries are growing, and plunged or sunk to the level of the surface; the Strawberry layer is then laid on the pot, being held in its place with a small stone; the stone not only serves to keep the plant in its place, so that its roots will strike into the soil of the pot, but it also serves to mark where the pot is; for, being sunk to the level of the surface, rains wash the soil around the pots, so that they could not well be seen unless marked by the stone. Any good workman, after a little experience, will layer 2000 per day. In ten or twelve days after the Strawberry layers have been put down, the pots will be filled with roots; they are then cut from the parent plant, taken up, and placed close together, and shaded and watered for a few days before being planted out. If so treated, not one plant in a thousand need fail.

In Mr. Henderson's market gardening and greenhouse operations he cultivates largely nearly every known family of plants, and in his long experience he has yet to see a fruit, flower, or vegetable crop that was not benefitted, and nearly in the same degree, by a judicious application of pure bone dust.

**Latin Plant Names.**—Why should "Botanicomastix" wish gardeners to give up one error and adopt another? *Gladiolus* is just as wrong as *Gladiolus*. When I was at school many years ago the word was *Gladiolus*. —H.

—Is not your correspondent "Botanicomastix" rather hard on us gardeners? In the concluding paragraph of his article (p. 90) he uses the following words: "As for getting my friends the gardeners to give up speaking of the *Gladiolus* when they mean the *Gladiolus*, I simply despair of it." I think gardeners are free from any blame in the matter. Only show us which is right by giving us a competent authority whose judgment is not to be questioned, and I

think we shall be all willing to follow him.—L'OMPADOUR.

## THE GARDEN IN THE HOUSE.

## BOUQUET OF COMMON FLOWERS.

AN effective bouquet is on my table, arranged in a trumpet-shaped vase almost 18 in. high which contains five fronds of *Lastrea dilatata*, five barren fronds of *Blechnum boreale*, two of *Polystichum angulare*, a spray of *Manetti*, and a small shoot of Oak, three clusters of a pale lemon-coloured Rose, probably *La Reine des Pays Bas*, three trusses of *Geranium*, viz., *Rebecca*, *Vesuvius*, and *Jewel*, five sprays of *Eschscholtzia* of various shades of yellow, one spike of blue *Delphinium*, three or four sprays of *Maurandya* and *Tropæolum canariense* hung down loosely, and a few pieces of grass give additional lightness. This bouquet would be quite unworthy of record, but it is arranged on principles which almost ensure success, and yet seem to be frequently neglected. First, there is a large proportion of green of various forms and shades. Secondly, a few colours only are introduced. Thirdly, both flowers and foliage having long stalks are easily arranged in a loose and graceful group, and both the Roses and *Eschscholtzia* have several buds and half expanded flowers. The colours are of course a matter of taste and can be infinitely varied. Such a bouquet can be arranged in almost a quarter of an hour, and common Ferns are to be had almost everywhere in the country. Young shoots of Mountain Ash and Larch are very useful, and Carrot leaves are within the reach of every one. Very tender Fern fronds will often wither but well ripened ones will last for weeks, and old fronds of the well known Hare's-foot Fern can be kept fresh for more than two months. Having tried innumerable experiments in bouquet making I have come to the conclusion that abundance and variety of foliage is the first point, and the flowers are a secondary consideration. G. E. M.

**A Remarkable Gloxinia.**—I was shown the other day what I cannot but regard as a remarkable *Gloxinia*. The plant when in bloom and fresh from a hot-house came last summer into the possession of its present owner. It was placed in a south room window, where it flowered freely, and kept its foliage well till the autumn, when it died away. Having been advised to keep the root dry and as warm as possible through the winter, the pot was placed on the top of a cupboard in the kitchen, where it remained until May, when it was found that a shoot had pushed up from the tuber. It was then placed in the kitchen window, and received tepid water from time to time till leaves were well developed, when it was removed to its old position in the south sitting-room window, where there was no fire. It has continued to thrive so well that it has now several fine stout leaves, and is showing flower buds; indeed, by the time this is in print it will no doubt have expanded blooms. Though a trivial incident, it cannot be without interest to amateur gardeners who, having perchance *Gloxinias*, may not know how they may be preserved, and make beautiful plants the second year. I have seen *Cyclamens* kept only in a room window carefully tended and blooming well regularly for several years.—A. D.

**The Progress of Gardening.**—Mr. J. Thorpe, writing to us from Queens, New York, speaks enthusiastically of the progress gardening is making in America. In a few years he says America will be ahead of Europe. The Roses at a late show at Boston were equal to a second class show in England, he thinks. In so severe a win-



ter climate that no doubt is high praise. Mr. Thorpe says an immense change for the better has taken place within the past ten years.

### GARDEN LABELS.

I AM sorry to note that the competition for Mr. Wilson's prize has not brought out some plan worthy of distinction. A good plant label is an everyday want, and there is at present no really good one. I have often brought this subject forward in THE GARDEN, having studied it experimentally for some years. The plan we now follow here comes so near to that recommended in the concluding paragraphs of the report of the committee (p. 126), that I send you the following particulars which will enable any one to adopt it.

Firstly, we get a large number of the imported garden pegs, which we find to have a good surface for writing upon—say, 1000 8-in., 1000 6-in., and 2000 5-in. These are first soaked in a solution of 12 lb. or so of green vitriol or sulphate of iron, which is a very cheap article, not costing above 2d. per lb. We dissolve it in boiling water, about a stable bucketful. This is then poured in a tub, and about 1000 pegs are placed in it, with a couple of bricks at top to keep them down, and they are allowed to saturate thoroughly for three days. They are then taken out and spread on a floor to dry, and another batch put in saturation. When all the pegs are pickled we use up the liquor with our plant sticks, Dahlia sticks, &c.

The pegs are next saturated in lime water, a strong solution being placed in the tub, and all the pegs allowed to soak in it for three days, and then dried as before. When all are passed through this, they are of a rusty brown colour, and have an almost metallic ring about them, and if cut across it is found that the salts of lime and iron have filled every pore. I think this idea was obtained from a recipe given some time ago in THE GARDEN for preserving wood from rot, and we thus adopted it for garden pegs. I think it will be perfectly successful, and if so, we have here a very simple process for carrying out the first recommendation of the committee. The next point was the colouring of the surface, as the pegs were now of a rusty brown. Attracted by the colour of the pegs sent out by Messrs. Haage & Schmidt, of Erfurt, which were of a very bright yellow, clean looking, and exceedingly legible, I wrote to those gentlemen for information, who very kindly replied that they used pure chrome yellow, mixed with oil and a little varnish.

I find this a most excellent paint, and very easily obtained and managed. A few ounces of pure chrome yellow, which is a flaky powder, can be kept in a stoppered bottle, and the mixture of boiled Linseed oil and varnish in another bottle. A painter's palette knife and a small slab of marble or slate, or, better still, a painter's palette, will complete the apparatus with which the materials can be mixed together in small quantities as required. Our practice is to mix a small quantity about once a week, keeping it in a small jelly jar, covered with water when not being used. We mix it thick, taking a little on the pallet and adding a little turpentine when required. It is best applied to the pegs with a piece of thick woollen cloth, which rubs it well into the grain and leaves a smooth even surface for writing upon. A brush leaves the paint thick and streaky, and is much more difficult to keep clean and ready for use.

A few dozen pegs can be prepared in a very short time, and if carried about in a small flower-pot, or, better still, in a covered box, they will keep in fit condition for writing upon for several hours, or you may carry them about in your

garden coat pockets without detriment. The best pencil for clear, legible, black writing is a thick pencil, which is sold retail for 4d. (marked No. 53, B. S. Cohen's pencil). The black core is about 1-8th in. thick, and it makes a strong black letter. One such pencil will last for a whole season.

These yellow pegs are less obtrusive in the borders than the white ones, and the yellow pigment is much more readily mixed and applied than white paint. They look as well in a year as they did when first painted, and I see no signs of decay in the wood after nearly a year's exposure in the ground. I enclose a peg for your inspection, taken from the open border, where it has been about a year; also a new one.

Brockhurst, Didsbury. WM. BROCKBANK.

### ORCHIDS.

#### THE ACINETAS.

THESE, like the Stanhopeas, Acroperas, and Gongoras, are a somewhat despised class of Orchids from some unaccountable reason, yet they combine in themselves both singularity and attractiveness. They are evergreen plants with broad foliage produced from moderate sized pseudo-bulbs. The flowers invariably



Acineta Humboldtii.

spring from the base of the bulb and consequently are pendulous. The accompanying woodcut of A. Humboldtii gives a good idea of the habit of growth and mode of flowering, which is much the same in all of the three kinds. Besides A. Humboldtii there are A. Barkeri and A. densa. The former is a Mexican species, having spikes of rich yellow flowers about 1 ft. long, produced in midsummer, and remain a long time in perfection. A. densa, known also as A. Warszewiczii, is a robust-growing species also from Mexico. The flowers are citron yellow spotted with reddish brown. The flowers of A. Humboldtii, from Venezuela, are more or less of a deep chocolate red spotted with dark purple. It blooms in summer, but does not remain so long in good condition as the other kinds. The Acinetas are usually grown in suspended baskets so that the flower spikes may be out of harm's way as well as be seen to the best advantage. They succeed well under the same treatment as Stanhopeas, and like them require a large amount of water during summer. In the once famous Dangstein collection of plants, the Acinetas and Stanhopeas grown in huge square baskets suspended from the roof of the Palm stove was during summer one of the greatest attractions, as they invariably bore a good crop of deliciously scented flowers. W. G.

### "MADE-UP" SPECIMEN PLANTS.

I WAS much interested in Mr. Douglas' article on Orchids and the manner of their being exhibited. Undoubtedly the object of exhibitions is to encourage good cultivation, but I am not so sure that it would be secured by the judges awarding the first prize always to those who may have been growing Orchids the longest, for some of these large plants do not always testify good culture, but are often exhibited with foliage which is anything but a credit to the exhibitor. I think that a bundle of imported Orchids, quite small pieces, that have good foliage and induced to flower freely in a couple of years from the time they were imported, is quite as much an evidence of good culture when exhibited (as was the case in instances at this year's exhibitions) as other plants that were at the same exhibitions with the foliage not fit to look at, though the same have been grown for years.

But the question might be asked, What is a made-up Orchid? I consider it means that three or four, or more plants, as the case may be, put in together to make a large plant to start with, would remain a made-up Orchid as long as it continued to be grown as such, just as much as the plant that was put together the year it was shown. If this theory is correct, then I question whether Sir Trevor Lawrence's collection, beautiful as they were shown, was wholly free from the charge, as I quite suspect the pan of *Oncidium unifolium* so grandly flowered, and so seldom seen exhibited, was a quantity of plants put together to start with; but to compare this or any similar case with Messrs. Paul & Turner putting a dozen different varieties of Roses together to make a specimen is to say the least of it no comparison. But on the other hand, I should very much like to see a class in the schedule of all our large shows for the best collection of Orchids of new and rare kinds irrespective of size, or for the best collection of any one species, such as *Cattleyas* of any variety, to be judged for quality and fine form. As there are such beautiful kinds springing up every year, I think to the lovers of Orchid culture these would become very soon very interesting classes and bring many plants to beautify the shows that now never find their way there. Mr. Douglas says it is not usual to see *Oncidium curtum* flowering so late. The first plant of *O. curtum* I exhibited at South Kensington, by looking up the records, I find was exhibited on July 27, and all that have passed through my hands since that date, and that I have seen in other collections have bloomed the end of June or beginning of July, with the exception of an occasional plant that has bloomed before, fairly established. HENRY JAMES.

Castle Nursery, Lower Norwood.

**Turnip Fly Remedy.**—Many will be glad to know that if they surround their seed beds of the Brassica tribe with a line of wood shavings that have been saturated with coal tar in a cold state, and then water the beds with a watering-can, having a small rose, and slowly drive the fly forwards, they will hop at last into the shavings, and remain there sticking. Two such actions with the water-can will totally defeat the enemy.

**Bush and Heath Fires.**—"C. E." writes—"Bush and Heath fires may take place this weather by the bottoms of broken wine bottles acting as burning-glasses on the sun-dried Grass, Scrub, or Heath. The Australians know that extensive and damaging bush-fires have taken place in Australia in consequence of broken bottles having been carelessly thrown down among the dried Scrub. So camp fires at Aldershot and bush-fires on our commons may have their origin in parts of broken bottles acting the part of burning-glasses."



## THE FRUIT GARDEN.

### STRAWBERRY MARGUERITE.

A CORRESPONDENT, p. 33, speaks highly of this variety for open-air culture. It certainly is a heavy cropper, early, and has a good constitution, and I do not know of any variety that gives so many large berries. Generally speaking, the third berry on the truss does not come large, but in the case of the variety in question the greater portion of the berries come large enough for table use, so that, plant for plant, I should think a greater weight of fruit would be gathered from Marguerite than from any other of the kinds commonly grown. Against these advantages must be set the fact that in quality it is quite third rate, that only under the most favourable circumstances does it colour, and that it is extremely soft, so that it rots quickly in wet seasons and travels badly. At one time many English market growers went in largely for Marguerite simply because it came in earlier than any large-fruited kind then grown. With the advent of Sir Joseph Paxton, however, the popularity of Marguerite waned, for salesmen and fruiterers, as well as growers were glad to welcome a fruit which came into market in better condition, retained its freshness for a longer period, whilst being of much better flavour. Some, however, still cling to it, considering, and perhaps with reason, that the great weight of fruit that it may be made to yield more than compensates for deficiency in quality. I am acquainted with a grower who has tried most of the favourite kinds, but he asserts that Marguerite pays him better than any, and I know of more than one private grower who having done away with this kind to make way for others of superior quality have in consequence experienced a considerable diminution in quantity. I have good reason for belief that soil and situation as well as culture exercise great influence upon the quality of this Strawberry. Being naturally of vigorous habit, it attains great luxuriance on rich loam or when high culture is pursued, in which case the fruit is apt to get smothered by the foliage, and does not attain its proper flavour, for be it understood that although Marguerite cannot boast of the rich aroma and fine appearance that distinguishes such kinds as President and Sir C. Napier, it comes nice and sweet when thoroughly ripened. Plenty of space between the plants and not too rich a soil are therefore the principal points to be considered in the culture of this variety. J. CORNHILL.

### STANDARD PEACHES AND NECTARINES.

THE conviction gains on me that the standard will before long become the form of tree adopted in Peach culture under glass for all crops ripened after June or even earlier. The system will entail no more expense in Peach-house construction, if as much as for trellis-trained trees, and the trouble and difficulty of training the branches will be all but done away with. I am not speaking of those mop-head orchard-house specimens about the size of standard Roses, but of freely grown trees. The extension system of training wall or trellis trees now finding favour saves much time and enables one to get trees and fruit about six or eight times sooner than by the old plan advocated by Thompson, Moore, and others, but the standard tree excels the fan trained in that respect. About six months ago I planted a maiden Grosse Mignonne Peach tree, cutting it down at the same time to two buds close to the graft. These two buds have up to this date, July 25, produced two shoots, each about 4 ft. long, and each shoot has produced an average of fifteen sub-shoots or laterals from 18 in. to 1 ft. long, or close upon 40 ft. of bearing wood, which at the present moment is forming fruit buds at every joint, and maturing as freely as the shoots of the fan-trained trees. By November, probably 1000 fruit buds, or thereabout, will be matured, and I see no obstacle whatever to the tree setting a proportionate quantity of

fruit next spring, and bearing a crop, if permitted, of six or eight dozen fruit, and this only the second year from being budded. Not 1 in. of wood will be cut off, but the two main shoots will be bent down to their points and secured by a single tie each to give room to the laterals or fruiting shoots. The tree is growing in a ridge and furrow case about 12 ft. high and 6 ft. wide, and the head of the tree will be allowed to fill the whole body of the house from the top of the trunk upwards, thus giving a tree so much larger than an extension trained fan, that the latter would only represent a section of it. J. S. W.

**Morello Cherries.**—The Morello Cherry is suffering a good deal with us owing to the long continued dry weather, although all our trees are growing on walls with a north aspect, and as the trees are quite free from aphids and other vermin, I cannot account for it in any other way but the drought.—I.L.E.X.

**The Victoria Red Currant.**—This is unquestionably the best Red Currant in cultivation, of strong robust growth, and an enormous cropper. All kinds of Red Currants are fine and clean this year, but the Victoria is so exceedingly full of Currants, that the shoots are one complete mass. It is rather later in ripening than other sorts and invaluable for netting up for the late culinary and dessert supply. It is sometimes called the Scotch Red.—J. G., Linton.

**On Pruning Plum and other Trees.**—Your correspondent's enquiry in a recent number relates, I presume, to summer pruning, which, if properly performed, reduces the necessity for much winter pruning; in fact, in trees properly attended to there should never be much pruning necessary at any one time, for the cutting away of large quantities of wood means so much waste of force that ought to be directed to fruit bearing. All trained trees, whether Plums or any other kind, on walls, espaliers, or bushes ought to have all the young growth pinched in as soon as the shoots have made half-a-dozen leaves, only the leading shoots required for forming the tree being allowed to extend; but this operation should have been done long ago, and a second stopping would now be required. Trees thus treated do not require much winter pruning, merely cutting out dead or weakly shoots and shortening and thinning the fruit spurs. But if your correspondent grows his Plums as standards on the orchard system, and lets them grow unchecked during the summer, they will require all the leading shoots shortening by at least one half their length. Damsons, Apples, and Pears all require this for several years after planting, or until the head is fully matured, for if allowed to run up unchecked, they will get weak and straggling. I can see at present in a neighbouring orchard a quantity of Victoria Plum trees with all the branches supported by Hop poles, to keep them from breaking off with weight of fruit, rendered necessary by lack of timely attention in shortening the leading shoots so as to make sturdy central branches able to carry a crop.—J. GROOM, Linton.

**Brushing the Foliage from Peach Trees.**—Most gardeners know what various opinions there exists about simple matters, and among them the brushing leaves off Peach trees. Some say that if the leaves come off with a slight brush with a new broom, it will do the trees good. Others say that to brush the leaves off the Peach trees is not only unscientific, but really absurd. These various opinions have caused me to examine the leaves more minutely. Examining a Peach tree about the end of October, the leaves will be found to hang straight down the wall, no matter in what direction the branches are trained. This shows that the foot-stalk must be twisted to allow the leaves to hang in a different direction to which the branches are trained. Now, by taking hold of the point of the leaf, and pulling it in the direction of the branch (which is the same direction recommended for the broom to be used), we find they will snap off with the greatest ease,

say 1 oz. pressure or less, for sometimes they will snap off before we can get them straight. Then with the finger and thumb take hold of that part of the foot-stalk nearest the wood, and, pulling it in the direction that part points, we find it will take a 1 lb. pressure before it will leave its hold, or at least ten times as much as by the point of the leaf. This will show that it is not the readiness of the leaves to drop that causes them to leave so easily, but the twisting of the foot-stalk that forces them. Twenty-eight years' experience has brought me to the same conclusion as a writer who says, "Never brush leaves off Peach trees, but lull them to rest by withholding water." Believing that the Peach can be grown out-of-doors as well as ever it was with a trifling additional expense, I hope some of the readers of THE GARDEN will try and see what they can do, and record their experience.—F. B.

### THE BEST PEARS.

(Continued from p. 90.)

**Louise Bonne de Jersey** (Bonne Louise d'Avanches).—*Synonyms*—Bergamote d'Avanches, Bonne de Longueval, Bonne Louise de Jersey, Louise Bonne d'Avanches, Beurré d'Araudoré, Bonne Louise d'Araudoré, Bonne Louise, Bonne d'Avanches, Louise de Jersey, de Louise, William IV., Prince Germain.

**DESCRIPTION OF THE TREE.**—Wood strong, branches rather numerous, erect near the top of the tree, spread out towards the base and often bent down, very thick, long, slightly kneeled, greyish red shaded with green. Eyes average size, flattened oval, pointed, downy, attached closely to the bark. Leaves oval, lanceolate, slightly downy, sharply pointed, arched or gutter shaped, with the edges indented more or less deeply, the stalk not very long, but very strong, and slightly tinged with light red. Fertility, great.

**CULTURE.**—This Pear develops rapidly. It grows just as well on the Quince as on the free stock, and forms tall and handsome pyramids.

**DESCRIPTION OF THE FRUIT.**—Size, very large or above the average. Shape, elongated, ovoid, slightly knobbed, nearly always having one side more swollen than the other. Stalk rather long, rather curved, thin in the middle, generally swollen at the extremities, obliquely planted level with the surface of the fruit, with which it is sometimes continuous, but only on one side. Eye medium, round, closed or half closed, placed in a large hollow of variable depth. Skin, yellowish green, covered with coarse specks of a light brown colour, but tinged with bright red on the side next to the sun. Flesh, white, delicate in texture, very melting, juicy, and free from grittiness. Juice, exceedingly plentiful, sugary, vinous, slightly acid, with a flavour and perfume which are as delicious as they are peculiar. Season, from the middle of September to the middle of October.

**HISTORY.**—The parent stock which gave birth to the delicious Pear which has just been described was obtained from a seedling by a gentleman residing in the town of Avranches, in Normandy. Just outside the gates lived a certain Abbé le Bernays, who was vicar of the small village of Bois Guérin, and who was looked upon as the first agriculturist and pomologist of the day, and it was this Abbé le Bernays who in 1780 first tasted the fruit of M. de Longueval's famous tree. At dessert, one day, some of these Pears made their appearance for the first time. The Abbé was asked to give his opinion of the quality of the fruit, which he found to be of such exquisite quality, that he turned round to Madame de Longueval, who was famous throughout the locality for her virtue and goodness of heart, saying, "This new Pear has so many excellent qualities, that I must ask your permission to bestow on it the name by which every one knows you about Avranches—Bonne Louise. Whether the permission was granted or not does not appear, but the pretty name has remained. These details are authentic, and remained locked up in the memories of some of the older inhabitants of



the locality until they were dug out by the Horticultural Committee of Avranches—too late, however, to prevent a horticulturist of Angers (M. le Grandais) from sending the following note to the Horticultural Committee of that city, which has since been the means of leading several writers into error: "Louise Bonne.—This Pear was first raised in the nursery of M. de Longueval, of Avranches, where it fruited for the first time in 1788. It was first called Bonne de Longueval, but the well known Abbé le Bernays, who lived in a small country house near Avranches, described it in his excellent work entitled *Traité des Jardins*, and gave it the name of a lady who acted as housekeeper to him (*Bulletins de Comice Horticole*, 1838-39)." It was evidently this note that gave rise to another version, which is just as erroneous, that M. Longueval called it after his servant (bonne) Louise! For our part, while regretting that the Angers Committee was the means of propagating this error, we cannot help making the fact public, and thus relieve from blame certain authors whose only fault was that of copying the story from the *Bulletins* without stating from whence they obtained it. In 1861 M. Laisné, president of the new Horticultural Club of Avranches, had already corrected these mistakes in a letter, from which we will extract the principal passages, which contain a very interesting account of this variety and the greater part of its synonyms. "I know not," says M. Laisné, "from whose imaginative brain the idea with respect to the name of this Pear adopted by the Pomological Congress could have sprung. Although the story that M. de Longueval called this Pear after his servant places that gentleman in a somewhat ridiculous light must have originally started from Avranches, I must, nevertheless, deny the truth of it. It was Madame de Longueval whose name was Louise, a fact of which I have documentary proof, and who was godmother to the Pear. It is also to the Abbé le Bernays the credit of the first suggestion is due, both according to the constant and universal tradition of the locality as well as to a local biography of the Abbé published in 1808. Again, it is not the name of Louise Bonne that the Abbé le Bernays bestowed on the Pear, but Bonne Louise. It is therefore by this last name that the Pear should be known, and not by any other." If this excellent Pear remained almost unknown to the rest of the world for nearly half a century, the loss was caused by the fact of the horticulturists of the locality having but very modest establishments, doing but little business with the outside world, especially with France, and above all with Paris. They were nearer to the islands of Jersey and Guernsey, and even to England. During the short Peace of Amiens in 1802, and above all after 1816, they exported large quantities of trees to these localities. After 1816 the name of this Pear became corrupted in Avranches itself to Louise Bonne; it was accordingly under that erroneous title that the tree passed from Normandy to Jersey, from Jersey to England, and thence to Paris with the wrong name of its original locality attached to it. As for the date of the first fruiting of M. de Longueval's Pear being 1788, I am convinced that the proper date should be 1780, seeing that in 1808 the age of the parent tree was estimated at 40 years, and its present appearance (1861) is that of a tree of from 90 to 100 years old. It would therefore go back, say, to 1765, and as this variety gives fruit very soon we may fix the date at 1780 at the latest. It could not, on the other hand, have been earlier than 1778, because it was only in that year that M. de Longueval acquired his property at Avranches, and it is incontestable that it was by him that the fruit was first obtained" (*Revue Horticole*, 1861). In Anjou the Bonne Louise has been grown for fifty years past, and it is by M. Leroy that it was first propagated, as M. Forney rightly states in his *Jardin Fruitière*, published in 1861. M. Montagne, one of the directors of the Botanical Garden at Avranches, says, "M. Forney first made this variety known to the outer world. About 1827 he

sent cuttings of it to M. André Leroy, of Angers. The parent tree," adds M. Forney, "measures nearly 6 ft. in circumference, and is over 40 ft. high." (To be continued.)

#### SUPPLEMENTARY FRUIT REPORTS.

**Renfrewshire.**—The fruit crops in this neighbourhood are much better than for several years past. The Apple crop is, in general, good. Pears also are a fair crop, but sadly in want of heat and sunshine to swell the fruits. Wall fruit is not so abundant, some trees having suffered from the severity of last winter, particularly Peaches and Apricots, which are thin with us. Strawberries are a heavy crop. Gooseberries are also plentiful. Raspberries abundant and very fine. Currants, Black, Red, and White are likewise very heavily fruited, the dripping season in this quarter having encouraged all bush fruits to carry and swell up heavy crops.

Potatoes are not turning out so well this year, the tubers being small and very soft. The want of dry sunny weather is no doubt the cause. There are no symptoms of disease in this district.—JOHN METHVEN, *Blythswood*.

**Bodorgan, Anglesey.**—Apples and Pears are a somewhat better crop than last year, though far below an average crop. The bloom was abundant, and late enough to escape all risk of frosts, though our fruit crops here rarely suffer from this cause. A succession of violent S.W. to westerly gales, with heavy rain for several days when the trees were in bloom and setting their fruit, destroyed the bulk of it. Similar gales at that season blowing from St. George's Channel always have the like effect. Bush fruits, such as Currants, Gooseberries, &c., are abundant and good. Strawberries suffered from the cold weather in May, and have been an inferior crop. Cherries, of which we grow few but Morellos and May Duke, are and have been a fair crop. Plums, except Green Gage, Mitchelson's, and Rivers' Early Prolific, are nearly a failure. Other stone fruits, such as Peaches and Apricots, will not do here outside; in fact, the trees will hardly exist. Of Apples our most reliable sorts are Keswick, Lord Suffield, Hawthornden, Alfriston, Cox's Orange Pippin, A 1 as a dessert fruit, Ribston Pippin, Dutch Mignonne, and a few other hardy sorts. Small's Admirable promises to be one of our best sorts. No Pear succeeds here so well as Marie Louise. Beurré Diel fruits well, but has little flavour. Passe Colmar, Glou Morceau, Beurré Superfin, Winter Nelis, and Louise Bonne of Jersey are reliable sorts. Of Strawberries we have none so generally satisfactory as the old kinds, Keen's Seedling and President. Sir Charles Napier also does well. La Grosse Sucrée is a splendid forcer, but hitherto has not done much outside. This island, with the exception of a few favoured spots on the shores of the Menai Straits and near Beaumaris, is at best a poor fruit growing district. So far as the tree fruits go, such as Apples and Pears, without a certain amount of shelter from sea winds, especially near the coast, there is not much chance of a successful crop unless in exceptionally favourable seasons.—J ELLAM.

**Raby Castle, Darlington.**—Apples super abundant. Pears, sufficient to ensure good quality. Apricots a light crop, and Plums also. Cherries of all kinds abundant, and also of every kind of bush fruit, and Strawberries very good. It is many years since we had such a generally good fruit prospect as the present, and trees and bushes of all kinds so healthy and free from insects, except grubs, which, though prevalent, have done no serious damage, and there is a remarkable absence of aphid and red spider, which usually are two predominating pests. Peaches and Nectarines are not grown here on open walls, nor Figs. Nuts, none.—R. WESTCOTT.

**Abney Hall, Cheshire.**—The small fruits are good—crop and quality. Strawberries about all gathered, also Red Currants. Black Currants extra good crop and quality, the

reason of this in a great measure, I believe, is owing to the ground having been well mulched with half rotten manure in spring, which kept the border damp, as the young roots could any time be easily found working on the surface under the manure. Raspberries good crop, also Gooseberries. Apples and Pears rather under average, some kinds of Apples have good crops—Grenadier, Hawthornden, Lord Grosvenor, &c., but many trees have very few. The same may be said of Pears; Jargonelles seem plentiful, Williams' Bon Chrétien fair crop, but many trees with but few on them. Damsons are a good crop, also Victoria Plums, but other kinds very thin. Morello Cherries hardly an average crop.

Potatoes this season so far have been excellent, and the fields in the neighbourhood promise extra well.—ROBERT MACKILLAR.

**Ravensdale Park, Co. Louth.**—The fruit crop is very promising. Apples in great abundance, and, to all appearance, of excellent quality. Pears about an average crop. We are not able to grow Peaches and Nectarines, not even the earlier varieties, and such as Early Victoria and Beatrice are a failure. Plums an average crop. Cherries above. In small fruit, our report is also good. Strawberries average, but greatly damaged by the excess of wet. Currants (Black) abundant. Red and White about the average. Damsons a moderate crop, while Raspberries are about an average. Nuts a good crop. The weather very much against the procuring of fruit for preserving, and much loss must ensue.—F. FOWLER.

**Ramsey Abbey, Hunts.**—Fruit crops in this district are variable. Apples are plentiful generally, not only such sure bearers as the Codlins, Beauty of Kent, Waltham Abbey, Fearn's Pippin, and Normanton Wonder, but the less free bearing kinds are this year fruitful. Pears are thin, and the crop, where there is one, mostly confined to young trees. Plums are a failure. We have no fruit anywhere except on the north wall, and the failure of the Plum crop is, I believe, in the district complete. Peaches, where the trees had vigour enough to stand the cold and maintain their health, are carrying a good crop. But so far as I have seen in a good many gardens, old trees with a low vitality have pretty well succumbed to the combined influence of the cold winter and spring, and the attack of red spider which came with the hot weather. Apricots have lost some branches, but most of the trees are bearing some fruit, and a few are heavily laden; Cherries, on the whole, have been good, especially Morellos, but small; bush fruits of all kinds, and Strawberries have been splendid, and Nuts of all kinds are plentiful; Figs suffered from the cold in winter; open-air Grapes, where the Vines are young and on good aspects, are doing well and showing plenty of fruit.—E. HOBDAK.

**Floors Castle, Kelso, N.B.**—Our crops of fruit are very poor, stone fruits especially, except perhaps Cherries. Our past winter having been too much for the trees, and even those on walls, protected though they be to a great extent, many were killed outright, and even now limbs are still dyeing. In our orchards you see some branches sticking up through the young grown growths, indicating most melancholically the cruel ordeal through which they have passed. The hardest sorts of Apples are, of course, as may be inferred, the most prolific, and the same is so with Plums. Small fruits are plentiful except Strawberries, which have been a poor crop, though good in quality. The favourable weather has caused a healthy growth in everything which requires to be properly utilised in view of better prospects in store another year.—H. K.

**Drayton Manor Gardens, Tamworth.**—I am glad to report an improvement in fruit crops generally this season, although the crops are not heavy. Apples, Pears, and Damsons are a good average; Plums, scarce; Cherries, fair; all bush fruits exceptionally good; Apricots, a failure, trees nearly all dead. We are slow to learn, but the late disastrous seasons for fruit ought to teach



a lesson, and restrain us from growing so many useless sorts of Apples, Pears, and Plums in our capricious climate, seeing that three seasons out of ten not above a dozen sorts of each can be relied on for a crop. The Americans seem to be far before us in the matter of selection, judging by the few varieties they send us in such enormous quantities.

Potatoes are looking splendid; the crop of earlies is not very heavy, but the quality is excellent.—O. THOMAS.

**Jersey.**—The past winter was unusually severe, and it was much feared that fruit trees and fruit-bearing plants would have suffered severely from the effects of it. The spring has

ing Morellos against north walls, and a large portion of these dropped off during the dry weather in June, but the remainder are now ripening well and the fruit fine. Plums promise to be a fair crop against walls, but the trees in the open quarters show to little advantage. The hardy kinds, such as Blue Orleans, Denyer's Victoria, and Washington, are best. Green Gages are very sparse. Peaches and Nectarines are not abundant. The same remark applies to Apricots; much of the wall fruits, and especially these, dropped off early. Pears are but a partial crop. In some cases the whole of the blossoms fell off just before setting, but in others where the trees were protected or against walls the crop shows to advantage, espe-

Tottenham Court, nor Bowood Muscat are as certain bearers as the old variety. Gros Colmar, Black Alicante, and Foster's Seedling are also grown as late useful Grapes, and are much preferred to Gros Guillaume and Lady Downes Seedling, as they hang better. In light soils the general crops of fruit and vegetables have been poor this spring, but in heavier and rich retentive soils they have not suffered so much from the periods of drought. We are gradually working our way to systems of artificial culture, which will make us less dependent upon the outer atmosphere. —C. B. S.

**Heckfield Place, Winchfield.**—With the exception of Apricots and Plums, all kinds of



A Ferny Nook.

been very dry at intervals, particularly at the blooming season, so that the greater portion of the blossoms fell from the trees when it was hoped they would have set their fruit; hence the report of the fruit crop is rather unsatisfactory. Strawberries promised to be a fair crop, but have not lasted out, owing to the dry weather; the late varieties have suffered most. Where it was possible to keep the plants supplied with moisture the blossoms have set most freely. Keen's Seedling has been most productive; Trollope's Victoria, La Fertile, La Surprise, Elton Pine, all late and excellent varieties, have scarcely been worth gathering. Gooseberries have proved a medium crop. Currant fruit has been small both in bunch and berry, and limited in quantity. Raspberries are proving a fair crop. Cherries are poor, except-

cially Chaumontel, Beurré d'Amanlis, Louise Bonne, &c. Baking Pears, such as Belle de Jersey and Catillac, have done better and look well. The rain now falling will be of very great advantage, although it may cause the fruit to drop off. Apples are not abundant, but some of the varieties of this king of fruits nearly always produce a crop, such as Lord Suffield, Hawthornden, King of the Pippins, &c., &c.; but Ribston Pippin, Blenheim Orange, and Royal Russets are more scarce. Grapes under glass are fine this season, and promise to be a fair crop. The principal varieties grown here are Black Hamburg, Victoria Hamburg, and Muscat of Alexandria, and it would be difficult to replace them as productive and useful varieties. Many other varieties of Muscats are grown, but neither Canon Hall,

fruit trees flowered finely, Apples and Pears in particular; but during the whole time that Apples were in flower there was not a night in which the thermometer did not fall to 32°, and twice to 24°, a sufficient reason for the thin crop there is of most kinds, for though some are a full crop others are a failure, so that, taken on the whole, there is not more than a third of a crop. The finest bearers are Cellini, Keswick Codlin, Blenheim Orange, Golden Noble, and Wellington. Pears throughout are a good half crop, the weather being more genial during the time they were in flower. The kinds bearing the heaviest crops are Winter Nelis, Duchesse d'Angoulême, Passe Colmar, Williams' Bon Chrétien, Marie Louise, Knight's Monarch, and Pitmaston Duchess. Peaches are a full crop, and I never saw them better, and



all varieties are alike, but unfortunately they are now getting over-run with spider, a result of the excessive heat we have lately had to contend against—94° in the shade on three different occasions, and for a fortnight together the mercury ranged from 75° to 85° in shade. Apricots are very thin; the buds of these were killed on January 18 by the storm that seems to have been general in this country. Moorpark seems to be the hardiest, as this is the only kind that is fruiting fairly well with us. Plums are as thin as Apricots, the reason being attributed to the excessively heavy crop the trees bore last year. All small fruits have been full crops. The Strawberry season has been the shortest I have ever known; the great heat withered them up, and it is difficult to get runners. Filberts and Walnuts are enormous crops.—W. WILDSMITH.

**Bearwood.**—The fruit crops here and neighbourhood are far different from last year, as we have this season good average crops of most things. The Apple crop is a good one. Pears thin in places. Peaches and Nectarines very good. Apricots thin. Plums under average. Filberts an immense crop. Bush fruits a very good one. Strawberries a good average crop. Everything here and about this neighbourhood is suffering much for want of rain. I think most sorts of fruit will run very small from want of moisture.

The Potato crop will, I think, be a good one. Our early sorts are excellent, good in flavour, and free from disease. Backward sorts looking well; but they will run small should the dry weather continue.—JAMES TEGG.

**Dunrobin Castle, Sutherland.**—Bush fruits plentiful and good. Strawberries are not fulfilling expectations, many of the flowers having failed to set, the late spring frosts of June 8 and 10, and the cold wet season so far, having been unfavourable for them. Apples plentiful, but will be in many cases small if not thinned. Pears a thin crop of the best kinds. Plums average. Cherries average. Vegetables are doing well, with the exception of Carrots and Parsley, which have suffered from insect attacks at the root. Our soil is a light deep friable loam. Exposure, open seawards to the south, south-east, and south-west; sheltered by rising ground and wood to the north, north-east, and north-west. Our proximity to the sea almost invariably ensures our safety from spring frosts after the middle of May. With the exception of this season, we have no record of frost occurring in June here for the last twenty years.—D. MELVILLE.

**West Middlesex.**—Throughout the extensive garden orchards of this important market district the fruit crops are uneven as far as top fruits are concerned, but bush fruits have been abundant. Apples always take the leading place, and constitute the most important market fruit. Of these the most widely grown are Manks and Keswick Codlins, both kinds being fairly well set with fruit. Lord Suffields are very good in some places and heavily laden. King of the Pippins about half a crop, and the same may be said of Wellingtons, the most widely grown late Apple. I have seen in some old orchards some good trees of the Red Quarrenden, but this kind is rarely planted now. Juliens are amongst the earliest gathered, and are a fair crop. Warner's King, thin but fine; Blenheim thin, and also Yellow Ingestre. One of the best crops is found on that really first-class Apple, Stone's Pippin, the trees of which in some places are quite laden. The general impression is that the Apple crop throughout this district is not more than half a one. Though not representative of the general crop around, I have on unpruned trees here of the Early Harvest, the earliest of all summer Apples, very good crops. Red Astrachan quite a good crop, also Munich, American Mother Apple, Cox's Orange Pippin, Tower of Glamis, Kentish Fillbasket, Stamford Pippin, Cellini Pippin, Golden Noble, Downton Pippin, Sturmer Pippin, and many others. I anticipated even better results next year, as the trees are setting robust fruit buds that should be well matured. Pears are a very partial crop, the best ones being found among some of

the smaller kinds, such as Hazel, Beurré de Capiaumont, Portugals, an early and very erect-growing kind, and one bearing the local synonym of Pegtops, so called from the likeness of the fruit to a boy's top. This is a very dense and free-fruited kind, large trees producing from 12 to 20 bushels each. The stems are remarkably clean. The fruit when ripe is small and yellow, and has a thin stalk 1 in. or more in length. It is now ripening, and will soon be seen abundantly on the costermongers' barrows. Of larger sorts, Williams' Bon Chrétien is a good crop, and Gros Calebasse fairly so, but many other kinds are very thin. Like Apples, the Pear crop is not more than a good half one. I have here in good fruit on unpruned pyramids Alexandre Lambré, Beurré d'Aremberg, Beurré d'Amanslis, Brown Beurré, Aglae Gregoire, and Swan's Egg. I have seen a few good trees of Bishop's Thumb, but it is not largely grown. Plums are but a moderate crop. Here and there a tree of Victoria is so loaded that it needs propping; but, on the whole, I think the crop is a thin one. Two-year-planted trees of the Fairleigh Prolific Damson are with me quite laden, but then it is not yet much planted in the district. The chief Plums are Victoria, Diamond, Prince of Wales, and Gisborne's. Sweet Cherries have been a fairly good crop, and ripened well without cracking. Morellos have been a heavy crop, and a most profitable one, selling freely at 6s. per dozen pounds. This is one of the best paying of all standard fruits. Apricots are few; Peaches and Nectarines moderate. Walnuts generally heavy, indeed in some places the heaviest crop ever known. Of bush fruit Black and Red Currants and Gooseberries have been abundant, and certainly most profitable. Black Currants, in many gardens a wonderful crop, have been selling at 12s. per bushel. Gooseberries, whether green or ripe, have sold well too, and, indeed, on the score of these growers have had no cause for complaint. Raspberries have largely proved a failure, entirely from drought. In good moist soils the crop was excellent, but in gravel they collapsed suddenly, and gave not half a yield. Strawberries, from the same cause, were only half a crop; the best fruits not of good size. Those who grow Strawberries by the acre have not found them at all profitable. On the whole, the fruit crop is much better than that of the two preceding years, but might have been much better. I should add that the recent rains will wonderfully improve the quality of the hanging fruit.—A. D.

**Welbeck, Worksop, Notts.**—Apricots here are very good, all being protected by glass; Apples, an average crop; Morello Cherries are a good crop, but the fruit on the other varieties was nearly all destroyed by the late frost; Peaches and Nectarines on open walls are under the average; Plums, a total failure; Pears, average; Strawberries, plentiful and fine; Gooseberries, Raspberries, and Currants, a full average.

**POTATOES.**—Early varieties are not so good a crop as last season. Up to this time there is no disease. Late sorts look remarkably well.—R. CARR.

**Highbrook, Watford.**—The fruit and vegetable crops in this district are good. Apples in most places good crops. Pears are also good crops, and free from cracks and smut or blight. Apricots fair. Peaches fair. The blight and frost in June did a great deal of harm to wall trees in some places, but the trees are recovering nicely. Gooseberries, Raspberries, Red Currants, &c., good crops. Strawberries good, but not lasting, owing to such a hot dry time. Vegetables of all description good, especially Peas and Potatoes; they are in most places good. Spring Cauliflowers have suffered, and not come so well as might be desired. Seed crops, Beet, Onions, Parsnips, &c., good. We are much in need of rain in this neighbourhood, as the trees, shrubs, &c., are beginning to suffer, but everything has stood wonderfully well after such a hot, dry season. Roses first-class, but over very soon; several lost through winter's frost, especially standards. I would recommend the

covering up of all Roses where practicable of this season's varieties. The season of small fruit, vegetables, &c., a fortnight late. Roses cut ten days later than we have cut them these last seven years.—G. BRUSH.

**Maidstone.**—The fruit crop generally may be considered good after the experience of the last few years. Apples, especially the free-bearing sorts, such as the Keswick and other Codlins, will be a good crop. Cherries were short, but, owing to the favourable weather, have proved a remunerative crop. Plums will not be very productive; the Victoria is the best, and Damsons in this district are good. Nuts may average half a crop. Currants and Gooseberries, especially the latter, have turned out well. Hardy Pears, like the Hessel, are likely to produce an average crop.

Potatoes are good, but, on account of the dry weather, small.—L. A. K.

**Horsham, Sussex.**—Throughout this district I consider Apples to be less than half a crop, but early kinds, such as Hawthornden and Keswick Codlin, and a few others in cottage gardens, are a heavy crop. Pears are very clean, and a good average crop, especially Marie Louise, a Pear that does well in this part. Local kinds are an average crop. Plums a good general crop. Cherries a good average crop throughout this district. Strawberries have been a good crop, and fine; indeed, all kinds of small fruit have been plentiful. Nuts are an average crop. Walnuts half a crop, but general.

Potatoes looked well in the early part of the season, but owing to the great heat and want of rain both early and late kinds dried off. Hence the tubers are small, but sound, there being no blight. SIDNEY FORD.

**Loxford Hall, Ilford, Essex.**—Apples, taking them in the lump, are a good crop; the quality is also good. None of the trees were protected, and it is very interesting to notice the vagaries of certain varieties. Scarlet Nonpareil has no fruit while Cellini next to it is loaded; Wellington bears an abundant crop, and Waltham Abbey Seedling next to it has scarcely any; Mère de Menage, Cockle Pippin, Orange Pippin, Cox's Pomona, New Hawthornden, Alexander, Tower of Glamis, and Sturmer Pippin are all heavily cropped. All the early varieties are good; Keswick Codlin and Lord Suffield we use for culinary purposes, and White and Red Juneating, Astrachan, Irish Peach, Early Harvest, and Kerry Pippin for dessert. Pears are comparatively a failure; Marie Louise on the wall and as a standard are good. Williams' Bon Chrétien bears a crop, and we have a few of the little useful Doyenne d'Été. There are no others. Plums are not nearly up to the average; we have a fair crop of Damsons. Magnum Bonum, usually a shy bearer, is good, and Early Prolific also; the trees are healthy and clean. Peaches and Nectarines in the orchard house are better than usual. They bear freely without an exception; the leaves are clean and healthy, and the quality of the fruit first-rate. We do not grow any on the walls. Apricots are very poor as regards crop; indeed, they are a failure; but the trees look remarkably well. Cherries have been a most abundant crop, and the quality good. The standard and pyramid trees have had better crops on them than the wall trees. Strawberries have been an excellent crop—from Black Prince the earliest to Loxford Hall Seedling the latest. A good soaking with water would have improved the quality, although the fruit was good. Raspberries suffered much from want of rain, else they showed well at blooming time. Gooseberries and all other small fruits are abundant and good. The Gooseberry caterpillar was more troublesome than usual. Our soil is very light and sandy.—J. DOUGLAS.

**Eden Hall, Penrith.**—Fruit is generally good here this season. The late spring has saved the bloom, which usually gets spoiled by frost and east winds. We have a fair crop of Apples, of which the following sorts are good here, viz.,



Lord Suffield, Stirling Castle, Duncow's Seedling, Golden Russet, Peach Apple, Ribston, Belmore Pippin, Winter Wine, and several others. Pears are an average crop. Beurré d'Amanlis, Beurré d'Arenberg, Beurré de Capiaumont, Beurré Rance, Easter Beurré, Citron des Carmes, Passe Colmar, Louise Bonne de Jersey, Moor-fowl Egg, Jargonelle, and Seckle are all bearing good crops. Plums, consisting of Coe's Golden Drop, Green Gage, Golden Gage, Magnum Bonum, Pond's Seedling, and Victoria, are the best here. Small fruits have been very plentiful and good. The soil here is very light, resting on red sandstone, and we are very much exposed to east winds.

Potatoes are a very good crop generally in gardens, and as yet no disease has appeared. In general this has been a fine season for all sorts of garden produce.—F. BLACKWOOD.

### PHOTOGRAPHS OF PLANTS.

WE are indebted to Mr. James B. Bevington, of Merle Wood, Sevenoaks, for several photographs of plant life, taken by his son, the late Mr. Geoffrey Bevington, between the years 1861 and 1871, and chiefly from views in the wild garden of his father's former residence on Wandsworth Common. Great care and patience must have been exercised in the preparation of these pictures, and in the selection of perfectly calm days for taking them. The engraving given (p. 146) is copied from one of these excellent photographs, and represents a plant of *Polystichum aculeatum* growing under the protection of the trunk of a tree which has been sawn down and has fallen against a bank of Ivy and Brambles. Mr. Bevington tells us that the same plant is now growing in still greater luxuriance at Merle Wood.

## THE KITCHEN GARDEN.

### SOWING CABBAGE SEEDS.

THE season for sowing seed of the main crop of spring Cabbages has now arrived, and if the weather keeps hot and dry great care will be needed to get a supply of healthy plants, for the soil is swarming with fly, or what is called flea, that devours every tender leaf as it emerges from the ground. To such an extent has this happened, that all kinds of the Brassica tribe in seed-beds and Turnips have been kept alive only by the constant use of the watering-pot, their leaves looking as if riddled with shot. The first consideration is to select an open piece of ground that has not been cropped with any of the Cabbage tribe for some time; having dug it up deeply, give it a thorough good soaking of water, and as soon as it gets a little dry on the top tread it down firm and rake the surface fine; then draw drills about 9 in. apart and sow the seed thinly and evenly, covering it over with a mixture of wood ashes, burnt earth, and finely sifted old potting soil. Cover the whole with an old fish net to keep the birds off, and lay green branches on for shade and to check evaporation. The seed if kept moist will come up quickly, and on no account must the young plants be neglected afterwards. A supply of dry wood ashes is an excellent help to the cultivator of Cabbages. They may be dusted over the foliage, and thus used will act as a deterrent to insect pests, and as a manure when washed down to the roots. The plants should be planted out where they are to remain as soon as they are large enough to handle, or be pricked out in beds before they get what is termed drawn. For early sorts that

are cut in quite a small state before they form much heart, 1½ ft. apart each way is sufficient and for main crops 2 ft. and 2½ ft., according to the size of the variety. We find medium sized sorts the best; Wheeler's Imperial, Heartwell Early Marrow, and Early London are good in every way. Cabbages are only thought really good when tender and succulent and very mild in flavour, and to insure these qualities the soil must be in good condition: well decomposed farmyard manure may be freely used, but rank unfermented manures are liable to give the produce an unpleasant taste, and liquid manures must also be cautiously used for the same reason. I have seen splendid Cabbages to look at grown by means of copious supplies of house sewage, soap-suds, &c.; but when boiled they betrayed what they had been fed upon. Therefore, when using liquid manure, it must be in a very highly diluted form and clean water should be applied at alternate applications. It is difficult to state the exact date on which sowings should take place to suit all localities, but from the middle to the end of July will be found the best date for a wide range of country. *Linton.* J. GROOM.

**John Bull Pea.**—I have sent you a painting of Laxton's John Bull Pea, a very fine variety; it grows from 3½ ft. to 4 ft. high, and the crop it bears is almost marvellous. It is the best Pea that I know of, a white wrinkled marrow.—R. GILBERT, *Burghley.*

**Fennel Roots.**—When in Italy and Austria last winter, I saw the roots of Fennel (*Finochio*) in every market, quite as thick and white as Celery, and much better to my taste both cooked and uncooked. Is it the same sort of Fennel that we have in this country? When I returned home at the end of April I had several rows of seedling Fennel planted just like Celery. They grew well, but now appear to be running to seed. Ought I to pinch them?—WELSHMAN.

**Lifting Early Potatoes.**—The sooner these are out of the ground the better, for if wet weather sets in super-tubering will occur, and where the haulm is dead they cannot make any heavier crop, and the best way to augment the vegetable supply is to have all crops that are ready lifted at once and stored in thin layers, and to crop the ground as soon as possible with winter greens, Broccoli, Turnips, Leeks, or salads. Short Horn Carrots for drawing young are a useful autumn crop, and Onions sown at once are useful for drawing green or left to form bulbs. Where the soil was well prepared by deep cultivation for the Potatoes, merely levelling with light forking between the rows as the crop is lifted will be sufficient, for every day is of importance now in getting such crops started, and the crop of Potatoes being light there will be all the more demand for green as well as other root crops.—J. G., *Linton.*

**Early Turnips.**—There are few vegetables that have perplexed, not only me, but many others, more than Turnips, and frequently has the *chef du cuisine* doubted if so useful, and to his idea simple, a vegetable could not be procured to succeed the old ones. I intended to devote a cold frame this season to forward some, but, not having any too much frame room after they were well in rough leaf and stocky little plants, I planted a row of them at the edge of some Asparagus beds. The alleys of our beds are filled with leafy manure in the autumn, so that the bed is about 1 ft. above the alley. The ground is rich, and suited them well. Although the fly perforated them cruelly, and lookers-on ridiculed transplanting Turnips, I did it, and, what is more, I shall always do it, for I have had plenty of good Turnips since the 2nd of June, that to some in more southern parts may not seem early, but it is in Shropshire, and it has bridged over a want that in some seasons has caused

great inconvenience. The sort used was the Six Weeks.—GEO. BOND, *Walcot.*

### NOTES AND READINGS.

I have been reading a book written by a Mr. Samuel Wood, who, although he is prepared to prove to demonstration that market gardening is a royal road to wealth, seems to have chosen the precarious occupation of book-making for his own business. The personal pronoun figures very conspicuously in Mr. Wood's preface. "I have studied," he says, "for a long time the functionary construction of plants, especially the Vine," and he has come to the conclusion that "warmth combined with moisture and abundance of oxygen among the branches are the necessary conditions to produce well coloured and fine fruit." Some apology is due to Mr. Wood from gardeners for the unwarrantable use they have made of this discovery without even once acknowledging its author. It appears, too, that Mr. Wood was the first to suggest covering Vine borders with Grass, since he calls the system his, and says that his Vine border protector will doubtless supersede the "usual method of planting Vines inside houses." Indeed, as one reads Mr. Wood's book, one cannot help thinking that a peep into any of the horticultural papers of any period during the past thirty or forty years would be quite a revelation to him. He writes upon old and familiar matters connected with Vine culture that savours either of extreme assurance on his part, or of astounding ignorance of Vine literature.

His method of double-glazing vineries, we are also told, "will, no doubt, be generally adopted for the early forcing" of the Vine. His confidence in double-glazing for Vines is, we suspect, derived from his knowledge of the "functionary construction" of plants, but I would like to know if ever he saw it tried, and where. Double glazing is an exploded idea, except for a few special purposes. None of these include the forcing of fruits. Mr. Wood has also clearly got into his head that it is a common practice among Vine growers to plant their young Vines "in the first instance in undecomposed animal matter," which, he gravely says, "is quite a mistake." He does not state, however, that he has any objections to a decomposed bullock or a pig; it is very fresh meat he objects to. He has solved the mystery of colouring Grapes: "The sudden fall of 20° by night will materially promote the colouring of the fruit. The low temperature thickens the juices, which get oxidised by virtue of the air playing all round the fruit," &c., and the colouring process goes on proportionately well. Poor Mr. Wood! Sanguine man! He even sees his way to make money certainly by forcing Gooseberries and Currants under glass, and the grower is to realise an immense profit on forced Potatoes, which are to produce 2 lbs. of tubers to each square foot of space under glass; said tubers to be disposed of in the market by the beginning of May at 6d. a pound, when the public can buy better imported Potatoes at that price retail. These examples will convey some idea of Mr. Wood's knowledge of "the forcing garden."

The Rosery is enclosed by a Laurel hedge. It is circular in shape, and cut into four quarters with a mound in the centre for a statue, and with a gravel circular walk connecting the four by which the garden is divided. Exactly; a piece of ground in some prominent part of the pleasure grounds, laid out and cut up into four quarters in the same manner as a Scottish housewife cuts her bannocks, only in place of the



statue in the centre she makes a hole, or, as in the more ornate article, sets up a knob of dough designed after her own happiest conception. This is the Rosery of the past, but not yet quite obsolete. In nine cases in ten it is planted with standards and dwarfs in an equally methodical manner—set like Houseleeks, all in a row, and in winter they are a subject of profound interest and satisfaction in the midst of a pleasure garden.

There is an excuse for the nurseryman or the exhibitor keeping his Roses by themselves, where he can give them the attention they require, but just imagine planting an acre of Roses in four plots, edging it in like a gaol and putting all your Roses there. How many appropriate positions the different varieties would fill in different portions of the grounds in conjunction with other plants and trees where they would look ten times better, and more natural, and do just as well. Oh, that awful propensity to put things in pattern beds!

Reverting to the subject of Carnations, I would speak a word for the old crimson or scarlet Clove, one of the most distinct and finest of its class; it is of ten times more value than the fastidious *Malmaison cœruleus*, as it thrives anywhere, and is not surpassed by any other variety. Brilliant in colour, large in flower, and delightfully fragrant, one would think it had not to be hunted for by cultivators who wanted it; but it is so, as it is not usually found in approved lists. It blooms late, too, and is usually in flower after the others are over, and I have seen masses of it that had not been disturbed for years, nor protected in severe winters. Its strong shoots, broad foliage, dwarfish flower-stems, and large plump buds mark it out clearly in any collection. A dwarfier habit is desirable in Carnations; some are 1 ft. high, and some are 3 ft., the last requiring far more staking and tying.

"Made-up" specimen plants, especially in the case of Orchids, is certainly a subject that deserves attention at the hands of exhibitors. "Made-up" specimens are best calculated to produce a display in an exhibition, and that is a point societies have to consider. If exhibitors were restricted to single plants, much of the grandeur of an exhibition would be lost, unless the exhibits were proportionately numerous; but it is clear that the man with the largest purse will be the winner of prizes who is permitted to make up his specimens. This was made manifest at some of the late shows where the prize collections contained pots of new and popular Orchids, like *Cattleya Mendelli*, made up of pieces not long imported, none of which in themselves denoted particularly good culture, but which in the mass were imposing.

It is curious how fallacies like the "two Strawberries in a pot" lay hold of some people's minds. The double-plant-and-small-pot idea has often been broached, but experienced cultivators like "W. W." know it is a wrong one. If a 5-in. or 6-in. pot is not too large for one Strawberry plant, potted at the proper season, it cannot be too small for two, and *vice versa*. As well think of getting more heat out of a piece of coal by dividing it into two pieces as of getting more fruit from a plant sustained on food sufficient only for one. A similar mistaken idea is that the best pot Vines, Pines, or Melons, &c., are produced in small pots. If a sufficiently good plant can be got up in a 9-in. or 10-in. pot, it simply shows that that is enough for it under the conditions which it is grown. The thing is to determine the size most

suitable for any particular subject. With plants like the Strawberry or the Pine, the question resolves itself into one of time and the thorough ripening of the plants. Other things being equal, the biggest and the strongest plants of either of these will produce the largest and greatest quantity of fruit, just as great Vines with strong shoots and big buds produce the largest bunches, and they must have root room in proportion.

PEREGRINE.

### A NEW SOLANUM.

A SOLANUM with beautiful fruit was sent from Brisbane by Dr. Bancroft to his friend Mr. Thos. Christy, the Doctor being struck with its high value for decorative purposes, for which it is exceptionally well suited. It produces fine bunches of bright red berries, very handsome and showy, and which have the valuable property of retaining their colour and freshness for a very long time after being gathered. These specimens sent by Dr. Bancroft were, even after their long voyage from Brisbane, in capital



A new Solanum.

colour and condition. The skin hardens and the red retains all its vividness. The plant is fairly hardy, and does well in a sub-tropical border. The leaves have purple veins running through them. Mr. J. N. Fitch was so struck with the attractiveness of this Solanum and its bright berry, that he at once sketched it, and I am thus enabled to send a sketch of it from his drawing. It will prove a valuable addition to plants for table and church decoration.

J. K. N.

### Freaks of Carnations and Picotees.

There are, I think, few plants whose flowers present more curiosities, than these. The first is an abortive attempt of the ovary after fertilisation to produce a second bloom instead of the seed. Soon after hybridisation has taken place the pod swells abnormally, giving apparently promise of a full harvest. The reaper is, however, soon undeceived, for after dividing at the top like an ordinary capsule the calyx bursts, and discloses, not the expected store of seed, but a stunted and unhealthy new flower, sprung as it were from the

ashes of the first. The second is the failure of a plant to make any petals or stamens, but merely a series of green calyxes, rising one above another, like an ear of wheat, crowned as a rule by a pair of styles or horns. Both these freaks are interesting, but not particularly rare.—GROFLE.

### PLANTS CERTIFICATED AT CHISWICK.

**Bedding Pelargoniums.**—Erckmann (Chatrian (Lemoine).—Plant of dwarf compact habit, free flowering; trusses large and compact, of a beautiful crimson-shaded scarlet; very showy. Député Duvaux (Lemoine).—Dwarf habit, free flowering; trusses large, well thrown above the foliage; very dark scarlet. No 9 (Lemoine).—Fine close growing habit, free flowering; trusses large, and well thrown up, of a beautiful clear scarlet; very effective. The following received second class certificates, viz., Louis (Pearson).—Dwarf in habit, and free flowering; trusses and individual flowers large, of a beautiful magenta-scarlet; good. Excelsior (Denny).—Fine dwarf habit, free-flowering; the individual flowers large, of fine form, bright scarlet with distinct white eye; very pretty.

**Single Pelargoniums.**—Dr. Orton (Pearson).—Dwarf and compact in habit, free flowering, the trusses and individual flowers large and of fine form, very dark scarlet, effective for pots. Hettie (Pearson).—Vigorous in habit, free flowering, trusses large, well thrown up on strong footstalks; individual flowers large, of fine rounded form, pleasing magenta shaded scarlet with clear white eye; remarkably fine.

**Double Pelargoniums.**—Sylvia (Pearson).—Dwarf and compact in habit; remarkably free flowering; trusses of medium size, very compact, well thrown above the foliage; flowers beautiful shade of pink; very fine. Hero (Pearson).—Remarkably dwarf in habit; free flowering; trusses large, individual flowers also large and double, of a clear magenta scarlet; very effective. No. 62 (Lemoine).—Vigorous in habit, free flowering, trusses and individual flowers large and full; flowers very clear salmon.

**Ivy-leaved Pelargonium.**—Anna Pfitzer (Lemoine).—Plant of long trailing habit, free flowering; leaves slightly zonate; flowers very large, semi-double, pink, slightly shaded with magenta, the top petals having distinct bands of purple; very distinct and pretty.

**Lantanas in Pots.**—Reveil (Lemoine).—Dwarf and compact in habit, remarkably free flowering, trusses of medium size, bright yellow; very fine. Giselle (Lemoine), tall, vigorous in growth, free flowering, trusses of medium size, composed of two colours, the upper part of the truss pale saffron yellow, shaded with pink, the remaining part very pale pink, with a slight shade of magenta; very pretty.

**Pentstemons.**—Jeanne d'Arc (Lemoine).—Strong and vigorous in habit, free flowering; flowers large and pure white; a great acquisition. Edison (Lemoine).—Strong and vigorous in growth, free flowering; individual flowers large, beautiful dark purple, with distinct white throat, slightly streaked with purple; very fine. Marjolaine (Lemoine).—Strong in habit, free flowering; individual flowers large, dark scarlet on upper side, and having a very distinct white throat; a good variety.

**Begonia.**—Queenie (R.H.S.).—Vigorous in growth and free flowering; flowers large and of good form, of a beautiful magenta-shaded pink; very fine.

**Peas.**—Pride of the Market (Carter & Co.).—A dwarf blue wrinkled Marrow. Robert Fenn (Hurst & Son).—A dwarf wrinkled Marrow. These both received first-class certificates.

**Potatoes.**—Cosmopolitan (Dean).—A large early white kidney. Early Cluster (Dean).—A half round early white Potato; very short haulm. Considered suitable for forcing. These both received first-class certificates, and Lord Mayor (Dean) was greatly approved.



## THE ROCK GARDEN.

AT all times of the year the cultivator of alpine plants needs to keep a watchful eye on his subjects. He may take a round every day and he will find some little, though often very necessary, piece of work to be done. If he does nothing he may often learn much with regard to the circumstances under which plants do or do not thrive that will be for future guidance. But there is much to be done, and especially at this season. Watching the maturation of seeds and collecting them form no inconsiderable part of his duty. In doing this allow me to give a little advice. Take care in gathering seeds, even of the choicest kinds, that you let a few fall to the ground. My experience has proved that frequently when you have failed under the pot-sowing cool-frame system you will find seedlings cropping up about the parents. *Geranium argenteum* is one example among many others I might give of seedlings coming up when they have failed in pots. Seedlings raised in a cool frame may be put out in order to get them well established before winter. This may be done by those who prefer potting them off. We plant as soon as the seedlings are large enough to handle, and when the weather is favourable. There are many advantages attending this plan. You are not restricted as to the number to be pricked out, and better plants are the result. This is a good time also for removing self-sown seedlings, also for dividing useful things which are beginning to occupy too much space.

**Plants in Flower.**—Our Harebells have been very good. While *C. Waldsteiniana* is past, *C. Tenori* remains almost as beautiful as ever. An acquaintance who had seen it (it might have been a small straggling specimen) gave his opinion that it looked very much like a narrow-belled *C. rotundifolia*. I think, however, even in appearance, it is worthy of specific distinction. Its neat habit and arching cymes of pale—not purple—blue are quite characteristic. *C. Raineri* would be a very useful species were not its flowers so fugaceous; still for all that it is a persistent flowerer. *C. isophylla* is another beautiful and not common species. It is stoutish, hairy, very brittle, about 10 in. high, and bears pale blue bowl-shaped flowers abundantly. Though scarcely capable of division, it may be easily increased by means of cuttings. *Erodium cheilan-thifolium* is as yet a very scarce species. It is pretty, and bears out well its specific distinction. If left to itself in a dry sunny position seedlings will be found to appear about it. The Gentians we have in flower now are *G. anvernensis*, *G. Pneumonanthe*, *G. affinis*, and *G. umbellata*. *Callirhoe involucrata* is to all intents and purposes a "dry bog" plant. Other interesting plants growing in sandy peat and doing capitally are the brown-flowered Mullein, *Ianthe bugulifolia*, a plant apparently best cultivated as an annual, though really biennial. Seeds sown in the spring are now flowering, and plants that flowered in the spring are now supplanted by seedlings. About a dozen plants of *Senecio pulcher* are in most perfect health. A seedling of last year withstood the severity of last winter, and now shows 10 main stems upwards of 3 ft. high, of wonderful stoutness, as well as a goodly number of subordinate ones. This year's seedlings will flower, too. Associated with this fine Groundsel are *Spigelia marilandica* and *Rhexia virginica*, also the Caroline, European, and imbricated Grasses of Parnassus. Plants of *Sarracenia flava* which have been out all winter have survived, but are weaker than last year. In company with these bog-loving subjects just named, I may mention that we grow *Androsaces*. The beautiful little *A. helvetica* favoured us with a few flowers last week. *Hedysarum obscurum* is a neat, spiked, magenta-flowered member of the Pea family worth a place on every rock garden. A dry sunny position suits it. *Pelargonium Endlicherianum*, said to be the only hardy one known, got through last winter, and is now finely in flower. It is neat and showy. The three lower petals of each flower are nearly suppressed. *Bellium minus* is dwarfer, and I think prettier than *B. crassi-*

*folium* or *B. bellidioides*. Probably it may be the one Mr. Wood asks after. I may add that in the bog are magnificent specimens of *Spiræa venusta*, about 7 ft. high, *Ligularias*, *Lobelias*, and other plants all in excellent condition.

T. D. HATFIELD.

## SOCIETIES.

## ROYAL HORTICULTURAL SOCIETY.

AT the last meeting of the Royal Horticultural Society the following were the subjects submitted to the scientific committee.

**PEAS ATTACKED BY ERYSIPIA.**—Mr. W. G. Smith exhibited Peas badly attacked by this mildew. The Erysiphe was accompanied by the Oidium its early condition. During dry summers this fungus is frequently so destructive to late Peas near London, that it renders their growth impossible. Mr. Smith also exhibited garden Mint infested with fungi. In this instance it was *Puccinia menthæ*, the same parasite with *Trichobasis labiatarum*.

**EFFECTS OF THE LATE FROST IN BELGIUM.**—Mr. McLachlan described the great destruction that had taken place amongst Conifers, Yews, Box, and fruit trees generally, and which he had seen in that country. A report was about to be drawn up upon the subject.

**LILIUM SPECIOSUM RUBRUM.**—Mr. G. F. Wilson showed leaves decaying apparently from wet, being thus chilled, and then subsequently injured by the heat of the sun. He also showed a fine spike of *Gladiolus Lemoinei*, a hybrid between *G. gandavensis* and *purpureo-auratus*.

**PEAR—FRUIT AND LEAVES DISEASED.**—The Rev. G. Henslow exhibited a Pear in which hypertrophy of the grit had occurred, and which appeared as an efflorescence at certain spots. The Pear leaves were skeletonised by the "slug-larva," or that of the sawfly (*Eriocampa adumbrata*.)

**PROLIFEROUS MIGNONETTE.**—Mr. W. Balchin, of Hassocks Gate, forwarded two fine spikes of his *Reseda odorata prolifera alba*, which received a first-class certificate a short time ago. The spikes were now converted into panicles or large bunches, for in the place of each flower there had issued a branch covered with flowers. Many of these had again given rise to fresh branches, all being profusely covered with double flowers, the small lacinated petals being increased in quantity. The scent was very powerful and much resembled that of Apricots or Peaches. We understand it will be ready for distribution next spring.

**ULEX** covered with web of *Tetranychus lintearius*, a small red mite, was sent by Mr. J. J. Willis, the Laboratory, Rothamstead.

**PLANTS EXHIBITED.**—From Messrs. Veitch, Ixora Burbridge, with splendid trusses of scarlet flowers having the peculiarity of blossoming some 6 in. or 8 in. down the stem, thereby producing a large mass of flowers; *Lindenia nivalis*, *Crinum Verschaffeltianum*, a large handsome plant with spreading leaves striped with white; *Rhododendron* Duchess of Connaught, a fine new hybrid form of the *jasminiflorum* section involving three parentages.

## LATE NOTES AND QUESTIONS.

**Monstrous Lily Stems.** (*South Italy*).—Stem appears to be slightly fasciated with a number of stem bulbils forming.—GEORGE F. WILSON.

**Tommy O.**—Very amusing, but if we had your address we should have returned the MSS. for an addition; a funny boy writing verses on Funkia would have been aided by knowing that there is a *Funkia coriacea* in common cultivation.

**Cultivating Ginger.**—Ginger is easily grown in a stove, but its culture in any commercial sense has, of course, not been attempted in this country. Perhaps some of our readers may inform our correspondent how to soften ginger for preserving.

**Odontoglossum Schleiperianum.**—I have had a plant of this four years, and though my gardener has suc-

ceeded in getting it to show flower, the flowers turn yellow, shrivel, and drop off the stem. The plant has been tried in a cool and an intermediate house, water given liberally and withheld, but without success. How am I to proceed with it in order to get it to flower?—G. S.

**Red Horse Chestnut Leaves Injured.**—*E. H. Windsor*. From the appearance of the leaves, I should imagine they have been attacked by a caterpillar, but it is impossible to say, without something further to guide me, what the caterpillar may be. I should suggest that some of the branches of the trees should be well shaken over an open umbrella or sheet, when the author of the mischief will probably be discovered. I shall be happy to name the caterpillar if it is forwarded to me.—G. S. S.

**Names of Plants.**—*D. E. S. (Wemyss)*.—*Eryngium alpinum*.—*A. Ward*. *Potentilla anserina* (Silver Weed).—*Mac.*—1, *Achillea Ptarmica* fl.-pl.; 2, *Antennaria margaritacea*.—*W. M. (Dublin)*.—*Impatiens glandulifera*.—*J. H. Newburgh*.—*Ipomopsis elegans*.—*M. A. (Hall Court)*.—A species of *Potamogeton*, but we cannot name correctly, as the specimen is so much withered.—*Mark de L.* *Chrysanthemum segetum*.—*R. A. (Forde Abbey)*.—*Cupressus macrocarpa*.—*J. Chester*.—*Odontoglossum Lawrenceanum*.—*X. Y. Z.*—*Whitlavia grandiflora*.—*Henry Henn*.—*Hypericum Elodes*; other next week.—*Rocks*.—*Chelone barbata*.—*Carnforth*.—Blue, *Echium violaceum*; yellow, *Hypericum tetraepetrum*; Lily, *Lilium Martagon*, and *Sanicula europæa*.—*Heartsease*.—*Myosotis dissitiflora*; the white flower, *Campanula persicifolia alba*.—*L. O. G. Smith*.—*Acineta Humboldtii*.—*Summerhill*. *Eryngium alpinum*.—*Rev T. J. Tarde*.—*Russelia juncea*.

## OBITUARY.

CHARLES SQUIRES, for twenty-two years head gardener at Heywood House, Wilts, died the other day after a long illness, aged sixty-two years. He was for many years an exhibitor at the Trowbridge and Bath horticultural shows, and was distinguished for his excellent Grapes, with which he invariably gained the first prize.

DIED on 27th ult., at his residence, Thames Ditton, Mr. Hewett Cottrell Watson. He was a son of Mr. Holland Watson, a Lancashire magistrate, of antiquarian proclivities, and was born in 1804. He completed his education at Edinburgh University, where he became acquainted with George and Andrew Combe. As a consequence of this acquaintance he became editor of the *Phrenological Journal*, but soon afterwards, finding that he had given great annoyance to the most ardent phrenologists by showing that their definitions were inadequate and misleading, he resigned the appointment. From that time he applied himself in a great measure to botanical science. His principal works, taken in chronological order, are "Outlines of the Geographical Distribution of British Plants" (1832), "Remarks on the Geographical Distribution of British Plants" (1835), the "New Botanist's Guide" (1835-7), "Statistics of Phrenology" (1836), "Cybele Britannica" (1847-59), and the "Compendium of the Cybele Britannica" (1870).

WE have to announce the death of Mr. W. Sharpe, which took place on the 29th ult. at Pitfour Castle Gardens, Glencarse, Perth. Mr. Sharpe was in his 77th year. In his early years he served in the gardens of Ochertyre, Crieff, the Edinburgh Experimental Gardens (under Mr. James Barnett), long since incorporated with the Royal Botanic Gardens; also at Lexmouth and Edmiston. He went to Pitfour in 1834, where he became a very successful competitor at the Royal Caledonian Society's shows held at Perth, carrying off the Society's medal three years running, viz., for collection of fruit one season, flowers next, and vegetables following, besides numerous minor points. Dahlias were his leading hobby for some time, of which he raised some good ones in his time, of which Mr. Turner, of Slough, and others were purchasers; of these, Sir John Richardson and the Knight of Nova Scotia were presumably the best. In 1859, Mr. Sharpe was engaged for by the late Earl of Eglinton, in whose service he enjoyed the greatest confidence. Some time after the death of the late Earl, Mr. Sharpe retired, but was again sought after by his old employer, Sir John Steward Richardson, Bart., of Pitfour. Mr. Sharpe was very fond of alpine and herbaceous plants, in which Pitfour is somewhat rich.



No. 508. SATURDAY, AUG. 13, 1887. Vol. XX

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare*.

## GARDEN THOUGHTS.

IN the last six months I have seen a large number of gardens from one end of the land right unto the other, from Cornwall to Yorkshire—gardens magnificent and gardens mean—wild gardens (none so charming as Mr. Boscawen's at Lamorran) and tame gardens; oh, so tame! so scrupulously done to scale and pattern, so shaven and shorn, like the ecclesiastic in the house that Jack built, so raked and rolled, so tied and trim, that they looked more like schools awaiting the government inspector than happy children at play, and only a strong sense of my duty towards my neighbour restrained me from a cheer when I found a Sowthistle, and prevented me from brandishing it under his nose. I have seen spring gardens (*Belvoir La Belle, par excellence*) and summer gardens, some laid out with a natural grace, fair and fragrant with hardy shrubs and flowers, annual, biennial, perennial, and some of geometrical design, brilliant with those most tender plants, which cannot abide our frosts, artistic, and attractive, and appropriate, where the site suggests them, as surroundings, for example, to a stately terraced mansion, and where a refined taste selects and groups them.

But, speaking of these gardens generally, I was surprised and disappointed not to find in a large proportion, even where there was evidently no lack of information or of means, those more recent additions to the modes and to the materials of horticulture which have enlarged our happiness and enriched our stores. No gardener, for example, has made experiments, however small, in the formation of a rock garden and the culture of alpine plants without bringing a new gladness to himself and others. Of course, when I speak of a gardener I mean a man who utilises his eyes and his ears; who in forming a rockery does not set himself to rectify and improve Nature by putting stones on end which she had placed lengthwise; who does not take it for granted that because plants grow out of rocks they have no soil within for their roots; who does not select a clay soil for flowers which repose in sand, nor a shady place for those which only thrive in sunshine; does not set a giant amid dwarfs and allow him to overlap them all (ah me, have I not seen a variegated Periwinkle, in cruel alliance with some alpine Strawberries, tyrannically appropriating a large space which had once a choice and varied assortment?), but thinks beforehand and watches always. To such a man the introduction of the alpine garden, with its early and exquisite diversities of form and colour, is a new and large delight. It is a new language to a clever linguist, wherein, when he has learned it from A to Z (from *Anemone* to *Zephyranthes*), he finds poetry sublime and sweet. Oh! those welcome, winsome harbingers of spring, those *Anemones*—*apennina*, *blanda*, *fulgens*, *Robinsoniana*, and the glowing double crimson; those heralds in their beautiful mantles; those cohorts gleaming with purple and gold; those sheets of *Aubrietia*, *Arabis*, *Iberis*; those white and roseate cascades of *Phlox Nelsoni* and *subulata*. Oh! those glowing *Gentians*, that *Lithospermum* so intensely, that *Primula* so softly blue; those *Auriculas*, *Polyanthuses*, *Oxlips* powdered with gold and silver; that *Dianthus* gleaming in the dull, hard day like the red star of a rocket in the dark-

ness. Oh! those *Sedums*, *Saxifrages*, *Semprevivums*, and other jewels, countless as the harlequin comfits upon a Christmas cake; and yet you rarely find them even where there is the very spot for a rock garden, and stone, and sand, and peat are at hand.

Some seem to think that these plants are delicate as to constitution and difficult as to culture, and that because they are called alpine, they will only flourish on the high places of the earth. Few plants have more vitality, are transferred more successfully, thrive and spread more quickly. There are proofs by the dozen in the rock garden here which were brought by my wife from the mountains of Southern France and Northern Italy, which were many days on their journey hither, sometimes travelling under great disadvantages, at the bottom of luncheon baskets and in other occult localities, lest they should meet the eye of the douanier on the lookout for the *Phylloxera*, but are now as happy in our humble vale as on the banks of the Riviera, or the rocks of the Simplon Pass. I need hardly suggest the inference that, carefully prepared at the nurseries, or given by some friendly neighbour, placed with due regard to site and soil, by those who have seen, heard, or read of the habits of these lovely plants, their success is certain.

And the alpine garden has, in addition, this grand claim upon the admiration of those who study in horticulture, as we should in every thing else, the greatest happiness of the greatest number—it may be enjoyed by all. The rich man, if he has the desire and the good taste, may introduce his visitor into a part of his spacious grounds, where in miniature "Hills peep o'er hills, and Alps on Alps arise," where every outline and tint, every form of vegetation, transports them suddenly to Switzerland. And the poor man, with half-a-dozen big stones, naturally disposed, a few barrows of sandy loam, and a few "bits of things," which he has saved up to buy, or has received from that bounty which, I rejoice to know, is as common as it is honourable with our brothers of the spade, may have a choice little collection of varied beauty, easily managed, and always interesting.

How is it that in so many large gardens, having able gardeners, we look in vain for those lovely varieties of the *Clematis*, for which we are chiefly indebted to Mr. Jackman, of Woking, which are perfectly hardy, luxuriant as they are beautiful both in foliage and flower, which bloom, some in spring, some in summer, some in autumn, and which, covering walls or banks with their exquisite hues, pure white, silvery, pearl and opal, violet, crimson, purple, blue, and mauve, are among the most attractive features of this most attractive garden? Wherever they grow, on the bower or in the border, they are graceful ornaments; and to those who study sensational effects, I commend a plant of purple Jackman, intermixing its flowers with the silver foliage of *Acer Negundo variegatum*, or with the bright yellow leaves of the Golden Elder.

What is prettier in the early-spring tide than the pink and white blossoms of *Pyrus Malus floribunda* admirably pictured in THE GARDEN (Vol. X., p. 384), bright as the smile of childhood, and when they are followed by their charming tiny Apples, reminding us of our own, suggesting a noble centre-piece for the dessert of that doll's dinner party, at which the Currants were Grapes, and a large Gooseberry performed as Pineapple, and the wedding-cake

was a gingerbread dipped in flour; and one doll, I remember, was supposed to have indulged too freely in the pleasures of the table, and was put to bed in a disgraceful state of plethora.

No single plant in my garden, has said "Siste, viator," more imperatively, and been obeyed more immediately, than *Cypripedium spectabile*, a bush of beauty, with its large white and roseate slippers. It is unnecessary to tell the readers of THE GARDEN that the survivors of our two last winters are henceforth and for ever to be accounted hardy, and this American Orchid, the Moccasin flower, has been exposed to all their bitterness. Will any of those readers who have tried other varieties of this family *al fresco* communicate the results? Can they tell us concerning *acaule*, *arietinum*, *guttatum*, *macranthum*, *montanum*, *occidentale*, *pubescens*, or any other said to be hardy? My plant of *C. spectabile* grows in peat.

S. R. II.

## GARDEN LABELS.

I HAVE read in some of the late numbers of THE GARDEN several interesting articles on garden labels, including the one by Mr. Brockbank (p. 143). Having tried many different kinds of labels for flowers, such as alpine and herbaceous plants, Roses, &c., and having very great objections to labels which attract the eye or such as can be readily seen amongst flowers in the border or on the rockery, I find no label so suitable as a zinc one, 6 in. in length by 1 in. in breadth, and pointed at one end, having the name of the plant written upon it with indelible ink for zinc labels, prepared by Fowler & Co., 18, Finsbury Street, London. I get the plumber to cut me out 500 labels of the size above mentioned at a time, using for the purpose bright untarnished zinc, and when the labels have been cut out they are placed in a dry, close, wooden box for use as may be required. When labels are needed for the flower borders or rockery, I take the requisite quantity out of the box, and while they are bright I write with a sharp quill the names of the plants upon them, commencing the writing as close to the top of the label as possible, and writing towards the end to be inserted in the ground. When the writing becomes dry, which it does in a minute or two, the labels are inserted  $4\frac{1}{2}$  in. into the ground near the plants, leaving only  $1\frac{1}{2}$  in. exposed above the soil. The result is that the labels always remain where I place them; they never decay; the writing never becomes illegible, and, what to me is of the greatest importance, they cannot be seen unless one looks for them. For Roses I use an oval-headed label, printing the name with the indelible ink, and when dry varnishing the face with spirit varnish. A very suitable size I find to be 6 in. long and 1 in. broad with the oval part at the top  $2\frac{1}{2}$  in. long by 1 in. broad. If the names are clearly printed they can be read without the necessity of stooping, and yet the labels are not in any way conspicuous in a bed of Roses on the lawn.

Berwickshire.

G. M.

## THE GARDENS AT EDGE HALL.

As I see a reference to my name on the part of Mr. Wolley Dod in your paper of the 6th August, I can most readily verify the statements he has made; indeed, I thought some things had been rather under-stated than otherwise by him. Some of the Lilies, I fancy, must have exceeded the height he has given. At any rate, I quite well remember how some of the *Inulas*, and *Centaurea macrocephala*, and *Malleins*, and *Sun-*



flowers quite astonished me by the prodigious growth they had made. I can only think of pigmies in the hotter and drier regions of the south when I call to mind the stature and luxuriant growth of their brethren in the north. But Mr. Dod's garden is remarkable for much more than this. The fine old family mansion, the well-covered and well-made rockeries on either side of the approach to the house, the ample and verdant lawns (the like to which we know nothing of in the Isle of Wight at this time of the year), the abundance of valuable and well-grown plants in the borders, the outspread of most pleasant country on one side with the Welsh mountains for a background on the east—all this and much more besides give objects of interest which will not soon be forgotten.

I am still away from home, and I have not my notes here to refer to, but the most cursory attention must show any one how much study and loving care he has given to his garden. Primulas, Campanulas, Sedums, Saxifrages, Drabas, and a host of other things are here represented to the full, and there was one plant which I had never seen or heard of before—*Calceolaria alpina*—which very greatly delighted me. *Meconopsis nepalensis* does well at Edge Hall, and I there made acquaintance with *Aster Townshendi*, which it would be difficult to over-praise. But I have no idea of giving a description, or even an outline, of Mr. Wolley Dod's treasures. I only put my pen to paper to say that though I used no measuring tape for the purpose, I feel quite sure that the growth of many plants in his garden is in excess of the average, and I shall wonder if the open invitation which he has given in your paper last week is not largely made use of.

In addition to showing me everything that was to be seen at Edge Hall, Mr. Dod kindly took me over Dickson's nursery at Chester as well. For the most part what I saw there I had seen before in the south, though it is always interesting to meet with old friends in new and altered conditions; but one thing formed a striking exception to this—I have always considered that *Lilium candidum* is the queen of all the tribe, and I think so still, but *Lilium candidum speciosum* is a queen among queens. At first I could not quite make it out, but its beauty is apparent at once, and it has another qualification which is worthy of note. It is of a late flowering nature, and you may have the white Lily with you in all its glory for a long time if you add this to the common sort. Altogether, I felt very glad that a word spoken in Mr. Wilson's garden at Wisley led me to bend my steps towards Cheshire. Edge Hall is rather too far from London, even to become commonly known to the devotees of the art of gardening, but I feel sure that no one who follows my example, and treads in my steps, will ever think his time or his trouble thrown away.

HENRY EWBANK.

#### ANOTHER GARDENER'S HOLIDAY.

IN common no doubt with most of your readers, I was much pleased with your recent genial account of a real gardener's holiday at Cauntton Manor. The host, the guests, the sights, the conversation all seemed perfect, but the numbers to share them together were necessarily limited. Now, however, an event is near at hand in which every gardener throughout the country may participate. At Manchester there is room enough for us, and it ought to be possible to make the greatest horticultural event of this or perhaps any past year the occasion of a general holiday for the gardeners of the three kingdoms. Under the able management of Mr. Findlay, the show seems to grow in size and importance daily. So

much is this the case, that it has been needful to issue a third edition of the schedule of prizes, and the demand for them still continues. Over £2000 are offered for prizes for horticultural products, and so full and complete are the arrangements, that nothing seems to be left out. Complaints are often made that we have no schools of horticulture in this country. The charge is literally true, though, in reality, such comprehensive and inclusive exhibitions as that to be held in the Botanic Gardens at Manchester are the best of all schools in which to learn the art of gardening. To others the finished products on view at such exhibitions may bring feelings of mere bewilderment or wonder; but to practical cultivators familiar with the details of horticulture, such great shows are like an open book, in which they read the secrets as well as see the proofs of the highest success. The stimulus which they afford to diligence and invention are also of the highest importance. So valuable are these shows in this respect, that I venture to assert that no employer could at the present moment make a more profitable investment than the purchase of a return ticket to Manchester for his gardener. It is a mistake to suppose that such trials make men discontented at home. Quite the contrary; it only stirs ambition to have every garden more worthy and capable of conferring pleasure and contentment on all concerned. But gardeners also deserve a holiday altogether apart from educational or utilitarian views. The two last winters have strained the ability and power of endurance of most of us to the uttermost. No one who has not tried it knows what it is to fight zero almost single-handed while all the world is comfortably asleep. Amid the friendly greetings and genial atmosphere of such meetings as that about to be held at Manchester, care and suffering are forgotten, and gardeners by the thousand become the happiest of men. The very nature of our business isolates us the one from the other by necessity. Hence these reunions, all too few, are the more valued. Many of us look back to the great shows of our time as the red-letter days of our lives. On these friendships were framed or renewed that have proved helpful to many of us. I therefore trust that this great show may prove the longest and the most enjoyable gardeners' holiday that has ever been held in this or any other country. Manchester is central and easily accessible, and its surroundings abound in fine collections of Orchids and other plants. The beautiful seats of Worsley, Tatton, and Haigh Hall, belonging respectively to the Earl of Ellesmere, Lord Egerton, and the Earl of Crawford, are all within easy distance by rail; while for those who can command another day or so, Belvoir and the Palace of the Peak may be reached easily from Manchester. But the show itself is likely to demand several days to see it thoroughly and learn its lessons well.

D. T. FISH.

#### A GARDEN PARTY.

FROM the point of view of the garden, a delightful garden party was that given by Mr. and Mrs. Spencer Wells in their garden at Hampstead to the members of the Medical Congress last Saturday. We say from a garden point of view, because the disposition of the grounds being very beautiful, favoured in a singular way the happiness of the party. There being a perfect lawn in front of the house without any impedimenta in the way of beds, walls, &c., the easy grouping and free movement of the many guests became possible. In their turn the guests lent animation and colour to the landscape. By quietly going round the garden in quest of views out of, as well as in the place, pictures were seen here and there such as one would like to secure and fix for ever. The afternoon was a lovely one, and the landscape to the north of London tender and beautiful, the pictures being made possible by the foreground of lawn and fine groups of trees. We

must come back to lawns again, but while making the change from the terraced parterre double the number of flower beds elsewhere.

#### AMONG THE PEAS.

I CANNOT agree with Mr. Nisbet that Telegraph and Telephone are one and the same Pea. I have grown them from the first; in fact, I made the discovery as to Telephone contemporaneously with Messrs. Carter. When Telephone was advertised I had my Eureka ready to sow, viz., the selected wrinkled Peas from the pods of Telegraph, so that the Peas, doubtless, Culverwell's. I sowed my seed side by side with Telephone obtained from Messrs. Carter, and they came exactly alike—I was going to say as much alike as two Peas, but it appears that henceforth the old saying must be abandoned, as but for these sports in the same pods of Peas, we should not have so many new varieties. The differences are as follows: The haulm and Peas of Telephone are paler in colour than Telegraph; the one is decidedly wrinkled, the other smooth; the one is sweeter and superior in flavour to the other, and the wrinkled Pea cooks quicker than Telegraph. Both, doubtless, are excellent sorts, but there can be no question as to the superiority of Telephone, or of its dissimilarity to Telegraph. I have never observed, however, that the Peas in Telephone are, as it were, tumbling over one another, or trying to make two rows in the same pod in their effort to find space, but, on the contrary, I am inclined to believe that Telegraph is the fuller pod of the two.

Leaving the above, I am glad to note that we have three grand acquisitions in dwarf Peas. In Carter's Stratagem, we have indeed a Pea of great excellence; haulm about 2 feet high, covered with pods of immense size, containing nine or ten large Peas of first-rate flavour. I have three fine rows, and after making a trial of their quality, I am saving every pod for seed. Of Laxton's John Bull, I am enabled to speak in the highest terms; through the courtesy of Mr. Laxton I have a nice little row of them. The pods are very long, many of them as long or longer than Stratagem, slightly curved, and packed closely with from nine to eleven large Peas—perhaps the fullest pod of the three sorts under consideration. I have not had a boiling of them, as I am anxious to save every seed, but from their flavour in the raw state, I have no doubt as to the result. Most, if not all, of Mr. Laxton's Peas are of fine flavour. The height of haulm is reported to be about 3 feet, but we always make a special preparation of the ground for Peas, and with me it is little more than 2 feet high and covered with pods from top to bottom.

Then, again, there is Carter's Pride of the Market, another dwarf about 2 feet high; the pods of a rich dark colour, almost, if not quite, as long as Stratagem, and containing from eight to ten large Peas of delicious flavour. The constitution is reported to be robust, but whether the fault of the soil or not I cannot say—it has grown unevenly and only done fairly well with me in this respect. I shall change the soil another year and add a little lime, which all leguminous plants require (none more than the Pea tribe), as I lean to the belief that the constitution of the plant is good; and if so, it will certainly, when better known, be a most excellent variety for market purposes, as indeed all three of these dwarfs should be. Culverwell's Giant Marrow, as a tall Pea, is a marvel, and must be fully tried for the main crop. Pods, remarkably handsome, from 5 in. to 5½ in. long, many of them containing from ten to thirteen Peas of grand quality. It is scarcely fair to speak of any production in any terms of dispraise after only a first trial, and seasons, soil, and



cultivation should all be taken into account. The pods of this variety (haulm some 6 feet high) grow nearer the bottom than in the case of most tall Peas, and being so large and numerous, I suspect they tax the energies of the plant very much, for some of the pods rattle as though not well filled. However this may be (and it may be different in a less dry season), it is a Pea which must be grown, and especially in large establishments where room and stakes are of no consequence.

Day's Early Sunrise, I am sorry to say, has disappointed me. I sowed it with Kentish Invicta, and gathered a very small boiling ten days after the Kentish Invicta came in. The bulk of the crop came in with my main crop Peas, and there are still many pods (Aug. 5) not yet ripe. The pods, too, were unevenly filled. The Peas are an advance in size, but tame in flavour. The remarks made above as to first trials also apply in some measure to this variety, as I notice that in some quarters it has been highly praised. I fear, however, that the word "early" will have to be struck out. I have tried Mr. Iggulden's method of growing tall and dwarf Peas together. His theory is that as the tall varieties generally commence blooming some 3 ft. from the ground, a dwarf cropping kind sowed on each side of the main crop fills up the gap, thus giving Peas from top to bottom of the haulm, and growing as it were two crops on the same ground and saving stakes. This plan also moderates the exuberance of the tall varieties without sensibly diminishing the crop.

Mr. Iggulden's suggestions deserve more extended trial, and it appears to me that success in a great measure depends on the dwarf kinds selected. Stratagem and Pride of the Market failed with me, but Yorkshire Hero and Laxton's Omega appear to be much better sorts for the purpose. This is a matter for individual experience. I had an excellent crop of Telephone and Yorkshire Hero in the same row, and, being very dissimilar, they were easily gathered without mixing. Omega I also recommend to be grown with any tall main crop Pea, and possibly (though I have not tried) some early kind such as Kentish Invicta or Ringleader might also succeed.

W. RODEN, M.D.

## MUSHROOM CULTURE.

### A SUGGESTION.

AMIDST the wail of agricultural and horticultural depression, does not the humiliating thought often occur that thousands of pounds of English money needlessly finds its ways into the pockets of our neighbouring French gardeners for Mushrooms when it is well known that we can grow as good or a better article at home, especially judging from the withered, skinny-looking material sold in our shops as Mushrooms, and generally fetching from 1s. 6d. to 2s. per lb? Looking at the successful practice of English gardeners in growing Mushrooms in private places, and to the quality and demand (which is insatiable) for English Mushrooms in all large towns at better prices than French, it does seem surprising that one Mushroom manufactory or more has not been established in every town in England where a large number of horses are kept up and fed with corn. I cannot believe that there are not in most large towns abundant facilities in the shape of cellars and underground chambers admirably adapted for the growth of Mushrooms which are now empty and bringing in no returns, and which by advertising for might be rented at a nominal figure. I calculate that every cart-load of horse droppings made into Mushroom beds should return from 20s. to 60s. value in Mushrooms. Perhaps some one can reckon up how much cash London alone at this rate could return annually. I will not make the attempt. The sum would be enormous. Looking

at the capacity of our other large towns to supply the same material and facilities in proportion to their size, I cannot but believe that some enterprising horticulturists before long will step in and stop this waste of national food and money, and that Mushrooms will not be, as now, a luxury for the few only, but as food for the many.

Drayton Manor Gardens. OWEN THOMAS.

## EDITOR'S TABLE.

**PYRUS HOSTI.**—This new flowering tree comes to us bearing large and bright fruit from Messrs. Osborn, of Fulham. So distinct and pretty a tree is well worth a good place. We propose to figure it for THE GARDEN. The fruit resembles that of the White Beam tree.

**THE YELLOW CALLA** (*Richardia hastata*).—Smaller than the smallest condition of the common Calla, but very good otherwise. One would like to see it grown in the best manner by some of our good growers. The dark centre makes the colour the more interesting. From Messrs. Carter.

**MONTBRETIA ROSEA.**—This plant, which seems a close ally of *M. Pottsi*, comes to us from Messrs. Backhouse. It seems a larger flower and different in shape from the deep-coloured *M. Pottsi*, which Messrs. Backhouse also grow abundantly. What the value of either species is in gardens is as yet doubtful.

**HEMANTHUS KATHERINÆ.**—A most brilliant and distinct Cape bulb from Messrs. Carter, which one wishes one could worthily represent in colour. The stamens in this for once seem to surpass in vigour and colour the petals, and this gives a singular effect. The colour is vivid and the heads very large—great, bristling, coral hedgehogs!

**BOUVARDIA CORYMBIFLORA.**—An ivory-white nosegay of this comes from Messrs. Beckwith, of Tottenham, who grow it so well. The tube of the flower is over 2 in. long, and a few sprays put together are very effective as cut flowers. The club-shaped buds are very bold, and strikingly contrast with the open star-like flowers. It has an agreeable and rather strong odour.

**DISAS AT YORK.**—From the York Nurseries comes a splendid bloom of the Cape Disa (*D. grandiflora*), one of the most brilliant of all Orchids. The flower sent represents that of a fine variety, the colour of the petals being very bright, and the boat-like lip more conspicuously marked than that of the ordinary form. It is the nearest approach to the true form of *D. Barrelli* that we have seen since it used to be grown so finely at Dangstein, but which now, unfortunately, appears to be almost lost.

**CROWN DAISIES** (*Chrysanthemum coronarium*).—A lady from Devon sends us a charming little series of these, very bright and pretty. They are varieties of the plant of which Mr. Kingsmill brought us this year, the single form from Algeria, and that single form is a very pretty plant and worth growing. The more showy coloured forms are known by the name of *C. Burridgianum*, and are well worth a place among annual flowers, but the double ones do not seem to us worth growing.

**SPARAXIS PULCHERRIMA.**—Referring to the beautiful Bamboo-like flowering shoots of this plant sent us last week, Mr. Charles Smith, of the Caledonian Nursery, Guernsey, writes, "We regret we had not sent it before, as many

of the spikes are past their best. We were, we believe, the first to flower it in Europe. The shoots then measured 9½ ft.; they are shorter this year, we presume owing to the very dry June and July." The specimens sent were so tall, that to hear of taller ones still is surprising.

**MONSTERA DELICIOSA.**—This noble Arum seems strange in all ways—its curious edible fruit, its perforated leaves, and lastly, the club-like unopened flowers, which would afford a model for a new addition to the many weapons of offence possessed by the natives of the Friendly Islands. It is really valuable in room decoration, the solid looking creamy yellow mass being about 7 in. long, on a thick stem. In colour it is very good. It comes from Linton.

**THE PERUVIAN DAFFODIL** (*Ismene Amancaes*) is a beautiful and singular flower. "We grow it out of doors in beds in summer; it flowers well in this way, and we take up the bulbs in winter. It is the flower used so much by the Peruvians on the festival of Amancaes." So writes Mr. Horsman, of the New Plant Company at Colchester, who sends us the specimens. They, however, do not possess the vigour or grace which one would expect from such a plant, which probably requires a warm, moist house in this country.

**A NEW GENTIANA** (*G. arvernensis*).—We are accustomed to associate the Gentian with the glories of the spring or early summer, for these are the times when one must go to their native homes to see them in all their vivid blue beauty. But now in our gardens, lately enriched with many of the autumn Croci, we also see a number of autumn-blooming species of Gentians, this being one of the best of the rock Gentians. Messrs. Backhouse speak of it as a fine plant, which it seems to be, and think it will be strong enough to figure in another year.

**BIGNONIA JASMINOIDES.**—This graceful old greenhouse climber comes to us from Mr. Groom, and with it *Bignonia grandiflora*, both of which he describes as valuable for the roof of a conservatory. But why should not *B. grandiflora* be grown out of doors in Kent as a wall plant, or on a sunny bank, or tumbling over the edge of a sunk fence? It is a common plant abroad in such positions, and we believe it is often so grown with us, but what its fate may have been in recent years we do not know. In the late M. Souche's garden at Fontainebleau a brilliant effect was afforded by this plant climbing up the wall among *Wistaria*.

**CATALPA BLOSSOMS.**—This most precious tree bears flowers which are often compared to Gloxinias, but they are really more delicate and, when closely examined, more beautiful. The late flowering of the tree makes it, apart from its fine form and abundant bloom, worthy our best attention as regards planting and choice of position. It seems to have a peculiar capacity for withstanding city smoke and dust, as it may be seen blooming in some of our London squares, and even by such a busy thoroughfare as the Marylebone Road. This is why the advent of the new kind so much talked of in America as being hardier and handsomer than the old is so much to be desired. Have any of our readers yet flowered it?

**LILIUM AURATUM.**—Who shall paint our Lilies as they are, with all their grandeur of form and glory of colour? Mr. G. F. Wilson came in the other day, bearing a massive head of *Lilium auratum*, which a great artist might have been proud to paint. The poor, stiff,



flat, botanical drawing will never do. A branch of art yet to be developed, and affording infinite possibility of beautiful work of the highest class, is that of flower and garden painting in its nobler aspects. A sketch of the white Lily—this old and much loved inhabitant of our gardens—may occasionally be seen, a picture showing its beauty rarely. We have never seen anything worthily done of the superb Lilies that are now in our gardens, though a picture of the large red Poppies, lately done by Alfred Parsons, suggests what fine subjects the Lilies would form.

**SEDUM TELEPHIUM.**—The Orpine is sent to us with one of its allies, but though handsome and bold in a wild state often, we have never seen it good in gardens. Along the top of a bank, or a wall in Wales or in one of the western counties, or even among Grass by a stony brook, one can enjoy it, but in gardens it seems to have a weary look, and is, of course, beaten hollow by the fine Japanese *Sedum spectabile*.

**LAVENDER.**—It is well that Lavender grows as well on the dry Surrey hills as it does in its native home. A long and healthy bundle from Munstead refreshes one with its bracing pleasant odour after much dissipation in the way of enormous Lilies, which fill rooms with an overpowering sickly scent in a minute. We want more Lavender in our gardens. One often sees a spot where a hedge of it would not be amiss.

**A FLORAL CERBERUS.**—At last somebody "has been and gone and done it," as cockney boys say. Some unhappy man has invented a double Snapdragon, which by some mischance has strayed into Mr. Stevens' collection, so rich in subjects of great interest. Some of the flowers give one a capital idea of what the three-headed dog must have been. It is about the most hideous and the most confused thing in form we have seen in the shape of a flower!

**SEA LAVENDERS (Statice).**—The broad-leaved *Statice latifolia* is now in bloom, and sent by various friends. Mr. Stevens sends one of those pink or red-flowered kinds which, though interesting, do not seem to have become established in our gardens, and yet on warm soils we have often been struck with their beauty. This is called *S. atrosanguinea*, but those we have known best are *S. tatarica* and *S. speciosa*. *S. latifolia* is the finest of the family. It is used effectively on the lawn and in the flower garden at Linton.

**LILIES FROM COLCHESTER.**—From the New Plant and Bulb Company come flowers of the rare *Lilium cordifolium*, which is similar, but much inferior, to *L. giganteum*. The flowers, which are large, are greenish-white, without the deep red markings so peculiar to *L. giganteum*; also *L. longiflorum albo-marginatum*. The variety has silvery-edged leaves, and flowers quite as fine as those of the typical kind. *Ismene Amancaes* also comes with these Lilies. It was gathered from the open ground, and is a very fair specimen considering the circumstances.

**SCARLET LOBELIAS.**—Interesting specimens of these come from Mr. Smith, of Newry, the very man we look to to work up the subjects they suggest. There is nothing in the whole range of our garden treasures more valuable than their spikes of showy flowers when well grown and well placed. But we have something to learn as to their difference, and probably

something to recover as regards lost kinds. We certainly have one magnificent kind, but there are others good, and Mr. Smith sends what appears to us to be the true *cardinalis* (see his note elsewhere) as well as what is commonly grown as such. There is rather a poor race of hybrids between *Lobelia syphilitica* and the red kinds, but what we want to know is, what and where are the finer varieties and species of the tall scarlet Lobelias? Are there any of importance, and any more to come from America?

**CEANOETHUS BLOSSOMS.**—The delicate blue of these bushes is always welcome and always distinct among other flowers, reminding one pleasantly of the glowing constant sun of the foothills of the Californian mountains, where these shrubs form many thickets and half cover the land. One most striking species, I remember, trailed rigidly over the ground, a dense glossy carpet, never rising above it, whereas generally the *Ceanothuses* form bushes. I often wondered this species had not been introduced. It inhabits cold places, and would be to us quite a new type of rock shrub, the shoots determinedly marching on over the ground, never caring to raise their points. Recent winters have been very hard on cultivated kinds which used to grow well enough to cover two-storeyed houses about London. Still we must not give them up, and it would be well worth while finding out some of the hardiest kinds. Perhaps some of our American friends can tell us.

**MAGNOLIA GRANDIFLORA.**—Among the many garden advantages of Southern England is that of being able to grow well this noblest of evergreen trees, which, however, only shows its tree character in a fairer climate than ours. Still we doubt if Florida could have sent us fairer flowers than have just come to us from Lady Holmesdale's garden at Linton—great creamy cups 9 in. across; only in Kent it wants more care than need be given it in Touraine or in Louisiana; it is carefully trained against the house which it now adorns with hundreds of flowers and handsome glossy foliage. Occasionally one sees this tree as a standard in England, and sometimes on warm soils. It seems to do pretty well in this way, but one wants to get a little south of Paris before it can be depended upon to form a handsome pyramidal tree, and even there we believe it has suffered during recent years. The variety sent from Linton is the Exmouth one.

## THE GARDEN IN THE HOUSE.

### FLOWERS FOR VASES.

I QUITE agree with "F. W. B." (p. 128) that one of the greatest faults in arranging flowers in vases is overcrowding. It often seems as if an attempt were made to crush the beauty of the garden into a single vase or basket, the result being that little or no beauty is seen; for if it be true, as it is, "that beauty unadorned is adorned the most," it is equally true that beauty itself may be crushed and semi-deformed. Overcrowding is but another name for hiding up or concealing, and not seldom three parts out of four or nine out of ten is hidden up or concealed in our floral arrangements. We go to considerable expense to purchase vases, glasses, &c., and cultivate flowers, and then take great pains to lessen or hide their beauty in disposing of them to the best effect. Next to overcrowding, overmixing is the weakest feature in most floral decorations. Our flower artists generally proceed on the assumption that Nature made but few or no plants strong enough to stand alone. Even "F. W. B." appears to mix with considerable freedom in the example he

gives us on p. 128. Four spikes of *Gladiolus*, three of *Funkia*, one flower of *Lilium longiflorum*, two slender sprays of *Asparagus*, the whole resting on three leaves of *Plantain Lily*, is a rather profuse mixture of rather incongruous elements for a small vase 3 in. across and 6 in. high. It is difficult to see how your correspondent manages to get them all in without considerable overcrowding. One leaf of my *Funkia ovata* would have one end of it resting on the table in such a vase to say nothing about three, and the single flower of *Lily* must needs make the vase lopsided, and so probably more artistic. I should, however, have the vase furnished with the *Gladiolus* only, verdurised with some of their smaller leaves. Beautiful as the leaves of *Funkias* are, they are only fit for very large vases, and even in such should be sparingly used; but my object in writing is not to criticise your correspondents' vase, but to recommend that each vase or other floral decoration should as far as possible consist of one family, or one variety of plants or flowers. The adoption of this plan would produce greater congruity, as well as result in far more variety, both vital artistic considerations in the disposition and proportion of form and the contrast or harmony of colour. Each vase would thus have an individuality of its own, and prove distinct from every other, unless it were needful to repeat, as might often be the case in larger arrangements. Better have two, four, a dozen, or more vases alike than all or many mixed indiscriminately or indiscriminately. In thus advocating that as far as possible plants should stand alone in our decorative arrangements, I should also urge the importance of their being left to the support of the verdure and beauty of their own leaves or stems.

This opens up a rather wide subject, fraught with cultural and monetary difficulties of a rather formidable character. The nature of these will be at once apparent when it is seen that as each flower is left to the support of its own foliage, the present system of cutting flowers with short stems, so justly condemned by "F. W. B.," must give place to the cutting of branchlets or of the entire plant. Such a change of material would go far to revolutionise our present mode of furnishing vases. We should gain freedom as well as height by the enlargement and natural verdure of our cut flowers or branchlets. These would also enable us to dispense with another great cause of monotony and enhance the beauty of the leaves. It needs courage to write it, but the indiscriminate use of Ferns as greens in our floral arrangements is as unnatural as it is unnecessary. We not seldom see Fern fronds even used as a base or relief to a vase of Roses. What a libel upon Nature's Rose leaves and twigs, which are hardly of secondary beauty to the flowers themselves! And surely *Gladiolus* leaves are as good as *Asparagus*, and far more congruous to the rich and glorious spikes of flowers that Nature has crowned them with, and so of most other flowers. Maiden-hair and other Ferns are among the most exquisite greens in Nature. But there is no better or higher reason for spraying down all flowers with their delicate verdure than that the painter should fringe round all his landscapes with Fern fronds. No, let us avoid overcrowding and monotony, and as among the first steps to free ourselves from both, fill each vase with one plant, and verdurise each flower with its own foliage or twigs. D. T. FISH.

**Iris Kämpferi Culture.**—What is the proper treatment of *Iris Kämpferi*? is it always hardy? What sort of soil and situation should it have out-of-doors?—R. WHITEHEAD. [This *Iris* is perfectly hardy, at least in England. It succeeds best in a warm situation in a border of good, moist, loamy soil mixed with a little peat. It requires an abundance of water during summer; hence, thrives well by the side of a stream, where the water can be made to flow over the plants often in dry weather, but in such a case provision should be made for rendering the place dry in winter.—ED.]



COUNTRY SEATS AND GARDENS.

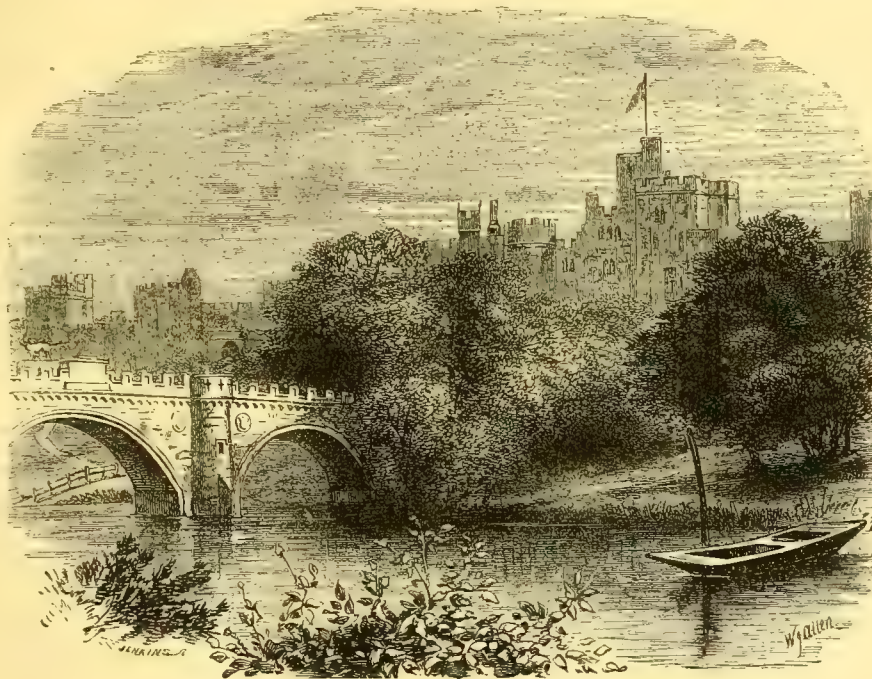
ALNWICK CASTLE.

THE improvement of the grounds at Alnwick, of the gardens, and of the Castle itself have been conducted by successive Dukes of Northumberland at great cost. The fourth duke, who died in 1865, expended £250,000 on the castle, and a proportionate sum on cottages and farm improvements. But the first great improver was the first duke, and, from a gardening point of view, nothing more significant has occurred than Duke Hugh's erection of Brislee Tower, a hundred years ago, commemorating as it did the first great innovation of timber and plantations, the introduction, in short, of the landscape gardener's art in the immediate precincts of this great feudal castle. Nothing could have been more rugged and uninviting than the surroundings of this ancient fortress of the Percys previous to the last century. Alnwick Moor at the present day can hardly be more bleak and bare than the whole country must have been, almost up to the castle walls, anterior to the middle of the last century, when Duke Hugh, the re-builder of Sion House, and the planter of many millions of trees at Alnwick, formed the home plantations in Hulne Park. A capital bird's-eye view of the country is obtained from the top of his tower—a very noble view. The encircling 9-ft. wall of the great park is seen in glimpses, as foliage or contour may permit, and one sees with interest at one point where the moor comes nearest that a bit of the brown waste has been enclosed and planted with intramural Fir plantations, which have thriven, and across the moor at Craggside, Rothbury, Sir William Armstrong's Fir trees, in a similar situation, are doing equally well, so that the intervening moor, twelve miles across, need not remain a forbidding and unproductive waste for ever.

The Castle stands within a mile of Brislee Tower, a palatial pile in the midst of its grounds and gardens, with the town in the rear and park in front. In the distance beyond are the cultivated fields of three or four first-rate farms, each with its group of handsome central buildings. The landscape of Hulne Park may be said to have been completed mainly by Nature and Duke Hugh. She supplied some admirable features in the winding valley, with its river, and he added the plantations and the ornamental groves.

The Gardens at Alnwick consist of the shrubberies along the stream of the Aln below the Castle, Hulne Park being above it, 20 acres of flower garden, and 7 acres of kitchen garden, both within walls. The houses include five large Grape houses and five Pine houses, besides pits for suckers. At the time of my visit I found

Mr. Ingram busily engaged in the re-arrangement of the heating apparatus of the numerous houses. The fruit room of his planning must be noticed as a structure perfectly adapted to its purpose. It is 30 ft. long, 18 ft. wide, 12 ft. high, and a cool and uniform temperature is secured by a space above the ceiling 6 in. deep, covered by a foot of heather under the roof. The windows, which are double, are rendered insect-proof by means of perforated zinc; the walls are 2 ft. thick. The fruits stored in this house in the season include a great variety of Pines and Grapes, Melons (which average from 3 lbs. to 5 lbs. each, and sometimes reach 6½ lbs. weight), Bananas (which are in favour here), and, passing from the stove to out-door fruits, such a variety of Pears, Apples, Plums, Peaches, Apricots, and Nectarines as one would hardly expect to find on the east coast, five or six miles only from the North Sea and 350 miles north of London.



Alnwick Castle.

Marie Louise, Bauré Rance, and Chaumontel Pears ripen here in good years, the soil being warm and dry. Summer pruning, timely pinching with thumb and finger, is rigidly carried out over the whole of the walls. The Peas are topped with a pair of hand-shears, and the Ne Plus Ultra Pea, sown the third week in May, is in full season in August, the Green Pea season continuing through September, and sometimes till November. Apricots are retarded on the walls till the family arrive at the Castle in August. It is interesting to mention that a basket of flowers is gathered every week from greenhouses and borders, and sent to the Nurses' Home at Newcastle for distribution among the sick. A great space of ground is devoted to the geometric arrangement of flower beds in a site where so much beauty—unseen from the windows—would appear, like the brief bloom of a South African desert, to be lost to the world. The banks which enclose this compartment on one side are planted with festoons and chains of hardy shrubs with much taste and originality of design. The Pinetum—an interesting spot—lies beyond.

**Coniferæ at Alnwick.**—A few remarks on the treatment of Coniferæ at a station so far north as Alnwick, and only a few miles distant from the eastern coast (the wrong coast for tender plants!), may perhaps be useful. The best side for the Pinetum was found near the gardens amid the shelter of walls and beltings of timber. In preparing the ground the boggy spots were drained, the stiff land was mixed, and the poor part was manured. But of all the measures that were taken to ensure success, the providing of shelter was the most important. "Shelter," says Mr. Ingram, "is the *sine qua non* in a bleak site like this." Mr. Pitt made the same discovery on the exposed coast of Kent. "It is useless planting timber here," said the steward at Walmer Castle; "not one tree in ten will grow." "Then," said Pitt, "plant ten for one." Sheltered as the Pinetum is at Alnwick by walls and masses

of timber, the following kinds are found to be hardy: Abies Douglasi, Picea amabilis, P. grandis, P. firma, P. nobilis, and P. magnifica. The Douglas has grown in some moist land in the park long enough to become quite a timber tree. Picea Pinsapo is not perfectly hardy here, but it is doing well with shelter, sub-tropical Spanish though it be. The Picea Nordmanniana from the Caucasus supports its character as the hardest of the Silver Firs. The Cryptomeria japonica is preserved by shelter, and looks delightfully green, even after a severe winter, but it can hardly be expected ever to attain here the height of 150 ft., which it reaches in its native ground in China or Japan. The shorter C. elegans looks still more hardy and at home. These noble Silver

Firs, Picea grandis, P. nobilis, and P. magnifica, are doing well and growing taller yearly, though one can hardly hope they will ever lift their heads at Alnwick to a height of 300 ft., as in Oregon and Vancouver Island.

P. grandis has required pruning to keep it in proper form, and in passing through a group of fine young trees, with Austrian Pines and Thujaopsis borealis among them for shelter, out came Mr. Ingram's pruning knife. The English seedlings of P. grandis are not to be compared with the grafted specimens, being less beautiful in shape and less blue in colour. But the latter require the knife. Mr. Ingram prunes straggling branches freely, and he finds it necessary to do the same in the case of Araucarias. When these specimens lose their leader, he prunes and produces a new one. The grafted P. grandis is addicted to "going all ways" but the right way, which is straight up with a single leader. It can be prevented, however, by pruning when young, and by this means the side branches are kept in good form and well proportioned. We came in the course of our walk to one of the worst behaved specimens on the ground, con-



taining a good deal of dead wood. "I think we'll make something of him presently," said the surgeon with the knife. "See, he is breaking out here nicely; and," he added, after slashing off some dead boughs, "if he proves intractable, we'll replace him by something else."

The *Picea lasiocarpa* (Lowiana), with its bold conspicuous foliage, is doing very well here. Another Silver Fir from the opposite hemisphere, from Japan instead of California, *P. firma*, is a strong young tree, 9 ft. high, remarkable for its cloven leaves. It is late in its spring growth; another of its characteristics is the beautiful bright green of the foliage in winter. *Pinus amabilis* stands 15 ft. high. The Umbrella Pine of Japan, *Sciadopitys verticillata*, seems quite at home and hardy, and that rarer *Thuja* from Japan, *Thujopsis dolabrata*, worth, I believe, a guinea a foot at 4 ft. high, is quite content at Alnwick with shelter; but it must have shelter. There is nothing better as a shrub-screen than *Cupressus Lawsoniana*, the Californian Cypress, sometimes called a *Thuja*. *Cupressus nutkatensis*, to which I gave just now its other name of *Thujopsis borealis*, is a useful screen, and a still better stop-gap, having brought from British Columbia the habit of branching wide. Its foliage has borrowed from the rainbow a peculiar dark purple green, with lighter green to tip the leaves. *Abies Engelmanni glauca*, a tall Spruce of the Rocky Mountains, where it reaches 100 ft., has also taken from the infinite variety of Nature's hues a blue like that of *A. nobilis*, but paler. Those persons who dislike showing natural signs of wonder or astonishment, holding themselves above such proofs of weakness, should avoid entering a Pinetum where, for our wonder and delight, in Miltonic phrase, Conifers have been drawn together from all parts of the globe, each possessing its own peculiar colour, form, habit, and character. Let them avoid *Abies polita*, which might betray them into open admiration of its green-tinted bright leaves and the cream-coloured bark of the young shoots. Let them not compare *Abies Hanburyana* with the other Hemlock Spruces. They all have slender branches whether they are Japanese or Canadian, and this one from the far east has very graceful drooping foliage. It is quite different from *canadensis*; still the kinship is obvious. *Retinospora obtusa gracilis aurea*, too, is a garden variety of the Japanese Cypress which must excite surprise for its personal beauty and peculiarity, combined with that distinct form which Nature has stamped upon the Cypresses, whether the upright Roman species (*C. sempervirens*) of Southern Europe, the funereal Cypress (*C. funebris*) of China, or *C. Lawsoniana* from Northern California. The lover of trees may always find in a Pinetum something to excite his particular interest and constant admiration. The Duke of Northumberland, be it added, takes great interest in watching the progress of the various specimens in his Pinetum, and frequently pays it a visit. II. E.

#### THE WILD GARDEN IN PINE WOODS.

WILL the author of the "Wild Garden" or some one of equal experience give us in THE GARDEN a list of plants which can be naturalised under Pine woods in the sandy soil of the Bagshot district and other parts of Hampshire and Sussex? I would specially ask for experience as to Lilies and Anemones.—R. WHITEHEAD. [With care in the selection of positions, a good deal of very charming work might be done in Pine woods with such material as the following: The Twin flower (*Linnaea*), Winter Greens (*Pyrola*), Partridge Berry (*Mitchella repens*), Oregon and Winter Greens (*Gaultheria Shallon* and *procumbens*), Cornish Money-wort (in shady and moist ditches),

yellow Peruvian Lily (*Alstroemeria aurantiaca*), *Lithospermum prostratum*, Sun Roses (*Cistus*), and Rock Roses (*Helianthemum*). Of course we are assuming there are open sunny places as well as shady ones. The Mayflower (*Epigaea repens*) does best in a sandy wood under shade; *Hellebores* will do with goodish soil, the "pan" broken up. No doubt there are many other plants, but almost all of the above have been tried to my own knowledge and found to succeed. *Cypripedium spectabile* will do in the bogs, and the showy *Asclepias tuberosa* on the sand-hills. A whole world of beauty exists in the varieties of hardy Heaths perfectly suited for this kind of gardening. Anemones we have no experience of in such soil, but it is likely several would thrive. *Lilium auratum* does perfectly well on the Bagshot sands.]

### THE FLOWER GARDEN.

**Preparing for Spring.**—Where spring-flowering plants are grown in quantity, people will now be busily preparing stock for another season, for, unless taken in hand in good time, no amount of attention afterwards will insure a good display of bloom, and sturdy plants that have been freely exposed to the air will pass safely through the severest winter, while those that have been crowded in seed-beds will more or less succumb to the first severe visitation of frost. Amongst those that we find most useful are—

**Single Wallflowers.**—In order to get really good sturdy plants of these, they must be sown early. We sow thinly in shallow drills about the middle of March, and as soon as the young plants are large enough, they are transplanted either into nursery beds from 9 in. to 1 ft. apart, or placed in single lines between fruit bushes in the way they are generally prepared for the London market. If dry they are given a good watering or two to get them well rooted, and if very hot some green branches are laid over them for a few days, after which they only need to be kept clean to enable them to become nice little bushes. They are best transplanted, as they then form a mass of lateral roots, but if left where they are sown they form long tap-roots, that when broken in removal when large checks them very much more than when they are transplanted in a small state. There are many varieties, but the Dwarf Blood Red and the bright yellow are the best, but they are so easily crossed that it is difficult to get them true. We have some single of a bright clear yellow that we have kept true by means of cuttings without the slightest stain in them; they are, however, very difficult to get so true from seed.

**The Forget-me-not or Myosotis** is such a universal favourite that no spring garden can be considered to be complete without it, and the beautiful dwarf, large-flowered variety called *dissitiflora* has nearly superseded smaller flowered, but stronger growing kinds. More attention is, however, required to get a good stock of healthy plants, as it does not seed so freely as *M. sylvatica*, and the birds, especially linnets, are particularly fond of the seed, and pick it out as fast as it ripens unless it is securely netted. But if from scarcity of seed or owing to drought a good supply of seedlings cannot be had, it may be readily increased by means of cuttings, and the old plants that were laid in after the spring beds were cleared may now be pulled into pieces, inserted in cool shaded borders, and kept moist until rooted. They will make good dwarf-branched plants by November, when the beds will be ready for their reception, and a bed of Forget-me-nots with a good sprinkling of brilliantly coloured Tulips coming through it and edged with Crocuses is not easily surpassed.

**Pansies and Violas.**—With a good collection of these a garden may be rendered gay nearly all the year round. But for early spring blooming some of the older varieties, such as the Cliveden Blue, Yellow, Purple and White, are still unequalled, for they are very early and extremely

floriferous. Some of the pretty spotted Pansies, such as Magpie, make very effective beds, and as to seedlings of English or Belgian mixed varieties, if sown now they will make good plants by the autumn. But as distinct colours are mostly in request, we propagate by means of cuttings, either under hand-lights or bell-glasses, or in cold frames, from the soft young shoots that spring from the base after the flower-shoots are cut off. Where these were put in a month back, they will now be rooted sufficiently to plant out on open borders 1 ft. apart each way, and if the blooms are picked off them they will make fine plants full of buds when winter sets in, and in mild seasons will continue to expand, until by the end of February they will be quite gay. Being so dwarf, too, they make good plants for edgings. Old plants that have been flowering should be cut down close, and as soon as they have become well furnished with young growth, they may be divided and treated the same as young plants. The Pansy and Viola delight in rich soil, and a good layer of rotten manure dug deeply into the beds is the best preservative in the case of drought. Violas are now so like Pansies that it is difficult to distinguish them, but the same treatment applies to both, and the Violas of the cornuta section that still retain the semblance of enlarged wild Violet blooms, possess some extremely soft pleasing tints of colour. Viola Blue Perfection is an especially good variety, and Blue Bell makes a good companion to it.

**Primroses and Polyanthuses.**—The long protracted drought has been extremely trying for these moisture-loving plants, but where the crowns are safe, they will, with the return of showery weather, quickly make up for the loss of the old foliage, and be even more floriferous than in seasons following those that have been moist and dull. We transplant most of our Primroses and Polyanthuses directly they have done flowering in the coolest and most shady borders we have, and keep them moist by watering until they have become rooted. We also plant deep enough to cover the crown well with soil, and if sunshine is very intense we lay a screen of branches or a thin layer of straw over them. If the weather becomes moist these may now be removed, carefully stirring the soil between the rows and giving a good soaking of water. Thus treated they will quickly produce fine crowns of foliage, and if carefully transferred to the spring flower garden will make a fine display, but they look best on mossy banks or under trees where the herbage is thin, as then the heavy rains in spring do not soil the delicate blossoms.

**Arabis alba** and its variegated-leaved variety make useful edging plants, and thrive in any ordinary garden soil. Cuttings of them put in under handlights will now be fit for planting out in nursery rows, and another batch may be put in; old tufts may be parted and re-planted.

**Aubrietias.**—These beautiful dwarf carpet plants, which form such masses of lovely purple flowers in the early spring months, are easily increased by cuttings or by seeds, and when planted thickly form a perfectly level mass of delicate flowers. *Aubrietia purpurea* and *A. græca* are also well adapted for covering banks or mounds, as when thoroughly established they live in dry places where many plants would perish.

**Annuals** of certain kinds are extensively used for spring bedding. They require to be sown in August when they get well established, but do not start into flower until the following spring. The beautiful blue *Nemophila insignis*, the bright rosy pink *Silenes*, the *Saponaria calabrica*, the straw-coloured *Limnanthes Douglasi*, and many others that grow freely in any common garden soil, and that make a fine display in spring, are well worth attention. If the beds are not ready for their reception as soon as they are large enough to plant out of the seed bed, they must be transplanted into rows about 6 in. apart, so as to ensure dwarf, bushy plants.

**Bulbs.**—As the best time for getting imported bulbs is now at hand, I would advise anyone con-



templating a good display to obtain them early. Single Tulips, such as *Brutus*, fine crimson or yellow like Canary Bird, are the most effective, as they stand up better than many without staking when heavy through rain, and the same may be said of Hyacinths, which look lovely peeping through a carpet of Forget-me-nots, or *Silenes*, and a good band of Crocuses, *Aconites*, and *Scillas* look well associated with variegated *Arabis*.

**Shrubs.**—A good supply of dwarf shrubs we find to be very effective in winter and spring. By using shapely little specimens of *Retinosporas*, *Junipers*, *Hollies*, *Aucubas*, *Box*, and other handsome leaved evergreens, the flat surface of carpet beds is broken up, and a better effect is the result.  
*Linton.* J. GROOM.

**New Zealand Flax.**—Believing the flowering of *Phormium tenax* in a 15-in. pot to be an unusual circumstance, I send a photograph of it. It is one of two plants in the same pot raised from seeds received direct from New Zealand a few years ago. Notwithstanding the confined root room, it has reached the height of 9 ft., with leaf blades 8 ft. long.—J. M., *Charmouth, Dorset*.

**Musk Out-of-doors.**—We have no yellow flowering plant which grows so luxuriantly as a carpet for rustic beds as the common Musk. It is perfectly hardy, and spreads and propagates itself like Mint. Where it meets with a dwarf Rose bush, or anything to take hold of, it will creep up for 18 in. or more, and little pyramids of it thus formed are very pretty. As Musk is such a general favourite, I am rather surprised that it is not oftener seen as a hardy border plant.—M.

**Propagating Pinks by Division.**—The Pinks spoken of by Miss Owen as being thus propagated are our new dwarf section, which form such a mat of Grass that they can be readily increased by this method. Of course this is of great advantage to amateurs who want a moderate number of strong plants rather than a great stock of small ones such as would be got from cuttings. If divided and planted out early in autumn they make grand blooming plants by the following June.—DICKSONS & Co., *Waterloo Place, Edinburgh*.

**Hyacinthus candicans.**—Some dry bulbs of this fine Hyacinth planted at the end of February under the shade of a large tree, but where the soil has been for the summer fearfully dry, have flowered nobly, carrying spikes of from twenty to twenty-five blooms each. Several bulbs in a large pot should make elegant objects in a conservatory or corridor, and in the open ground they should be planted in clumps. The flowers do not rival those of the *Eucharis* in purity, but wired would be useful for bouquets or button-holes, especially when the pollen cases are removed.—A. D.

**Lathyrus latifolius roseus.**—This is the designation I have given to a very charming form of the Everlasting Pea growing here—one of the most delicately tinted and prettiest I have seen. The flowers are white ground ones, heavily flushed with rose, the top petals having most colour. It is, perhaps, well known to some, but to me it was a stranger till it bloomed most freely this year. There are some half-dozen of these *latifolius* Peas that are worth a place in every garden just growing in clumps about old stumps, or having the support of some stout Pea sticks. Whilst they do so much to render a garden gay, withstanding drought well, they furnish an ample supply of cut flowers.—A. D.

**Hardy Ferns.**—The following varieties of hardy Ferns are, amongst others, grown in Messrs. Drummond's nurseries, near Edinburgh, viz.: Ten well-marked varieties of *Athyrium Filix-femina*—*Applebyanum*, *coronatum*, *coronium*, *crispum gracile*, *diaperatum*, *grandiceps* (very finely cut), *multiceps*, *plumosum*, *Wardianum*, and *Victoria*, the latter found near Montrose. Associated with these were also *Lastrea Filix-mas crispa* and

*crispa gracilis*, *Osmunda elegans*, said to be different from the pretty *O. palustris*, which it much resembles; *Polystichum angulare cristatum*, *grandiceps*, and *Brauni*, a fine kind; *Polystichum grandidens*, which appears to be the New Zealand *P. vestitum*, *Polystichum Robertianum*, and three good varieties of *Scolopendrium vulgare*—*cristatum*, *laseratum*, and *Wardi*, the latter a very distinct kind.—C. M. O.

**Hybridising Carnations.**—Much has been said lately on the difficulty of finding pollen for hybridising Carnations and *Picotees*, and no wonder. If you look at a single Carnation you will see dozens of stamens loaded with pollen, but in a show or fully double flower you will find comparatively few, for all that beautiful duplication of petals is only a new way of utilising the stamens, for any botanist will tell you that the extra petals are "transformations" of the extra stamens. Consequently, it is only a practised hand that can find sufficient pollen in these beautiful varieties, but I myself never look for it in the best or leading first blooms. If you wait for the small side blooms to expand you are sure to find plenty at 9 o'clock in the morning when the sun is shining. You must remember that the pollen is not, as a rule, ripe at the same time as the style in the same flower, the style being generally ripe a few days after and the pollen a few days before the full maturity of the flower. The style is ready for fertilisation when you see the tips curling and viscous, and then, having found the pollen with which you wish to hybridise, apply it very lightly with a fine camel's-hair brush. Remember the pods must not be gathered till quite dry, but full directions for crossing for seed will be found in a back number of THE GARDEN.—GIROFLE.

**Snapdragons for Rockwork.**—In your notice of some dwarf seedlings of these in a recent GARDEN, you say they look like rock plants, and it has often surprised me that they are not much more used for the decoration of rockwork than they are. The native wild yellow Snapdragon makes its home on old crumbling walls or ruins, and few plants thrive better or flower more freely on or among rocks than the many varieties of the garden Snapdragon. The yellow shades, the white, single and double, and the purple varieties are perhaps among the best adapted for the rockery. Snapdragons are not only beautiful alone, but they group or mass remarkably well with Foxgloves, and one of the finest effects I have ever seen was formed of the curious trinity of Foxgloves, Snapdragons, and common Bracken, all intermixed in the wildest confusion, and growing with the greatest luxuriance. The Bracken formed a rich green foil to the brightness and brilliance of the Foxgloves and Snapdragons. It seems surprising that the two latter plants are not more used in rockeries and wild gardens than they are. It is quite an unnatural arrangement to clothe rocks with Ferns only, as is so often done. Such clothing may be said to be the exception in Nature, not her rule, and such plants as these and most alpine plants are far more congruous, brilliant, and pleasing among rocks than Ferns only, however verdant in colour or varied in size and form.—D. T. FISH.

**Border Carnations.**—Those interesting notes (p. 103) about Carnations will doubtless serve to direct fuller attention to the beauty of these not only as border flowers, but also for supplying cut blooms. At two gardens I recently visited I found both gardeners speaking in high terms of the value of a bed of these plants of many and various shades and markings growing in the kitchen garden borders. They had furnished for a long time an abundance of useful and fragrant flowers. The Continental varieties, of which there were samples, are more floriferous than our show kinds, and are less affected by weather or disease. Some make plenty of grass, others yield none, but as some seed freely, and seed is always cheap and good, there is no reason why a sowing should not be made every year. I can imagine that to growers of flowers for market on a large scale, some three or four good clear coloured selfs

would be most acceptable. White, scarlet, crimson, purple, and similar hues suit well. Private growers who want a basket of flowers for the house every day are not so hard to please, and just at this time of the year nothing comes in more acceptable than Violets, Peas, Carnations, and Tea Roses, with a few Grasses and pieces of Fern. Dressers of tables and stands too often make mistakes in employing too many kinds of flowers. One or two kinds in variety would look far better, and for this purpose Carnations are invaluable. Yellow hues so far have not been striking, and indeed I fear we shall never see a Carnation that can rival the Sweet Sultan or *Coreopsis* in colour, but that may help to spur raisers on to strive for what seems impossible. It is not now too late to sow seed of Sweet Sultan in pans under glass, but the best time is the month of May, and then in the open ground, as such seedlings make fine robust plants for the next year.—A. D.

#### A HARDY BEDDING PLANT.

HAVING occasion to propagate a quantity of various dwarf hardy plants with the view of using them for edgings for beds, shrubberies, and for rockwork, among them was a bed of *Sedum spurium* about 40 ft. long by 4 ft. wide of the darkest and I think the best variety. Most of the things were transplanted in the spring of this year, but fully the half of the *Sedum spurium* bed was left. I ought to say that the beds were filled with the cuttings or offsets in the autumn of 1879. The *Sedum* grew well in the summer of 1880, was fully exposed to the sun and all weathers, but lost all foliage during the past winter. In spring vigorous growth was made, and the bed was soon covered by a dense carpet of bright green. May came and the *Sedum* showed well for bloom, and for two months it has been a sheet of the most showy colour—an unusual shade of red; so densely is it now in flower, that the foliage is quite hidden. Every person seeing it for the first time in the distance immediately asks, What is that? Bedding gardeners especially are struck with it. Common although the plant is, few seem to recognise it, and none seem to have had any suspicion of its merits as a bedder, simply because it is unusual to see this plant in such a large mass. We have numerous large patches of the plant in positions where it does not flower at all or but very sparingly. There are also other varieties—a flesh coloured one and one nearly white, but this dark variety is far the showiest.

HIBERNIAN.

#### SEASONABLE WORK.

**Flower Garden.**—This department, now at its best, will require regular attention to watering, pegging, and dressing, in order to prevent strong growers from encroaching upon their weaker neighbours, a very important point in the successful management of carpet beds. Mixed borders in which Phloxes and other free growers are planted will take large supplies of water, otherwise this hot dry weather will soon throw them out of bloom. Keep them neatly tied to sticks to prevent injury by wind, and aim at quality in preference to quantity of bloom by mulching with rotten leaf-mould where exposed on dry sloping borders. Two useful old plants well worthy of a place in every garden are *Salvia patens* and *Lobelia cardinalis*: they go well together in the formation of beds or back row clumps, do best in rich peaty soil, and require plenty of water in dry weather. *Tigridia grandiflora*, an easily managed Cape Irid, makes a fine display at this season, and although the individual flowers only last a day, liberal treatment will insure a succession for three weeks or more. The best mode of treatment is to lift the roots in the autumn, keep them dry and free from frost through the winter, and pot six or eight in 6-in. pots in the spring; they may then be plunged in a cold pit and turned out into the beds early in June. Where the choice kinds of Geraniums have made good growth all the cuttings that can be obtained



should be taken off and struck on warm borders in the open air. Phloxes, Pentstemons, and the like may also be propagated under cap glasses placed on a shady border. W. COLEMAN.

## ORCHIDS.

### NATIVE HABITATS OF ORCHIDS.\*

THE way in which Orchids grow is, as a rule, so well known that little description is needed; great numbers are of an epiphytal character; others, and by no means those that are the least beautiful, are terrestrial, growing on a rich deposit of decayed vegetable matter. Much, however, as we may admire the beauty of the flowers, and be able to tell with only a slight inspection the different genera to which any plant belongs, it is natural that we should desire still further to possess some information respecting the countries and climate, the localities and habitats of those that continually come under our notice; for it will often be the case that by knowing their surroundings in their native homes, we may so arrange our methods of treatment, that whilst apparently treating our collections as a whole, we, through the knowledge we have acquired, are nevertheless giving to each and all, in a modified form, that amount of heat and moisture, sunlight or shade in which in their native home they grew and flourished.

The Districts in which Orchids are found are very numerous; they grow in profusion along the southern slopes of the Himalayas; in the damp jungles of Nepal and Bhotan, the valley of Assam, and on the Khasya Hills, some of the finest *Dendrobiums*, *Cœlogynes*, *Cymbidiums*, &c., coming from this locality. On the northern slopes of the Jyntee and Naga Hills, the *Vanda cœrulea* and *Vanda Cathcarti* grow profusely; in Bengal and the Sunderbunds, *Vanda Roxburghii*. Several of the *Saccolabiums* and *Aerides* are met with growing upon the stems and forked branches of the trees, chiefly those at the edge of the woods in Burmah and Arracan. The Tenasserim and Tavoy provinces, whence so many *Dendrobies*, such as *Wardianum*, *Falconeri*, *thyrsiflorum*, *Vanda Parishii*, *Cymbidium Parishii*, and *Saccolabiums*, are sent over to us, are rich in Orchids. Java possesses some 300 different species, and Ceylon, Borneo, New Guinea, the Philippines, Australia, and in fact almost all the islands of the Indian Archipelago are bountifully supplied with Orchids, not forgetting Japan, whence come to us the singular and lovely *Angræcum falcatum*, *Dendrobium japonicum*, and *Cypripedium japonicum*. Passing across the Indian Ocean, we come to the home of the greater part of the *Agræcums*—the island of Madagascar. Again, on the mainland of Africa many remarkably curious forms are continually being collected, whilst down at the southern extremity the lovely *Disa grandiflora* and others of a terrestrial character may be gathered with an unsparing hand. Sailing still further to the west across the Atlantic, we reach the shores of the New World, and if in the Eastern Hemisphere there is much to rivet one's attention and charm the eye, we now seem to have entered upon an entirely new world, in which there is wealth and floral beauty. Brazil we touch at with its vast numbers of *Lælias* and *Cattleyas*, its *Oncidiums* and *Sophranitis*; British Guiana, Demerara, famous for *Cattleya superba*, *Oncidium Lanceanum*, and *Epidendrum bicoloratum*. Again we touch at Guatemala, New Grenada, Mexico, Peru, Ecuador, each country being the home of innumerable hosts of some of the most chaste and delightful forms to be found in the entire range

of this family. In North America the hardy *Cypripediums* in the bogs of many of the Western States are numerous and fine, and even our own country is the home of over 30 distinct species.

**Temperature and Altitude.**—When we speak of any plant as being, for instance, a native of India, the expression conveys but little to those who have the culture of these plants to deal with. The seasons vary much, the extent of the country being so great; elevation also affects in a great measure the range of temperature. High situations are necessarily much colder than the plains, where a very high range of temperature rules for a considerable part of the year. At Ootacamund in June the thermometer often stands at about 65° Fahr. in the shade in the middle of the day, and in the cold season there are sharp frosts in the mornings. Coonoor, in the Neilgherry Hills, is now easily reached from Madras. The road along which travellers proceed in the ascent of the hills is beautiful, and the scenery of a varied and attractive character, the mountains rising abruptly right and left of the valley from 5000 ft. to 6000 ft. Here *Vanda Roxburghii* is found growing upon trees, and in its native habitat. It is remarkable how much the flowers of different plants vary in depth of colour. A writer speaking of *Saccolabium paniculatum* found in this locality says the white variety is exceedingly pretty, bearing a single spike, whilst *rubrum*, a variety of the same, is often branched. I am inclined to think, he says, the difference in these two plants is caused by the different elevations at which they are found; low down it is nearly white, increasing in depth of colour as the higher altitude of 6000 ft. is reached. At Coonoor and Kartary it is pale rose or pink; at 8000 ft. deep red or *rubrum*. The temperature of Coonoor is about 70° in the shade in the middle of the day. The rainfall is small, being shielded from the south-west monsoon by the higher range intervening between it and Ootacamund. The vegetation shows the absence of much moisture. The trees and rocks, instead of being crowded with epiphytal and parasitical plants, are comparatively bare. *Aerides crispum*, the finest Orchid on the hills (with the exception of *Schröderi*, of which only one plant has as yet been found), grows on rocks. It is a free flowerer, and ranges from 5000 ft. to 8000 ft. Those growing on higher elevations have a longer stem with narrower leaves. This variety will be *Warneri*. Here, too, is *Saccolabium Resdi*. *Bolbophyllums*, *Erias*, *Cœlogynes*, and a few *Dendrobies* are met with at Darjeeling. The average annual rainfall is about 130 in. at an elevation of 3500 ft., whilst at 2500 ft. it is 100 in.; the greater part of the rain falls during June, July, August, and September, very little falling in the other months. The mean temperature of the higher altitude is 64°, that of the lower being 71°, and the lowest from 40° to 45°. Lieut.-Colonel Benson, who for several years has been engaged at different times in collecting

**Orchids in Burmah**, thus speaks of the results of his travels: "I have lived in the jungles for weeks, I may say months, and tons of different kinds of plants have passed through my hands, mostly either gathered by myself or in my presence. In the Tropics there are a great variety of climates, and in each variety of climate we find that variety of Orchid which it best suits. Some Orchids have a wide range of distribution; others, again, are restricted to particular localities; for instance, I have never found *Saccolabium giganteum* at Moulmein or Rangoon, or south thereof. I presume simply because there is too great moisture in the atmosphere; but travelling northward, beyond

the extreme influence of the S.W. monsoon, the plant puts in an appearance, first in small quantities and of small size, but as you approach the drier climate of Prome and Thayetmyo, where hot winds blow, and the thermometer is usually in the dry season about 112° Fahr. in the shade, the plant is found in great profusion and luxuriance, growing on trees in a deciduous jungle, exposed to the rays of a tropical sun, and in most cases with its leaves in a scorched state. I could give numbers of similar examples, as *Vanda Bensonæ*, *Saccolabium ampullaceum*, &c. Most Orchids love light, air, and water, good free drainage and ventilation." Speaking of *Dendrobium formosum*, the same writer says, "This plant I have never observed growing at any elevation worthy of notice above the plains, or at a great distance from the sea. On ascending the mountains more inland we come across its co-species, *Dendrobium infundibulum*, *D. eburneum*, and *D. Jamesianum*. I may here remark that we have at once a good index or guide as to the requirements of these somewhat difficult species—the former on the coast revelling in abundance of light and heat, the latter species on the mountains evidently enjoying a much cooler and probably moister atmosphere. The favourite habitat for *D. formosum* is on trees, as, for instance, *Dipterocarpus laevis* and a species of *Dillenia*. This plant does not seek shady places for growth; in fact, as far as my experience goes, few Orchids care for more shade than what is given by the trees when in leaf. During the months of February, March, and April they must be exposed to an atmosphere of 110° Fahrenheit in the shade. This intense heat so causes the pseudo-bulbs to shrivel, that specimens gathered in February can scarcely be recognised as the same healthy specimens observed in the previous November, the bulbs in that short space of time having decreased to at least half their natural and healthy dimensions. *Saccolabium giganteum* and *guttatum*, *Vanda Bensonæ*, *D. Parishii*, *D. albosanguineum*, *D. Dalhousieanum*, *D. chrysotoxum*, and *Saccolabium ampullaceum*, &c., may, as plants found on the plains, be said to bear a difference of temperature from 46° to 110° or 112° Fahr. in the shade during the cold and hot seasons, and this difference during the month of February would frequently take place in a single day. About 150 miles from Moulmein a range of mountains is reached which are subject to a heavy rainfall and moisture from the constant mists from the clouds that frequently envelop it. Commencing from the plains, and rising to an altitude of from 6000 ft. to 7000 ft. above the sea, the following plants are met with, viz., *Dendrobium Bullerianum*, *Thunia Bensonii*, *D. infundibulum*, *Cypripedium villosum*, *Cymbidium tigrinum*, and *Pleione Reichenbachiana*. At this elevation the thermometer averages in the shade somewhere about 75° at midday, descending to 40°, or even lower, in the mornings at sunrise." Speaking of

**The Arracan Mountains**, also visited and partly explored by the same writer, we find the following remarks: "These mountains form as it were a barrier to the south-west monsoon, arresting its force to the eastward; consequently the country round about Prome and Thayetmyo has a considerably drier climate than that about Rangoon and Moulmein. Thus the rainfall on the Prome or east side is very much less than that on the west, which is exposed to the full violence of the south-west monsoon coming direct from the ocean. On these mountains, about half-way up, on trees on the exposed ridges subject to very great moisture, beside abundance of rain, *D. Bensonii* is gathered. *D. crassinode* also is found growing on large trees, the thermometer falling to 46° in the cold

\* Lecture, somewhat abridged, delivered in the Town Hall, Manchester, by Mr. Swan, Fallowfield.



season. D. Farmeri, the yellow variety, is also met with growing on large trees and in shady places, where the average temperature is 75° and the rainfall 90 in., whilst the white variety is found on the plains near Moulmein, where the average temperature is from 80° to 85°, and the annual rainfall from 200 in. to 250 in.; in the same locality *Aerides Lobbi* and *Saccolabium Blumei* are plentifully met with. *Vanda cœrulescens* is met with on the Arracan Mountains, growing on deciduous trees where the thermometer sometimes reaches 120° in the shade, whilst *V. Denisoniana* is found in shady places where the average temperature is only 70°. M. Kurz thus speaks of

Pegu, on the southern extremity of Burmah. "Unlike the islands of the Malay Archipelago, which enjoy an uniform warm and moist climate, Pegu on the mainland has a dry season, partly cold, partly hot, extending from December to April, and a rainy season, which lasts from May to November. The thermometer rarely rises above 88° in the shade in the cold season, and often sinks as low as 57°. In the hot season the thermometer rises to 95° and 100° in the shade, but the nights remain cool and agreeable with very little dew. In the Prome district, although the thermometer in March at mid-day registered between 101° and 102°, the sky was so hazy that M. Kurz worked exposed in the direct sun without any inconvenience. In the ever-green forests on the Martaban Hills dew falls so heavily as to wet the traveller when marching along the river banks, but after an ascent of 100 ft. to 200 ft. the same dryness occurs in the forests as on the plains. The vicinity of the sea is always accompanied by a greater degree of dampness. The maximum temperature registered was 107°, the minimum temperature 52°; the highest temperature occurring in April, the lowest in November and December. The rainfall varies immensely according to situation, in some localities the amount being as low as 46 in., whilst at others over 200 in. are registered during the year. In the true swamp forests Orchids are very common, covering in masses the branches and stems of the trees. The trees met with in deciduous forests, owing to their fissured bark, are especially fitted for the support of epiphytes, and they are therefore developed to a degree which would appear most extraordinary were it not that they comprise mostly such plants as need light rather than dampness for their development. A host of Orchids make their appearance flowering at the height of the hot season, when they exhibit the splendour of their blooms in a wonderful manner. In the mixed forests which grow chiefly upon permeable strata, and which are

characterised principally by the prevalence of climbing plants, Orchids are also frequent, but chiefly such widely distributed forms as species of *Cymbidium*, *Pholidota*, *Erias*, *Saccolabiums*, *Dendrobiums*," &c. In the

**Botanical Gardens, Singapore**, the following succeed well, viz.: *Vanda Hookeri*, *V. teres*, and *Renanthera coccinea*, *Saccolabium violaceum* and *Harrisonianum* being very gay on the trees on which they have been established; also numerous specimens of *Phalænopsis grandiflora* and all the other species grown in baskets made of Cocoa-nut husk, four or five plants being placed in a basket. *Aerides*, *Calanthes*, *Oncidiums*, many *Dendrobies*, *Vandas*, *Saccolabiums*, &c., are also grown and flowered freely. A plant of *Renanthera Lowi* flowered in November, 1875, with eight racemes, four of which had over forty flowers on each. In the

**Botanical Gardens, Ceylon**, the an-

**Madagascar**, thus describes a scene: "The forest vegetation was wondrous in the extreme; huge timber trees abounded, their vast trunks and massive limbs being covered with innumerable banks of Ferns and Lichens, and matted with Lianas, to which other epiphytal plants were festooned. Here *Angræcum sesquipedale* is found luxuriating freely and in abundance. Here is a humid atmosphere under a tropical sun; the spontaneous growth and decay of vegetation has proceeded without intermission for cycles of centuries, producing scenes unsurpassed in the vegetable world. Here, too, in the less rapid portions of the streams, I first saw the *Ouvirandra fenestralis*, its lattice leaves waving like long dark green streamers below the surface, and its pink blossoms floating on the surface at the extremity of the long stalks. The trees which overhung the streams were covered with Orchids, Ferns, and

Mosses, one Lichen especially hanging from the larger trees in great abundance." In the

**Philippine Islands** the *Phalænopsis amabilis* grows luxuriantly on the stems and branches of the Mango trees, and fine specimens of *grandiflora* are met with growing in forked branches of the Orange trees, where the mean annual temperature is about 84°, the thermometer often registering 120° Fahr. in the shade during the dry season. Here they cling to the branches and forked stems of the trees, their long roots running up and down the smooth stems in a singular manner, some running 2 ft. or 3 ft. in length, and even occasionally measuring not less than 5 ft. On the summit of the Table Mountain at



Alnwick Castle: Percy Tower. (see p. 155).

annual rainfall, the result of five recent years' observations, is 82 in., spread over 200 days. The maximum and minimum temperatures in the shade are 89° and 57° Fahr. respectively, and the mean temperature of the air is 75°. The average maximum temperature in the sun is 162°, and the minimum on the grass 43°. In this district most of the large trees have climbers covering their stems and branches. Ferns and Orchids clothe the branches and stems which are destitute of climbers. *Aerides*, *Vanda Roxburghi*, *V. teres*, *Walkeri*, *Renanthera coccinea*, numbers of *Dendrobiums*, including the lovely *D. McCarthiae*, *Saccolabium guttatum*, *Bolbophyllum gracile*, *Cymbidiums*, *Celogynes*, *Erias*, &c., are numerous and fine. Many of the creeping Ferns, such as *Davallias*, *Nephrolepis*, *Polypodiums*, &c., grow intermixed with the Orchids upon the trees. Borneo, New Guinea, Java, Australia I must pass over. As each country becomes explored there can be no doubt that vast numbers of species and genera will be sent to us, of which we at present have little or no knowledge. Captain Oliver, in his work on

**The Cape of Good Hope** the *Disa grandiflora* grows, and is seldom or never met with anywhere else. The summit is frequently enveloped in mist, especially at the season when the *Disa* blooms, and it is also very cold, the mist being accompanied by a strong cold south-east wind. After this succeeds the scorching sun of lat. 33°. So much for general circumstances. The particular ones are that the *Disas* only grow along the steep boggy spongy margins of a stream which has water in it at all seasons, but which in winter must be so swollen as to cover the plants. In some parts the margin is completely covered with the *Disa* to the exclusion of other plants, but immediately behind the *Disa* is a margin of *Restios*, which, growing taller than the *Disas*, and bending over the stream, afford considerable shade to the roots and leaves, while at the same time they leave the flowering stalks room to peep out at the sun and exhibit their large showy blossoms. In a letter received by me from Prof. Reichenbach, in reply to a note from me, accompanied by a flower of *Cymbidium Parishii*, which plant,



by-the-by, flowered with me in June, 1878, for the first time in Europe, he says, "The Rev. C. Parish had written him to say that this *Cymbidium* was one of his earliest discoveries, having been found by him during his first long journey in the distant jungle in 1859. On the same occasion," says Mr. Parish, "I discovered *Dendrobium crassinode* and several other good things, but I was so bewildered then at the number of novelties of all kinds, that I did not know what to choose, as I could not carry everything. A beautiful little *Æschynanthus* I then found I have never since seen. I gathered a fair quantity of C. Parish and *D. crassinode*. I sent them with many other valuable things to Messrs. Low, with one box meant for Kew, but all six large cases got sunk in the Ganges. It was a cruel disappointment, as it was my first collection, and a most valuable one; many of the plants I have never met with again."

**Jamaica.**—In the grounds of the mountain residence of the Governor of Jamaica, situated at a distance of about eleven miles from Kingston, on a part of the Blue Mountain range of hills, at a height of nearly 3000 ft. above the sea, the following plants were, and doubtless still are, grown in tubs along the principal walks: Palms, *Alocasias*, *Caladiums*, *Eucharis*, and *Adiantums*. *Bougainvillea glabra* and *Allamanda Schottii* entwined some of the Cedar trees to a height of 40 ft. Here also are good specimens of *Latania borbonica*, *Pandanus utilis* and elegantissimus, and many other equally effective plants, whilst to crown all is a magnificent specimen of *Poinsettia pulcherrima*, a plant about 12 ft. high and 30 ft. in diameter, of the most elegant shape and appearance, its branches tipped with their enormous bracts drooping to the ground, one head measuring from tip to tip of the bracts 2 ft. 6 in. in diameter. Leaving this, and following the course of a winding walk, we come to a grove of Mangoes, through which we descend by a flight of steps, on each side of which and throughout the grove are placed clumps of native Orchids, *Cattleyas*, *Oncidiums*, and *Phaius* being the most common; but many others, both epiphytal and terrestrial, together with an almost endless variety of native Ferns. The fact that Ferns are almost always associated with Orchids in their native homes would seem conclusive evidence that it is wise to subdue the direct rays of the sun, for the Ferns always prefer a somewhat shaded position, and if subjected to an excess of light, are very speedily injured, and if the excess is continued, the probability is that the plants will speedily perish. It is well known that many exceptionally fine forms are sent to us from Costa Rica. The quick-running steamers now are able to bring cases of plants at a much quicker rate than used to be the case when Mr. Skinner first sent home some of his discoveries, which in a great measure gave an impetus to the earlier growers and admirers of Orchids. From

**Costa Rica** we get the lovely and somewhat difficult-to-manage *C. Dowiana*. Here in its native home the climate is the most regular and agreeable in the world, and the greatest difference between the temperature of the hottest and coldest day at San José, based upon ten years' observation, is less than 20° Fahr. The mean temperature for 1875 was about 69°. From the middle of May until the end of October it rains almost every day, and from the middle of December to the middle of April only exceptionally. "On the mountains of

"**British Guiana,**" writes Dr. Schomburgk, "Agaves, Cacti, Mosses, Gesneras, and Orchids cover the rocks that are partially bare of soil, whilst in the clefts and fissures of the mighty

sandstone blocks some of the most charming Orchids are found. Mention may be made of *Cattleyas*, *Odontoglossums*, *Oncidiums*, and *Maxillarias*. About 100 ft. higher the charming *Sobralia Elizabethæ* in all its varieties, with flower-stalks from 6 ft. to 8 ft., appeared in masses through which we had to clear our way with our cutlasses." Speaking of the continued variety to be met with on his journey, he says: "This constant change brought us to the forest, where spread before us lay a small marshy plain on which Flora had assembled her most beautiful treasures. The whole plain was covered with the dark blue *Utricularia Humboldtii*, the most beautiful species of the genus, with red-tinted flower-stalks 3 ft. to 4 ft. high, from which 3 to 4 of its curious flowers were suspended. High above these more tender plants rose the flowers of the magnificent *Cypripedium Lindleyanum*, and other choice Orchids. Franz Keller, travelling along the

**Amazon and Madeira rivers**, after describing the scenery and the majestic Palms, says: "But more than all is the profusion of Orchids and Bromeliads that excite our attention; these bright children of the Tropics envelop with dense foliage as well the fallen and mouldering trunks as those yet upstanding in full vigour and bloom, thus forming hanging gardens of astonishing magnificence, which reveal leaves and flowers of the most irregular shapes and colour." M. Roezli informs us that in Bona Ventura, in Choco, he found *Cypripedium parviflorum* and Roezli, also *Cattleya chocoensis*. At Antigua he discovered many *Masdevallias*, also *Odontoglossum vexillarium*, *C. gigas*; *Epidendrum Frederici Guilielmi* at North Peru, also *Masdevallia amabilis*. At Sierra Madra he discovered *Odontoglossum madrense*, *pulchellum citrosmum roseum*. At Caraccas, in Venezuela, he found the Roezli form of *Cattleya labiata*. In the valley of Cauca, in Guayaquil, he also gathered *Masdevallia chimera*, *Pescatorea Dayana*, and many others. M. J. Van Volxem tells us that none of the beautiful *Odontoglossums* brought over from Bogota are to be found on the Savannah of Bogota (8200 ft. above the level of the sea), nor yet above it on the slopes of its mountainous gorges. "On my road to Susagasuga," he says, "I began to find examples of the same habit as *O. serratum* and *Odontoglossum triumphans* at an elevation, I should think, of more than 6000 ft.; then just above Susagasuga, at an elevation of about 5500 ft., I found *Odontoglossum Alexandræ* and other species in full glory in the month of April. On the plain, some 500 ft. lower down, are to be found plentifully all the splendid varieties of *Cattleyas*, such as *Triana*, *Wagneri*, *quadricolor*, *Warszewiczii*, &c., no two clusters of plants being identical. All the *Odontoglossums* grow in places where they receive plenty of light, such as on trees along the margins of forests. The climbing species, as *O. serratum* and *O. zebrinum*, &c., grow along the trunks of the large trees. *O. Alexandræ* is generally found on the protruding limbs of the trees from 6 ft. to 28 ft. from the ground. The bark of the trees and branches are covered with a coat of living Moss  $\frac{1}{2}$  in. thick at the most, and this is always wet, either from the rain or from the dew. In this Moss the *Odontoglossums* extend their roots, but they seldom, if ever, cling to the bark itself; they live in the Moss, and it is the Moss, not the plants, that adheres to the bark. Such are the conditions under which Orchids grow naturally, and I have alluded to them at some length in the hope that some useful inferences may be drawn from them."

**Orchid Houses.**—Average sized span-roofed houses are best for all the sections, the

larger for such as *Dendrobes*, East Indian plants, and *Cattleyas*, whilst houses of less height will be best for the *Odontoglossums* and those of a dwarfer habit of growth, the object in each case being to get the plants as near the light as possible without their being in danger of scorching when the sun may suddenly burst upon them. The side stages of the houses should be so constructed that a layer of sand or spar may be spread upon them. I, however, consider small coke far better than either, as it is of a dark colour and well holds the moisture poured upon the stages, while at the same time it allows any excess of water to pass quickly and easily away from the plants. The centre of the houses may also be of a similar character, or a bed filled with tan, with lattice-work over it, will be found of great service to such plants as *Dendrobiums*, East Indian plants, and many of the strong growing *Phaius* and evergreen *Calanthes*. Ventilators should be provided both at the top and bottom, those at the bottom being covered on the inside with perforated zinc to prevent the entrance of birds and bees, and to make it the more difficult for snails to crawl in and commit the havoc they occasionally do. Good shading must also be given; where movable rollers can be used they should always be provided. The shading should be run up when the sun's rays are diminishing in force and power, and the temperature in the houses should be allowed also to run up 5° to 10° by the aid of sunlight. Whilst growing all Orchids enjoy warmth and moisture, and, according to the locality from which they come, so will the amount of heat be that must be given; when growth is finished a less amount of heat and moisture will be requisite; and here, again, according to their native habitat so will be the length of time during which they should be rested; *Dendrobes* especially will be benefited by a good season of rest, though even in this family it will be found that many will be resting whilst some are in full growth, or others in full bloom. The utmost care and attention must be given to keep the plants perfectly clean. Doubtless they suffer from the attacks of insects in their native haunts, but in our houses insect pests appear to increase with such rapidity and persistence, that unless great watchfulness is exercised the plants speedily become permanently disfigured and ultimately die. In potting it will be necessary that care is exercised. The pots should be either new or thoroughly clean; the crocks, too, should not be used twice without being washed. The Sphagnum Moss should be freed from all litter and grassy roots, whilst the peat, which should be of a very fibrous character, should have all the sand and earthy matter knocked or shaken out of it as it is pulled to pieces. Be careful to keep the greater part of the plants well up in the centre of the pot, so that the water may the more readily pass away from the rhizomes and young "breaks," and make it a point to keep the plants in pots as small as can consistently be managed, of course ever bearing in mind their health and the condition of the roots. Do not practise the habit of cutting through the plants to induce a greater number of growths. This may succeed with a few sorts, but great danger is often incurred, and instead of increasing the plant a loss of bulbs and growths often happens. All imported plants should at first be watered sparingly, then whether on blocks, in baskets, or fixed in pots with crocks or charcoal, as soon as the new roots push out and the breaks start away, a larger amount of water must be given, and every effort made to encourage quick and active growth. These principles, guided of course by surrounding circumstances, will, if carefully carried out, lead to a satisfactory result.



**Cymbidium Parishii.**—Mr. Swan, of Fal-lowfield, writes: "I have just flowered the rare *Cymbidium Parishii*, with four flowers on a spike; it is certainly a most beautiful species."

**Cœlogyne corrugata.**—An imported piece of this pretty and somewhat uncommon Orchid is now bearing some half-dozen spikes in my little stove. The slender flower-spikes are between the leaves of the current growth, each with usually two flowers, pure white, with lip striped with orange and brown. A good deal smaller than *C. cristata*. It has flowered several successive years.—G. PIM, *Monkstown*.

**Making up Specimens.**—The theory regarding this put forward by Mr. James must, I think, be wrong. That two, three, or any number of plants put together when imported and grown for three or four years before being exhibited are not more creditable than plants only put together a day or so before the exhibition, I think few will believe. Plants so grown are easily discernible, and as they require much skill to get each piece to do well and make it a fit subject for exhibition, I think they should be considered as single plants. If Sir Trevor Lawrence's collection at Regent's Park did not al. consist of single specimens, the exceptions were very few. *Oncidium unifolium* might be one; certainly it had been grown in one pot for some time, I should think, and might fairly be termed a single specimen. Allow me to say with Mr. James that I never had one of my plants of *Oncidium curtum* open until July 5; the last opened on August 2; it had been kept in a cool house with *Odontoglossums*. It was by far the best-coloured flower I have yet seen. Could the very strong light of this summer have robbed this charming Orchid of its colour?—A. G. CATT.

## THE ROSE GARDEN.

### ROSES PEGGED DOWN.

ONLY those who have seen the glorious displays that Roses are capable of producing year after year when grown in this way can rightly estimate their value; and as the early autumn is a good time to begin this system of growing Roses, I therefore now allude to it. Hybrid Perpetuals are the most effective for this purpose, and it is best to choose those that are known to have a vigorous habit. Amongst the dark varieties which I have tried for this purpose, I find the best growers to be Alfred Colomb, Charles Lefebvre, Maréchal Vaillant, Madame C. Wood, Annie Wood, General Jacqueminot, and Docteur Andry. The best light varieties in our beds are *Centifolia rosea*, John Hopper, Anna Alexieff, Souvenir de la Reine d'Angleterre, Madame Vidot, Jules Margottin, and Madame Rivers. These, it will be remarked, are all old Roses, but our beds were made and planted thirteen years ago, and yet are as vigorous as when first planted. They should be on their own roots, as plants budded on the Manetti or any other stock cannot be depended upon, for the suckers they usually send up will be a constant source of trouble; and, unless they are cut away as fast as they show themselves, they seriously check the growth of the Rose itself. It requires an experienced eye to detect the difference between the Rose and the stock; consequently, own-root Roses are in every way the best.

**PREPARATION OF THE BEDS.**—As the beds are to be permanent any extra care in the way of time or materials expended upon them will be amply repaid in after years; indeed, without thorough preparation, Roses cannot be expected to last many years in a satisfactory condition. The amount of labour required will in a great measure depend on the nature of the soil to be dealt with; if of a poor light character and only 10 in. or 12 in. in depth, all the old soil should be taken out to a depth of 18 in., and a mixture of three parts good strong loam and one part rotten manure substituted. If possible all this work should be done in the early autumn months, when

the weather is fine and dry, as the materials incorporate in a much better way in dry weather than in wet, and as a result the roots will take more kindly to the new soil. There are many places in which very good Roses may be grown without the aid of new soil, and in such cases a good dressing of thoroughly rotten manure incorporated with the soil to a depth of 18 in. is all that is necessary. In other cases, the removal of a portion of the old soil and the substitution of an equal quantity of loam and manure will suffice. In every case, however, the soil must be trenched from 18 in. to 2 ft. in depth, and if this is done three or four weeks before the Roses are planted, the soil will have time to settle down and be in a better condition for the reception of the plants than it otherwise would be.

**PLANTING.**—If the plants are in pots they may be transferred to the beds at any time, but the best months for planting Roses out of pots are October and May. The first mentioned month is to be preferred, because there is a better chance for the plants to get established before the season for making an active top growth takes place; another good reason why autumn planting is the best is that when growing weather comes in the spring the plants will make a much more satisfactory growth the first summer than would be the case if the planting were done in spring. Roses lifted from the open ground may be planted at any time in mild weather from November to March.

**PRUNING.**—Of this little will be necessary the first two years, as all the growth must be pegged down to cover the beds. The plants should be planted 1 ft. from the sides of the beds all round and 2 ft. apart, and the centre of the bed should be filled in with plants at the same distance from each other. This will give ample space for the shoots to be laid down to meet each other, which they will readily do in three years from the time of planting if all goes on well. As soon as there is young growth enough to take the place of that which has flowered, the old flowering wood must be cut away every year, and the young shoots pegged down to supply its place. If the points of these shoots overlap each other they must be cut back. A well furnished bed of pegged Roses should have the surface covered all over with shoots about 9 in. apart. Until there is growth enough to cover the surface, the old wood must be allowed to remain for another year; by pruning in the lateral growth to a spur with two or three buds they will flower again. The pruning should be done in January or February when all the old pegs should be removed and fresh ones supplied. Our pegs are cut from the Pea sticks that have supported the Peas one season. I have tried iron pegs, but I find they do not answer so well as the others.

**SUMMER MANAGEMENT.**—This consists in picking off all dead flowers and supplying the plants liberally with water, and if manure water can be had so much the better. In any case it is important to remember that in order to produce satisfactory growth they must have plenty of moisture. It is best not to be in a hurry to peg down the young growth, as it gains greater consistency by being allowed to grow erect. The end of July is a good time to peg it down for the first time in the season; a few stray growths will appear later than this which for appearance sake may be pegged down when they have reached the height of 3 ft.

J. C. CLARKE.

### ROSES AT SHEFFIELD.

In these hard times Roses are the great paying crop, either out-of-doors or under glass, and there is little fear of a glut in the market or over production. Only bring Roses within easy reach of our dense masses of population in large towns, and there hardly seems any limit to the demand for them. The time will doubtless come when every man will grow his own Roses, but that time is not yet, and tens of thousands of the working classes who cannot grow them would purchase them. Perhaps the highest and most im-

portant work that the National Rose Society could accomplish would be to bring Roses within the reach of the working classes and the poor. It is a step in the right direction to hold their Rose shows in some of the more dense centres of population. Widening the area of Rose culture is hardly more important than extending the season of Roses. Not a few Roses are almost as provoking as if the sun were to set an hour after noon. Now the Roses are at their meridian splendour, and anon it is night. Could not the Rose Society exert itself to weed out the perpetuals in name from our lists and give us a few more real Perpetuals? By the way, who was responsible for the name of Perpetual and Hybrid Perpetual to so many Roses that seldom or never bloom but once a year? and who certifies that any particular Rose is a perpetual bloomer? The latter may almost be counted on the fingers of one hand. The best of all perpetual Roses I know is La France, and that is three-fourths Tea. La France might be used to lay the foundation of a new class of real perpetual blooming Roses.

**Rose Growing v. Rose Showing.**—It seems a pity to make the distinction, but I must remind Canon Hole that he is partly responsible for it. No one values or enjoys Rose shows more than I do. Shows like that held at Sheffield, followed by such admirable sermonettes as only Canon Hole can give, are most useful standards to Rose culture. They are the loud shots that arrest notice and command attention. But they are, however, by no means as unmixed as the Canon shows. Those who grow Roses merely for showing seldom win the prizes, and if they do, the latter are of little use to themselves, and render no service to the culture of the Rose. In fact, Rose growing for showing is simply a species of speculation, and may, unless reined-in by prudence and guided by the love of the Rose, convert a very Eden into a bear garden. The making of Roses more plentiful in the gardens of the poor, and the introduction of more perpetual Roses is higher and better work for the National Rose Society than the holding of any number of great shows. Growers of Roses should be careful not to say a word in disparagement of the growers of mere garden Roses; these are the great majority, and need encouraging the most. Many of them also grow the most beautiful and perfect Roses. Even at Sheffield I have been told by a first-rate rosarian that better Roses were seen in a private garden near the town than any that were shown. Be that as it may, it is hardly worthy of our Canon to imply that those who grow garden Roses have seldom or none worth showing. Were this so, that is no reason why they should not still grow and delight in their garden Roses.

**Strong Diet for Roses.**—The Canon will excuse me for mildly criticising his remarks on this subject. "Love me, love my dog," is all very well, but love the Rose, love the midden as well by no means follows. A good deal depends on constitution. No doubt Roses are gross feeders, but the feeding is not seldom overdone, and to convert a rosery into a straw-yard or an offensive manure heap, for the sake of cutting a few stands for showing, is to sacrifice months of pure pleasure for hours or days of pride; and besides, good garden Roses can be well grown in any fairly good soil without any rank or offensive manure and it is the home Roses that bring most happiness after all. The Maiden's Blush, the Old Cabbage, the Crested Moss, the Velvet Damask, the old York and Lancaster; these are names of Roses that recall memories sad, sweet, and glad—that are forgotten never. But there is no need to adhere to old Roses mainly or chiefly in the garden. All the best Roses should be grown as garden Roses, and grown as perfectly as possible. I quite agree with Canon Hole that he who loves Roses loves them all. The most attractive Roses here are some wild Briers climbing up trees and sending out sweet sprays of grace and beauty as those that made Canon Hole pull up sharp on his way to the Palace. Roses of all sorts and types are needed, and there is still miles and miles of bare



bricks to cover with Teas, Noisettes, and such magnificent so-called Perpetuals as La France, Charles Lefebvre, Marie Baumann, Beauty of Waltham, Duke of Edinburgh, and Canon Hole. D. T. FISH.

**Rosa rugosa.**—Having seen in THE GARDEN of July 30 an inquiry made regarding the introduction of this Rose, I send the following extract from Green's "Universal Herbal," a work published in 1816: "*Rosa rugosa* (Wrinkled-leaved Rose).—Fruits globular, smooth; peduncles, stem, and pedicels prickly; leaves tomentose underneath; native of Japan." This shows that the plant must have been known to botanists for many years. M. HUTTON, 46, *Scarsdale Villas, Kensington*.

**Sweet Peas on Standard Roses.**—Last winter, when we found some of our old standard Roses becoming too shabby to remain in the pleasure grounds, we shifted them into an old corner in the kitchen garden, with the object of keeping them for supplying a few cut blooms; but the winter which followed their removal was so severe as almost to kill some of them, and in spring they looked so bad that we decided on embellishing their naked heads. Accordingly, at the base of each stem a few Sweet Pea seeds were sown, and these succeeded very well, running up and converting the old shaggy heads into beautiful masses of Sweet Peas. They are not, however, so thick as to completely cover up any young wood the Roses have made, so that they have still a fair chance of recovering. Sweet Pea flowers are universally liked, and many half dead bushes might be appropriately adorned with them at this season. —M.

**Flowers amongst Roses.**—When our Rose bed occupants are in full beauty, no other attractions about the same spot are wanted; but after the first grand show is over, and when a good bloom can only be seen here and there, their effect flags, and if other flowers were planted amongst the Roses a succession of gaiety would be maintained. Geraniums and similar plants are not very suitable for mixing with Roses; but Stocks, Heliotropes, Mignonette, Carnations, and old-fashioned plants of a similar kind are simply excellent amongst Roses. Most of our Rose bushes are planted 3 ft. and 4 ft. apart, and between all of them we plant Stocks, Carnations, and sow little patches of Mignonette. The greater quantity of Rose flowers have been over for some time now, but the Carnations are blooming beautifully, and beds which would otherwise not have been worth looking at are still bright spots, from which we gather blooms enough to fill our flower glasses. Mixed beds of this kind are a great comfort in a season like the present. —CAMBRIAN.

**Rose Blooms.**—In THE GARDEN of the 18th of June, "Hardwicke" complains of the scarcity of Rose blooms, and invites correspondents to communicate their experience. Mine is that in no previous year have I seen such a profusion of pure, healthy Roses. They have come, if I may be allowed the expression, in floods, and are most beautiful. The climate here seems favourable for Roses. An English friend once said, "Roses grow here as they do at Hampton Court." The collection is good, and was lately added to by a friend, who sent from Lyons sixty-three plants in excellent condition. Preparations had been made for their reception, and on their arrival (about Nov. 25) they were at once planted out, the weather proving favourable, some in borders, some in plots, but principally against walls. They were then well mulched, and left without further protection to abide the coming winter. Twelve Teas were placed in the greenhouse; of these, two died—Marie Van Houtte and Niphetos. As spring advanced all the remaining sixty-one showed life and vigour, and they are now in full bloom, covered with lovely Roses, except four or five which seem late. I have not observed a green fly on one of them. —A. G., *Mid-Scotland*.

**NOTES FROM HANDSWORTH NURSERIES.** In the nurseries of Messrs. Fisher, Son, & Sibray, near Sheffield, as in all great nurseries, something is always to be seen that is interesting to cultivators. An interesting subject there at present is a fine plant of the as yet little known *Bomarea* Carderi, which promises to be a grand conservatory climber, not unlike the *Lapageria* in its general aspect, although of an entirely different habit. The Handsworth plant has three shoots, one of them about 20 ft. long—the growth of three months. It bears several fine trusses of flowers and one cluster of seed-pods. The flowers are borne in a kind of drooping umbel, but stand out rigidly apart, and are about the same size and of the same shape as a *Lapageria* flower, and very showy and pretty, being of a pleasing rosy colour shaded with green and spotted. When I saw the *Bomarea* the first time I did not think so much of it, but when well grown and flowered it is a splendid object. It seems to grow, flower, and seed all at the same time with perfect freedom. The number of flowers in a cluster were from seventeen to twenty-four.

**New Pelargoniums.**—One of the novelties of the year at Handsworth are the new French zonal Pelargoniums of 1881—Lemoine's. I am not sure I can describe these, but they appear to be a clear break in the way of flower from anything of the kind hitherto raised in this country. La France has an enormous truss of a peculiar orange-crimson and magenta shade. General Favre is double, truss very large. It is not a dense double, but rather large and open; colour a suffusion of salmon and rose—a most conspicuous object. Charles Darwin is another rather extraordinary kind, and there is a single white that excels for size anything in that way that I have yet seen. The most striking features of these Pelargoniums is their immense trusses of flower and their new and peculiar colouring.

**Begonias.**—A fine collection of double and single-flowering kinds afforded one a very good idea of the comparative merits of the two kinds as free-growing showy subjects. The impression of most people is that the double kinds are nowhere beside the single ones. The former neither grow nor flower so freely, and most of them are of pigmy size compared with some of the latter. A grand showy seedling raised at Handsworth was shown at the Rose show which promises to grow as large as the old fuchsioide. The flowers are not so large as some of the other single kinds, but they are borne in greater profusion, and are of a pleasing colour. One of the most interesting objects to gardeners in this nursery is a *Stephanotis floribunda* growing in a cool house—a house in which Tea Roses, Clematis, *Lapagerias*, &c., are sheltered during the winter. It is an immense plant, covering nearly the whole roof of a long house, and is simply smothered with flowers—far more flowers than leaves. Every joint, both on the old and young wood, produces its cluster, and not a mealy bug ever comes near it. This plant has been in existence for a number of years, and has led not a few gardeners to discontinue growing the *Stephanotis* in a warm house, including ourselves, and the result promises to be equally satisfactory so far, for plants that were shy flowerers in the plant stove are flowering freely with Pelargoniums and the like. The perfect freedom of the plant from mealy bug is not the least advantage of the cool system, for in the stove it is actually a bug breeder, and one of the worst in that respect.

At Handsworth, like many other places, severe losses have been experienced during the past winter, especially among outdoor shrubs, but the Japanese plants have escaped in mostly all cases with little or no injury, and some of the bronzy-leaved Maples are now very pretty and attractive. In the border of mixed flowering and other shrubs I was struck with a shrub about 2½ ft. high, planted at intervals and producing a mass of white flowers, giving the plant so much the appearance of a white greenhouse Azalea, that one had to go close to it to make sure that it was not a member of that family. This is the *Cistus laurifolius*, which

in a forward season like the present flowers at the end of July. The flowers do not last above a day, but they are produced equally quick, and the bush is always covered with flowers, as is the ground also under it with the fallen petals. This was the condition I saw it in the third week in July, and quantities of buds in all stages of development were coming on, and would continue to open for a week or two at least to come. It is one of our best late-flowering shrubs, coming in after most other things are over. The plant is so like an Azalea in the foliage, that it might well be taken for one when not in flower. S. W.

## THE GARDEN FLORA.

### PLATE CCXCVII. *CEREUS C. M. HOVEY.*

**SCARLET flowering Cereuses**, of which *C. speciosissimus* is the type, are but few. Many hybrids have been raised—crosses with *Phyllocactus*, and most of them have been called *Phyllocactus*, but the following are true Cereuses, having the stems clothed with spines and furnished with many angles, while the *Phyllocacti* have mostly flat, smooth stems. *Cereus C. M. Hovey*, the subject of the annexed plate, was raised by the well-known American nurseryman of that name. It is an improvement upon the old *C. speciosissimus*, on account of its compact habit and very brilliant crimson flowers, the inner petals of which are shaded with violet, the centre of the petal retaining the normal colour, which gives it the appearance of being striped. The flowers are about from 4 in. to 6 in. wide, and are freely produced; stems tri- and quadrangular; spines not so strong as in *C. speciosissimus*.

***C. coccineus*.**—This is a plant near the type, but having more compact flowers, with very deep violet inner petals, stems not so robust as those of *C. speciosissimus*. Well worth cultivation.

***C. speciosissimus*.**—This well-known plant scarcely needs description; it grows freely when planted out in a warm corner and trained on the back trellis of a greenhouse or conservatory. The stems, which are tri- and quadrangular, are very spinose; flowers from 8 in. to 10 in. wide, rich red with violet tinted inner petals of good substance. It is the only original species in this section.

**C. J. T. PEACOCK.**—This is a hybrid named in complement to Mr. Peacock, in whose collection it was raised. Its flowers are very large (1 ft.) and of great substance; the petals are regularly arranged, about 1½ in. wide, acute, deep purple and richly shaded with violet; plant compact, branching freely, spines very slender; it has more of the *Phyllocactus* habit than the others. It flowered for the first time this season.

### Select *Phyllocacti*.

**P. ACKERMANNI.**—This is closely related to the Cereuses, having a few spines on the stems, which are mostly triangular. The flowers are produced freely, and are very bold, about from 6 in. to 8 in. wide, and deep crimson. A very good old plant.

**P. MULTIFLORUS.**—Flowers bright red, very free, but not so large as those of the preceding. Stems flat; when in good health tinted red. In flower from April to June.

**P. SALMONEUS.**—A hybrid with flowers from 6 in. to 8 in. in width, salmon coloured. A very good and distinct variety, with flat stems, spineless.

**P. IMPERATOR.**—Also a hybrid, and a strong erect grower. Stems flat. Flowers large, brilliant scarlet; habit good and compact. Stems glaucous in summer.











**P. TRIOMPHE.**—Flowers large, almost flat, brilliant red, and of good substance. Stem flat and erect. A good variety.

**P. CRENATUS.**—Flowers creamy-white in the centre, outer petals narrow and more orange. Plant erect, strong, regularly crenate, pale green. The flowers of this and of the following species are good substitutes for the Night-flowering *Cereus*, opening in the evening, and having a delicate perfume.

**P. GRANDIS.**—This is the best of the pale-flowered *Phyllocacti*. Its beautiful creamy-white flowers are produced freely from the base of the flat stems; in the centre they are white, the outer petals being narrow and yellow, which, added to its fragrance, makes flowers of this equal to those of *Cereus Macdonaldiae* or *grandiflorus*. With me it has continued flowering six weeks, off and on. The stems are round at the base, then flat, and very fleshy.

**P. EDWARDSI.**—A strong erect-growing variety, with bright rosy flowers, very early and lasting. In habit like that of *crenatus*. Well worth growing.

**P. PHYLLANTHOIDES.**—A small-growing plant with pale rosy flowers which open very slightly, giving them the aspect of a Rosebud. The stems are slender, round at the base and flat above, with slight regular crenations.

**P. CRENATUS COCCINEUS.**—This is a *crenatus* in habit, but it has scarlet flowers which open very widely. A distinct and good variety.

The whole of the above, with many more, have flowered regularly at Sudbury House, Hammersmith, for several years; and though there are several more varieties, I think the above a good selection. J. CROUCHER.

## THE INDOOR GARDEN.

### NOBLE MELASTOMADS.

**MEDINILLA MAGNIFICA** is a magnificent stove plant, which may be successfully grown in any shady, moist corner, where many other plants would fail. We have a large plant of it in a tub in an old dark stove in fine condition, its long pendulous racemes of flowers and showy bracts and stalks of the brightest rose being produced on the ends of the branches from the leaf axils and from the old hard wood in great profusion. Where room can be spared for it it soon develops into a large shrub. Mr. Green, at Pendell Court, has a grand specimen of it. Then we have another noble foliaged *Melastomad* in

**CYANOPHYLLUM MAGNIFICUM**, whose immense leaves are so telling among stove plants. Its leaves are on the upper surface rich velvety green with light coloured veins, and on the under side a deep blood purple. How rapidly it grows, too! A few small plants of it which I struck in the spring of this year have now eight or ten pairs of leaves, which are nearly 2 ft. long and about 9 in. wide. Another equally beautiful plant is

**SPHEROGYNE LATIFOLIA**, whose leaves are something like those of the *Cyanophyllum*, but recurved, and have a glossy appearance. The stem is thickly covered with light brown hairs. It is a rarer plant than the two above mentioned, owing, I suppose, to the difficulty generally experienced in its propagation.

**MICONIA PULVERULENTA** is another fine-foliaged plant, something in the way of *Cyanophyllum*, but it differs from that in colour and in having rusty red hairs on the stem. The leaves, too, are covered with a fine down.

**CLIDEMIA VITTATA** has leaves almost as broad as long, slightly recurved, and of a pale shining green, with a streak of dull white running along the central and two parallel nerves. It is dwarfer than either of the above and branches freely, forming a beautiful compact foliaged plant. Its

flowers, which are like those of *Sonerila*, are produced on the ends of the branches in autumn.

**PHYLLAGATHIS ROTUNDFOLIA** is one of the rarest of fine-foliaged *Melastomads*, and no wonder, if everyone's experience of the plant is anything like mine. I tried it all ways last spring, but grow it would not; so I took off the tops and struck them, hoping to overcome its obstinacy in that way. Still it proved loath to grow, and it is only after much nursing that we have managed to get several plants of it in anything like character. It is a singularly beautiful plant, the rich shining metallic tint of its almost round leaves, which are about 9 in. across, being unequalled even by the metallic *Alcacia*. It is easily propagated owing to its habit of producing roots along its stem.

The whole of the above plants like shade, plenty of moisture both in the air and at the root, and a rich loamy soil. In potting care should be taken

### CULTURE OF THE LAPAGERIA.

We are most unsuccessful in growing this beautiful plant. What treatment should it have? We have a greenhouse, and have had plants both in pots and in the ground with no success. Does the sun injure it?—W. H. M.

[*Lapagerias* seldom fail to do well when the conditions under which they are placed are such as to suit them, but their habit and nature (the white and red varieties are alike in this) differ considerably from that of most other plants. They are indigenous to Chili, and come under the head of cool greenhouse plants, although they will bear a little warmth in the spring about the time growth commences. They possess a decided twining habit, and are never seen to the best advantage unless trained near the roof of a house, up a pillar, or on a back wall, for any of which positions they have few equals. They are also quite suitable for pot culture, but though slow growers the plants



*Melastoma malabathrica* (type of *Melastomad*)

not to remove them until the youngest pair of leaves are developed, as unless this is done the plants are almost sure to suffer however carefully the potting is managed. Spring is the best time for the propagation of these plants, the tops of which may be taken for cuttings, and also the lateral shoots as soon as they push to about 4 in. in length. I find it a good plan to cut away about half the leaves from the cuttings, as if left on they exhaust the resources of the young plant. A good sandy peat will suit for the cuttings, which should be set in a warm propagating frame till struck, when they may be potted in a richer soil, and treated as advised above. The *Medinilla* and *Phyllagathis* are East Indian; the others come from Tropical America.

The genus *Melastoma* itself yields some highly ornamental garden plants, one of which, *M. malabathrica*, now in flower in the stoves at Kew, is among the finest stove plants we have—handsome both as regards flowers and foliage. Z. B.

cannot be kept for an unlimited time with their roots confined within the limits of even a large pot without in the end becoming enfeebled. This, to some extent, arises from the natural disposition of the plants to spread their growth more from suckers produced yearly from the base of the previous growths than by extension of the old preceding year's shoots, although these annually make some extension and bear flowers.

*Lapagerias* have a decided objection to being fully exposed to the sun, but the extent to which they will bear sunshine varies considerably with the character and position of the house in which they are placed; and they are still further influenced by the temperature kept up in the early spring. For instance, if they are in a house where a little more warmth is used through the winter and early spring, such as is the case with many conservatories, they are excited into growth earlier than where no more heat is employed than is requisite to exclude frost, and consequently



the young shoots and leaves are comparatively more tender than if the growth was made later, and when as the days lengthen the sun gets more power, than the young growth can bear without slightly shading, that is, if the plants are trained to the roof of a lean-to house facing the south, or on the sunny side of a span-roofed structure that happens to stand with its ends east and west, the sun is too much for them; in a cool, span-roofed house standing opposite to this, that is north and south, they will sometimes do at the north end without anything on the glass, but more generally they succeed better with a thin shade. But no position seems to suit them better than the north side of a span-house that stands east and west, as in such cases the sun's rays come upon them less directly. They do equally well in a lean-to house facing north, but so located they are better planted in the front than at the back, for although disliking full exposure to the sun, they grow stronger where there is plenty of light, other matters connected with their cultivation being equal. I have gone thus far into detail in the important matter of shading with a view to make clear in what cases it will most likely be necessary to protect them from the sun and those in which no shade will be needed, for when the young growth of these plants is subjected to more sun than it can bear, it not only stunts and disfigures the leaves, but it destroys the tender points of the shoots as effectually as if they were crushed between the fingers, and, unless in the case of strong suckers that have not advanced far, when once stopped they do not break again freely, as most other plants would, but at once form flower-buds at the axils of the leaves below. They are slow growers, that is, it takes several years for small ordinary trade-sized plants to get large enough to form the strong sucker shoots capable of producing a full complement of flowers. Though the spreading nature of the underground growth requires their being turned out where they will have room to extend, it is a mistake that not unusually ends in failure to turn a young weak plant out in a body of soil much greater than the roots can take possession of before it becomes sour. For this reason it is much better, when beginning with an ordinary size of trade example to keep it moved on to larger pots, as required, until it has gained size and strength. If so treated till it has got established in an 8-in. or 10-in. pot, the prospects of its attaining large dimensions in the least time are much greater. They are moisture-loving plants, but the character they get for requiring the soil to be kept moist, especially whilst growth is being made, has frequently led to so much water being given that the soil gets to the consistency of putty, in which case the roots perish. The fact of more water being needed than in the case of most things necessitates the material being composed of a good proportion of turfy matter, and also of enough sand being added to it to prevent its being too retentive of moisture. They are subject to the attacks of scale, thrips, red spider, and aphides, any of which if left for a considerable length of time undisturbed do very much injury. "W. A. M.'s" meagre communication is insufficient to show the cause of failure, and I have thought that the above details of the plant's requirements may not only afford him a clue to his want of success, but might be of use to others in a like position. For, easily managed as *Lapagerias* are, it is a very common occurrence to see them in any thing but the vigorous state they are capable of being grown to.—T. B.]

**Thunbergias.**—I send you a few blossoms of *Thunbergia alata*, the produce of a packet of seed sown this spring. There were five distinct colours; that with pale buff flowers and a dark throat is, unfortunately, not now in bloom. It seems strange such a pretty and easily-managed climber is not more grown than it is.—GREENWOOD PIM, *Monkstown*. [With this came very handsome blooms of this good old-fashioned plant.]

**Cereus lividus.**—This Cactus has bloomed with me for the first time, though I have had it for many years. My gardener, Mr. Jesse Dawe, tells me it is *Cereus giganteus*, and that where he formerly lived at Didlington Hall, Brandon, Norfolk, there were immense plants, which the head gardener told him had never flowered during the thirty years he had lived there. My plant is between 6 ft. and 7 ft. high and 1 ft. in circumference. As it has never bloomed, I used it as a stock, and it is grafted with some good *Euphyllums*. JOHN LUSCOMBE, *Addington, Torquay*. [It is *Cereus lividus*.]

## THE KITCHEN GARDEN.

### KEEPING VEGETABLES IN WINTER.

**BROCCOLI AND CAULIFLOWER.**—There are various makeshifts as well as systematic ways of preserving Broccoli in winter, but not on any very large scale have I seen the matter attempted. Some means of cheaply doing so by means of felt or oiled paper covers would surely be worth trial on a large scale. A small field of Broccoli near our door was before last Christmas sold by a grower to a dealer on the ground for the sum of £400, not a head of which was ever cut by the latter; such are the risks of the winter in vegetable growing. Veitch's Autumn Cauliflowers can be kept well until after Christmas by lifting them when ready and planting them closely together, leaning them on their sides and scattering clean straw over them, not over thickly, when necessary. Snow's Winter White treated in a similar way will push the Broccoli supply further over the winter. It must be acknowledged that the lifting process is a check to growth, but after it will be simply a question of having them in this way or none at all, as occurred last winter. I have hung them up in an open shed, also planted them in a shed facing the north. I have also lifted and planted them close together in an unheated Peach or orchard house, but have found no plan so satisfactory as lifting them and storing them close together in the open air in some sheltered place, say under old Apple trees, and covering them with mats or straw as occasion may require. I have seen an attempt made to grow Broccoli under glass in a very large ridge and furrow house, but am not able to speak as to the result.

**LETTUCES AND ENDIVE.**—Much greater success will attend the cultivation of Lettuces under glass. It is a common plan to lift all grown Lettuces about October and transplant them into cold frames or pits, but this, although found to answer tolerably well, is not equal to growing them in turf pits on the spot where they are to stand the winter. The Cabbage sorts are best—some one of the many varieties of the hardy *Hammer-smith* kind. The pits may be any width from 6 ft. to 10 ft., and may have but a slight slope to the sun. The Lettuce may be planted much closer than for summer culture in the open air, the pit lights to be used only during very wet or very frosty weather. I say nothing of the plan of raising an artificial slope in the open garden, on which the Lettuces may be grown high and dry, to be hooped over in winter, and covered with mats when necessary. This is a good plan when there is no heavy falls of snow or extra severe frost. Endive may be treated in the same way, and there is no more acceptable vegetable than a well blanched crisp Endive in winter, not only for salad, but in the hands of a good cook for stewing. Endive is often forced into growth in heat like Chicory, but the produce by that plan is tough and flavourless. I have kept it packed together in a cool airy house well through the winter after being tied up and blanched in the open air. Anyone de-

sirous to preserve it in quality may do so in wide cold pits close to the glass, from which mice must be excluded. I have a lively remembrance of a fine lot, which I had stored with much complacency to last well into the winter, when one day some of the foliage looked conspicuously withered, and on handling it I found that field mice had been feasting on the stalks close to the ground. Endive may be very successfully blanched and preserved by covering the rows with slates either flat on the plant, or ridge fashion like a little roof—the taller the best late in the season—and filling in between the rows with leaves to keep frost out of the soil and from the slates, for if a frozen slate lies on a plant for a short time the plant is spoiled. Flower-pots may be used for the same purpose, but they are open to the same objection as the slates in the matter of frost, and they exclude light and ventilation too effectually. I think there is no doubt whatever that the French cloche system can be satisfactorily carried out in England as well as in France, at least in the south. A clear glass cloche is a much better covering than a slate or a flower-pot. I have seen the plan tried with good success in the south with very indifferent cloches, but we have never given it a fair trial on a sufficiently extensive scale, simply because of the difficulty of getting out of the old groove. French mid-winter Endive is, however, the envy of every gardener who sees it, and more especially if it comes down to the country from Covent Garden for a winter party. The green and white curled Endives grown and blanched successfully in winter must be classed among the choicest of green vegetables. I have found that Lettuces and Endives when stored in a house or pit in winter must not be neglected as regards water at the root, but at the same time the greatest care must be taken to keep the foliage dry.

HIBERNIAN.

### GREEN VEGETABLES IN WINTER AND SPRING.

"H." SHOULD have no difficulty in producing a good supply of vegetables in winter and spring if the proper kind of structures are erected for the purpose. In order to protect autumn and early winter vegetables nothing is better than cold pits sunk 2 ft. under ground, the back wall being carried 2 ft. 6 in. above the ground level, and they should be 100 ft. or 200 ft. long and 7 ft. wide, the back wall being 2 ft. 6 in. higher than the front one. This gives the roof a good pitch and insures plenty of light. These pits are easily protected from frost by covering them with reeds, mats, or stable litter during hard weather, but the coverings must be removed and full advantage taken of sunshine, if any, during the winter months. To have a good supply of French Beans, Tomatoes, Peas, Broad Beans, Strawberries, &c., in winter and early spring, two half-span houses facing the south, each about 36 ft. long, well heated, would be the best kind of structures for the purpose. The fronts and ends might be used for Tomatoes, and a raised bed in the centre for French Beans. Peas could be trained up to the back walls, tall Peas being the best for this purpose. Strawberries could be grown on shelves put up close to the glass and ventilators. A late succession would be best obtained from an orchard house or glass-covered wall, with a flow and return pipe running through it. Peaches and Figs could be planted against the back walls, and Peas, Potatoes, Tomatoes, and French Beans might be grown in the front border near the glass, while Lettuces, Endive, Parsley, Mint, Radishes, and Mustard and Cress could be grown at the foot of the wall. This kind of house should not be less than 7 ft. wide at the bottom, 3 ft. at the top, and 100 ft. long. A similar structure without pipes would give a late supply to last until vegetables could be obtained from the open



ground. The lengths of the different structures mentioned are not too much if a large family has to be well supplied. I have seen lately capital Peas, French Beans, Tomatoes, Broad Beans, Potatoes, Strawberries on shelves, all grown early in the season in a large house planted with young Vines. For two seasons the produce was excellent, but after the Vines covered the roof, vegetable culture could not be carried on. This was a half-span house, facing the south, and wide and lofty. The Peas grown were the variety called Oxford Tom, sown early in the winter in cool quarters, and afterwards planted where I saw them growing, in the back border of the house—vigorous and in full bearing.

WM. ALLAN.

Guntton Park.

### VEGETABLE NOVELTIES.\*

OUR common vegetables have been sown and re-sown every year so long, that it will not be wondered at that almost every year some new sport makes its appearance, and finds its way to some enterprising nurseryman, and through him be distributed to the public, either as a new vegetable, a better variety of an old vegetable, or a useful variety that comes to maturity at a season when older sorts of the same vegetable are not to be had. But not only has careful selection of seedlings that gave signs of better or peculiar qualities led to improvements in the several classes of our culinary vegetables, but one might say it had led to what might pass for different tribes of vegetables—as, for instance, there is no doubt that the Cabbage tribe was started from the same common origin, and that origin was nothing but the *Brassica oleracea*. And many of the sections into which that tribe is now divided are so different in habit of growth, season of maturing, and general character, that to many people it might seem monstrous to refer them to the same origin; for, apart from the different sorts of red and white Cabbage forming their leaves into hard balls at the top of the stem, there is all the sorts of Borecoles that grow with their leaves loose in the natural way, then the Cauliflowers and Broccoli that form their flowers into hard curds of the purest white. The Savoy is a very distinct form of Cabbage, being much more wrinkled on the leaf, and of a hardier constitution, and the Brussels Sprouts, which are such a useful and delicate winter vegetable, and forms little knots or sprouts at the axæ of each leaf; and the Turnip-rooted Cabbage, which is almost as much like a Turnip as it is a Cabbage. All these have sprung from the original *Brassica oleracea*; but though the above be all the most important of the cultivated kinds, there are many other inferior sorts, and many monstrosities that continually make their appearance where large breadths of the Cabbage tribe are grown, and are discarded as useless sorts not worthy of being cultivated for no purpose whatever, and many other curious or pretty sorts that are valued by many as ornaments of the flower garden. But with these few remarks on the ancient history of some of the vegetable tribe, I must now speak of the varieties of more recent introduction with which we are principally concerned, especially novelties of the present year, or at least sorts standing in the Aberdeen seedsmen's lists of 1880 under the heading of "New and Choice Vegetables."

PEAS are the first on the list; and of them we have a pretty long list, as usual. The following are the nine sorts offered, viz.: Balmoral Castle, Challenger, Criterion, Culverwell's Telegraph, Sharpe's Invincible, Marvel, The Baron, Telephone, and Yorkshire Gem, all of which I have

grown, with the exception of Balmoral Castle, within the last two years. And of the remaining eight, I have come to the conclusion that Challenger, Yorkshire Gem, and Marvel are the best of the lot, both in the extremely wet season of last year and the dry summer which has just ended. I consider the Marvel the Pea best adapted for general crop I have seen, both as to crop and quality.

BETROOT.—We have two sorts of this offered as new, viz.: Dobbie's New Purple and Frisby's Excelsior. Both of them have very shapely roots and pretty large size, but neither of them are equal to Nutting's Selected as to colour, but they are certainly more handsome roots, especially Dobbie's Purple.

BROAD BEANS.—The Leviathan, or Giant Windsor, is the only new sort of this year. It grows to a large size, but I do not consider that it is a sufficient recommendation to place it before older sorts as a garden vegetable. As the Bean is commonly used in the young state, however, it may be an improvement for some purpose.

FRENCH BEANS.—The Negro Monster Kidney Bean is certainly a desirable sort. It is very long and prolific. I think it an improvement on the good old Canadian Wonder.

BROCCOLI.—Westwood Park, Burghley Champion, and Veitch's Autumn Broccoli are the three sorts in the choice lists. Nothing can be said as yet about the two first named, as they are not at maturity till May and June; but of Veitch's Autumn, I do not think I can speak too highly—it is a sure friend in the autumn, and just comes into use when the same raiser's Cauliflower is over, and carrying on the stock up to Christmas.

BRUSSELS SPROUTS.—We have only one sort of this vegetable placed before us as new, called Craigo Sprouts, which seems to be a well selected strain from the Dwarf Imported Stock.

WHITE CABBAGE is next on the list of novelties, and we are presented with six sorts, viz.: Elam's Dwarf Spring, Large Conical Early, No. 1, No. 2, Nonsuch, and Daniels' Defiance, all of which are good Cabbages, and well worthy of being grown; because, if they are not new sorts, they are pure strains. I have grown, or seen grown, all the sorts named above in the past and present seasons, and I have not seen any Cabbage equal to No. 2. A large brake of them has quite a handsome appearance, they are so uniform in size, dwarf, and of tender, sweet quality. My next pet is Daniels' Defiance; and if small Cabbages are wanted, I do not see anything to equal Early York or Little Pixie.

CARROTS.—Of these we have three new sorts, viz.: Dobbie's Intermediate, Dobbie's Stump-rooted, and the Smooth Red Intermediate. I have not seen anything remarkable in the first two sorts above named, but the last named sort is the best and prettiest short Carrot I have seen, being of a fine deep red colour, with little core, and very smooth and equal in outline.

CAULIFLOWER.—Eclipse and Earliest Dwarf Erfurt are the only two kinds offered this year. The Eclipse is a late sort, said to be of superior colour and quality, and very desirable; but Earliest Dwarf Erfurt cannot be surpassed by any Cauliflower I have ever seen as an early and summer cropper. Two plants of it can be grown in the same space that would be required for one of any other sort. The heads are very large, white, and delicate, and stand long without opening, and come very quickly into use.

CURLED GREENS.—Endeavours have been made to improve our Green Kale, but I am

doubtful if our Kales of the present day are any better than the sort that supplied our forefathers a hundred years ago.

LETTUCES.—Recent introductions to this tribe have done little to improve the crop or quality, and the two sorts of the present year are no exception to the rule.

ONIONS.—Of these we have five sorts in the "new and choice list"—London Market, Trebons, Zittau, White Pear-shaped, and Oxonian Prize—all of which are good and pure strains. But my favourites are the Trebons and White Pear-shaped, as they seem to me the most distinct and useful of the new introductions, and most worthy of being cultivated.

TURNIPS.—New Early Munich, Early White, and Golden Ball are all very fine new sorts. The first named is certainly the earliest Turnip which has come under my notice, and the Golden Ball is a perfect-shaped and beautifully coloured sort, valuable for use and exhibition. This completes the list of "novelties in vegetables" for the present year. The question may naturally arise, Are those recent endeavours by selection and hybridisation tending generally to improve the crops and quality of our culinary vegetables? I am certainly of opinion that they are, and I may mention the following reasons, amongst others, for holding such opinion: First, in observing the materials brought to our exhibitions by our best cultivators, one will find that the great bulk of the exhibits consists of vegetables recently introduced, and if the exhibitors did not consider them the best, they would not show them; and it must be admitted that a good exhibitor is generally a good judge. Second, by the introduction of new sorts of vegetables of different habits of growth, of hardier constitutions, or requiring longer or shorter time to come to maturity, we can with greater ease, and consequently less expense, have a better and more constant supply at the present day than was possible a few years ago, when, although the varieties were perhaps nearly as numerous as they are now, they did not possess the same variety of character as those of the present time. But, though I hold the opinion that we are improving the crop or quality of our vegetables, I do not mean to say that the improvements of sorts are always in proportion to the number of new introductions, because many of the so-called valuable introductions are only conspicuous by their worthlessness. Sometimes, too, we are even treated to an old friend under a new name. But I believe there is a proneness in many of us to consider new introductions of some vegetables worthless varieties, simply because they may not suit our individual requirements, or the tastes of those we grow them for, when to our next neighbour they may prove to be invaluable, according to circumstances. Many of the improvements of recent years have been confined to the alteration of the character of the plant more than the quality; and to show more clearly what I mean I will take the Potato as an instance. I believe we had as good Potatoes fifty or 100 years ago as we have to-day (so far as quality is concerned), but it must be admitted that the Potato has been improved, and two of the most marked improvements are the smoothness of the tuber combined with a great diminution of waste in their preparation for food.

It is a well known fact that it is a matter of serious consideration to seedsmen to select from the multitude of new introductions placed before them year after year, and not unfrequently they place an inferior or unsuitable sort in their lists for several years from want of information as to its quality. This state of matters could be easily avoided if we joined

\* Read at the North of Scotland Association's Meeting, Aberdeen, by Mr. G. H. Smythe, Aboyne.



together and bought all the new introductions of the year and if, after growing them, we deliberated upon them. Such a course would be far more convincing than any amount of reporting by an individual member, and I am sure it would not only be useful to the seedsmen, but it would confer a boon upon ourselves—for then there would be no necessity for us having placed before us year after year so-called new vegetables that prove to be no better than older sorts obtainable at half the cost.

### JOLDWYNDS.

JOLDWYNDS, the seat of Dr. Bowman, is situated in the neighbourhood of Dorking and Leith Hill, justly considered the most picturesque part of Surrey. The gardens are especially interesting, chiefly on account of the extensive collection of hardy herbaceous plants which they contain. In the houses I found a small collection of Orchids in excellent condition. It consisted of Dendrobiums, Cattleyas, Aerides, Oncidiums, Masdevallias, Cypripediums, &c., whilst in a tank and on the borders I noticed *Herpestis reflexa*, the foliage of which is singularly elegant and graceful; also *Salvinia natans* with its miniature leaves and silk-like radicles, *Azolla pinnata*, *Drosera spatulata*, and some prettily grown specimens of fruiting Duckweed (*Nertera depressa*) covered with both flowers and berries; also some well cultivated Ferns and a fine plant of *Lapageria rosea* just coming into bloom and covering a trellis at the top of the house. A very large collection of plants, bulbous and otherwise, is grown here for indoor decoration, Lilies, *Hyacinthus candicans*, and *Campanula pyramidalis* being especially good.

The Pleasure Grounds are somewhat formal, being principally terraced. Bedding out is not patronised here. The principal objects in the grounds are some fine examples of *Abies Douglasi*, *Picea Pinsapo*, *Araucaria imbricata*, bearing large cones, *Wellingtonias*, and two fine evergreen Oaks. The Conifers were mulched during the winter to a considerable depth, an operation from which they seem to have derived much benefit. In what may be properly termed the secondary pleasure grounds, an extensive and interesting collection of hardy herbaceous plants is grown. Lilies may be seen here by the hundred in every possible position, the object being to discover the best situation for them; they are planted amongst *Rhododendrons* in shrubberies, on the grass, in open borders, in the woods, and, in fact, in every imaginable nook and corner; *auratum*, *pardalinum*, *speciosum*, *Thunbergianum*, *Washingtonianum*, *Szovitzianum*, and *giganteum* are well represented, besides many others. A very fine *L. giganteum*, which has just flowered, measured 8 ft. 4 in. in height, and has produced twelve flowers. *L. pardalinum*, now a mass of bloom, measures 7 ft. 6 in., and there are some twelve stems to a stool; these Lilies, and indeed many others, are planted in prepared borders well drained, the compost being loam, road drift, and leaf-soil; some have been in the same position for four years, others were removed two years ago, and all are doing extremely well. Experience in the culture of Lilies seems to point to the fact that those succeed best whose stems have a fair amount of shade whilst the flowers are exposed to the sun. Many fine varieties are now coming into flower. Some fine *Aquilegias* deserve especial mention; they are the result of a cross between *Wittmaniana* and *chrysantha*, and give promise of good things to come; Christmas Roses, *Tradescantias*, *Menthās*, *Alstroemerias*, *Gentianas*, *Phloxes*, *Spiræas*, *Delphiniums*, *Potentillas*, *Geums*, *Geraniums*, *Thalictrums*,

*Veronicas*, *Echinops*, *Campanulas*, &c., are amongst the plants to be found here. *Potentilla Van Houttei* and *nepalensis* are worthy of notice, as are also *Campanula alpina* and *grandiflora* and some very fine *Lysimachias*. The plants are arranged in borders and on banks, the whole of which have been specially prepared, the soil consisting of sandy loam, peat, &c. A soft sandy kind of stone is used on the banks, which seems to be necessary to the culture of many classes of plants.

Hardy Heaths are also extensively grown here, and will form a fine feature when well established. A large space has recently been cleared in what is termed the wilderness, with the view of extending the culture of Ferns, Lilies, and plants requiring shelter; several basins have also been formed with the same in-

sized bunches. Madresfield Court is in great favour here, some of the bunches being large and the berries well formed, the colour also being excellent. The Vines are all planted inside the houses, but the roots are all allowed to go outside, borders having been prepared for that purpose. Water is liberally used until the fruit commences to swell, when it is partially withheld; the soil is a strong loam, highly manured, in addition to which occasional mulchings are given. Two later Vineries, containing Muscat of Alexandria, Alicante, and Lady Downes, are equally promising. In the Peach house, Early Beatrice, Royal George, Noblesse, and the Elruge Nectarine are well fruited. Melons in pits are bearing good crops. Three varieties are grown, viz., Reid's Scarlet-flesh, William Tillery, and a seedling raised by

Mr. Cornish, which is said to be excellent. It is a sure cropper and early. Shading is almost unknown here, either for Melons or Cucumbers. In the kitchen garden, Strawberries have been very fine, *Vicomtesse Héricart de Thury* being most in favour both in the open and for forcing. Sir Charles Napier and Duc de Malakoff are also grown, the latter producing immense angular fruit of a moderate flavour.

C. DENNIS.



Crisped-leaved Silver Maple.

attention in regard to aquatic and other plants, *Droseras*, *Equisetums*, and many others being already well established. A border has also been formed for the culture of chalk-loving plants, whilst another is devoted to the growth of Gourds, and a similar one is tenanted by a small, but excellent collection of Irises. The water supply is perfect, both as regards quantity and quality; it comes from Holmbury Hill, which is chiefly composed of sandstone. The views from the grounds are magnificent, the one across Sussex to the sea-coast especially so.

**Fruit**—Of this I found a fair assortment, consisting of Pines in three stages of growth, those fruiting bearing fair sized fruit, the variety grown being Queens. The soil is composed of loam and peat, the plants being kept dry at the roots. In the earliest Vinery, Black Hamburgs, Madresfield Court, and Foster's Seedling are bearing good crops of moderate-

pillar in her bill. She then hopped behind the stump where the nest was placed, and quitted it again in half-a-minute with an empty bill. At first she made quite an amusing performance of entering her nest, reaching it circuitously, and not by the front door, so to speak, but through some twigs and brushwood leading in the back way. But she soon grew bolder; she came and went very punctually at the rate of one caterpillar in three minutes. The male Yellow Hammer is either less solicitous, or more idle or timid, than his mate, and I have frequently observed that he lends no help in feeding the young if the nest is watched too closely. On the occasion just referred to the cock first settled in the middle of the lane, where he hopped about, searching apparently for food; then he flew a little way, and continued hovering about so long as I remained, but without coming nearer the stump which concealed the young birds than 15 yds. or 16 yds. There were only three young ones in this nest.

E. H.

### OAK CATERPILLARS.

SEVERAL of the destroyers of these pests were lately mentioned in THE GARDEN. I was recently much interested in observing the industry of the yellow Hammer (Buntings) in feeding her young ones with caterpillars, collected chiefly from some adjoining Oaks. Both the male and female birds were at home at the nest in a bank as I passed, and, after hovering round for some seven or eight minutes while I sat on a stile 10 yds. from the nest, the hen bird ventured to alight near it with a cater-



## TREES AND SHRUBS.

### NEW FORMS OF THE SILVER MAPLE.

(*ACER DASYCARPUM*.)

AMONG the numerous forms of this highly ornamental tree are two new varieties that have originated from seeds in the extensive tree nursery of Messrs. Ellwanger & Barry, Rochester, New York. These varieties are called hetero-

*Spiræa ariæfolia*.—This is one of the noblest of hardy deciduous *Spiræas*. I saw it a few days since in grand bloom at The Wilderness, Reading, towering up above the evergreen shrubs literally laden with fine feathery tufts of white bloom. In the distance these spikes might easily have been mistaken for those of Pampas Grass. It is a rare shrub, but there are many fine things in The Wilderness grounds that are not at all common. That beautiful Honeysuckle (*Lonicera semperflorens*),

new-comer. I had it this season with spikes of flowers fully double, perfectly formed, and of snowy whiteness at least 9 in. in length (very different from the miserable scrap figured); in fact, it has been the admiration of every one who has seen it; and I have not the least hesitation in declaring it to be the finest white-flowered hardy shrub which we possess. All the *Deutzias* have been grand this season, with the exception of *D. gracilis*, which never flowers well out of doors here.—T. SMITH, *Newry*. [The illustration in question was very much reduced, but we have Messrs. Ellwanger & Barry's testimony as to the value of the plant itself.]

**Variegated Shrubs.**—Among a pretty collection of variegated shrubs from Messrs. Osborn's, Fulham Nursery, we find the following: Variegated Almond, and, still better, a purple-leaved Peach, a purple-leaved Nut, the variegated Hawthorn and a variegated Chestnut, a variegated Rhododendron, a variegated Dogwood, a variegated Rose of Sharon, a variegated Siberian Dogwood, a purple-leaved Daphne, the variegated Kerria, a variegated Mock Orange, *Shepherdia argentea*, and *Aristotelia Macqui variegata*.

## THE FRUIT GARDEN.

### THE BEST PEARS.

(Continued from p. 145.)

**Van Mons Leon Leclerc.**—*Synonyms*—Poire Van Mons Leon Leclerc.

**DESCRIPTION OF THE TREE.**—Wood, pretty strong. Branches, very numerous, slightly spread out and curved, thick, short, well kneeed, yellowish-grey, having the lenticular markings large and very abundant, the callosities being sensibly developed with short merithallis. Eyes, not adhering to the wood, large, conical ovoid, sharp, with the scales often disjointed. Leaves, very numerous, long, oval, acuminate, nearly smooth on their edges, with a thick and rather short stalk. Fertility, moderate.

**CULTURE.**—Moderately vigorous on the Quince stock, it does slightly better on the free stock; the development of the graft is moderate; the pyramids which it forms are fairly good, especially the more bushy ones.

**DESCRIPTION OF THE FRUIT.**—Size, very large. Shape, long and conical, knobbed, angular, generally a little blunt. Stalk, of medium length, well grown, especially at the ends, curved, vertical, implanted level with the surface and often backed by a small knot. Eye, average, open, but slightly sunk. Skin, pretty thick, oily, the ground greenish-yellow, partly covered with a greyish layer, upon which appear here and there a few brown dots and large reddish spots, one of which covers the whole of the top of the fruit. Flesh white, very fine in texture, extremely melting, juicy, nearly free from grittiness. Juice very abundant indeed, very sugary, vinous, acidulated, possessed of an exquisite flavour. Season, from the end of October or beginning of November, sometimes reaching into the middle of December. Quality, first-class.

**HISTORY.**—This variety, which is one of the best, was raised at Laval by the late Léon Leclerc formerly Deputy for the Mayenne, and a great lover of fruit tree culture. Connected for a long time with the Belgian Professor Van Mons, he named it after him, and "Van Mons," writes Léon Leclerc in 1842, "not only accepted the dedication of this Pear to him, but declared that in every respect he considered the Pear belonging to the highest rank; but, by a refinement of politeness, he required that the name of the discoverer of this Pear should be attached to his own" (*Annales de la Société d'Horticulture de Paris*). Hence this Pear is always known to the French as the Poire Van Mons (Léon Leclerc) and in England as Léon Leclerc Van Mons. The raiser of this variety was born at Brussels in November, 1765, and died at Louvain in September, 1842. He was a distinguished Professor of Chemistry, Physics,



Cut-leaved Silver Maple.

phyllum laciniatum, cut-leaved, and crispum novum, crisp-leaved. The first is remarkable for the unusually deeply cleft leaves, rendering it distinct from any other variety, though with regard to this character it is very variable, some leaves being much more deeply cut than others. It is a luxuriant, erect grower, and in a large state has a fine appearance. The other variety has its leaves deeply cleft, but in a less degree, and the margins crisped, which latter forms its distinctive character. Both may be considered fine additions to our lists of ornamental trees.

with bunches of rich scarlet flowers, is doing well in the open, and in the neighbouring garden of Maiden Erleigh it is singularly elegant as a greenhouse climber, and always in bloom.—A. D.

**New Deutzia.**—I find in a recent number of THE GARDEN an illustration of a (said to be) new double white form of this charming shrub, but I fail to see in the figure anything so good as what we at present have in *Deutzia candidissima* fl.-pl., and should like to have the two plants grown together in order that I might determine their respective values. I have sufficient faith in the older plant, however, to believe that it will beat the



and Agriculture. In 1807 he received the diploma of Doctor from the Paris Faculty of Medicine, having been a corresponding member of the French Institute since 1796. His passion for growing seedlings was the means of his procuring a large number of varieties of fruit trees. In 1815, he had in his first fruit garden more than 80,000 fruit trees, most of them varieties raised by himself.

**Ne Plus Meuris.**—*Synonyms*—Beurré d'Anjou, Beurré Gris Rouge.

**DESCRIPTION OF THE TREE.**—Wood very strong. Branches few and erect, very thick, but rather short, slightly flexible, yellowish green, shaded with grey, having lenticular markings in abundance and very large, the callosities very prominent. Eyes voluminous, round, ovoid, close to the bark. Leaves large, elliptical, elongated, often ridged and twisted, with edges somewhat denticulated, borne on a strong stalk of moderate length which is generally of a rosy hue. Fertility average.

**CULTURE.**—This Pear tree, which is endowed with remarkable vigour, grows freely either on a free stock or a Quince. It speedily develops its graft and forms pyramids, which it does generally pretty strong, but not much ramified.

**DESCRIPTION OF THE FRUIT.**—Size, large. Form, more or less regular, ovoid, much swollen in the middle and often mammillated at the top. Stalk, short, thick, often greatly swollen, and very fleshy at the base, curved, obliquely inserted in a rather deep cavity, the edges of which are generally irregular. Eye, medium, open, nearly prominent. Skin, yellowish-green, finely speckled with grey, and splashed or spotted with reddish-brown round the eye and on the side exposed to the sun. Flesh, yellowish-white, very fine in texture, melting, juicy, nearly free from grit. Juice, very abundant, indeed rarely well acidulated, sugary, possessing a very delicate perfume. Season, the end of October or beginning of November, but rarely going beyond the month of December. Quality, first-class.

**HISTORY.**—The Belgian Professor Van Mons raised this variety in his nursery at Louvain, which was formed in 1819 out of the collection of seedlings and grafted trees which he had found in the Enclos de la Fidélité at Brussels. As the Ne Plus Meuris only made its appearance in the catalogue of this famous grower in 1823, it is only natural to suppose that it first fruited in that year, or at any rate in the year before. Pierre Meuris, after whom it was named, was Van Mons' foreman, who was similarly honoured some years after by the Surpasse Meuris being called after him. These two Pears with the name of Meuris thus attached presuppose a Meuris Pear which must have existed before then, but this original Meuris Pear, although the eldest of the family, attracted so little attention from growers, that I have never even heard it mentioned by any of them, whether scientific or practical. Besides this, the very names bestowed on the two younger brethren seem to prove that they were so superior to their senior, that this latter was withdrawn before Van Mons had the opportunity of sending grafts to his numerous correspondents in accordance with his usual custom. The Ne Plus Meuris Pear I have grown in my nursery since 1842, the year of its first importation into France where its cultivation increases from day to day.

**REMARKS.**—In 1850, Prevost described a Beurré d'Anjou (*Pomologie de la Seine-Inférieure*) grown in the fruit garden at Rouen, but which has been frequently proved was nothing else but the Ne Plus Meuris. From these came for the Ne Plus Meuris the false synonyms Beurré d'Anjou and Beurré Rouge, which both belong properly to the Beurré Gris. I am anxious to mention this fact, but must except from the category the Anjou growers, who never allowed themselves to be misled by this pretended Beurré d'Anjou.

**The Urbanist's Pear** (Poire des Urbanistes).—*Synonyms*—Coloma d'Automne, Hurbanis, Beurré Piquery, Urbaniste, Urbanist's Seedling,

Beurré Drapiez, Louis Dupont, Louise d'Orleans, Piquery, St. Marc.

**DESCRIPTION OF THE TREE.**—Wood, very strong. Branches, somewhat numerous, spread out at the base, erect at the top, long and very thick, very flexible, greyish-green, often tinged with red over the eyes, the lenticular marking being very fine and distinct, and the callosities sensibly prominent. Eyes, large, ovoid, generally blunt, somewhat downy, springing boldly out of the wood, and sometimes taking the form of short spurs. Leaves, elongated, oval, often even lanceolate, with edges regularly serrated, borne on a long stalk of medium size and very flaccid. Fertility, remarkable.

**CULTURE.**—Although very vigorous, this tree remains sufficiently weak until the end of its second year; it then begins to grow rapidly, and takes a handsome conical form. It is grafted either on the free stock or on the Quince. The growth of the graft is very slow.

**DESCRIPTION OF THE FRUIT.**—Size, medium. Shape, more or less regularly ovoid, sometimes much swollen towards the middle, and sometimes also larger on one side than the other. Stalk of variable length, but usually rather long than short, bent back, well grown, especially at the ends, obliquely planted in a shallow hollow with uneven edges. Eye, medium, slightly sunk, surrounded by a few little folds. Skin, oily, bright yellow tinged with pale green, abundantly and irregularly sprinkled with fawn-coloured dots and streaks, spotted with the same round the stalk, and very rarely taking a reddish hue on the side exposed to the sun. Flesh, yellowish white, watery, very fine indeed in texture, and exceedingly melting, almost free from grittiness. Juice, excessively abundant, very sugary, acidulated, with a perfume that is as delicious as it is strong.

**HISTORY.**—The Urbanist's Pear tree is Belgian in its origin, and is one of the very best autumn varieties. It has been well known and appreciated in its mother country for the last 90 years, and has nevertheless given rise to some very singular errors and to several no less singular re-christenings. Thus from 1834 to 1850 it has been sent from Belgium to various places under the following carefully selected synonyms: Coloma d'Automne, Beurré Piquery, Urbanist's Seedling, Beurré Drapiez, Louis Dupont, and perhaps also Louise d'Orleans, for the French Pomologist Congress, and the principal German growers declare that the variety passing under this latter name differs in nothing from that which we are describing. In describing the Louise d'Orleans, I have stated the reasons which prevented me from as yet deciding on the identity of this Pear, so it is useless to repeat them here, but the age and origin of the Urbanist's Pear have been wrongly described by its first propagators. Van Mons himself even gives two very contradictory statements on the matter. In 1847 M. Bivort makes him say, "The Urbanist's Pear was obtained about 28 years since by the late Comte de Coloma, at Malines, from a seedling raised by him in the garden of the Urbanist Sistus, an order which was suppressed in 1783, and whose property had been acquired by M. de Coloma. It is consequently from the locality in which it was first grown that it has been named (*Album de Pomologie*). M. Bivort does not tell us whence he took this quotation, as I cannot either verify it or discover at what date it was written, the latter question being an essential one, as the author speaks of "28 years having elapsed since M. de Coloma found the seedling at the abandoned Urbanist Convent." Happily, I can oppose this extract with one which is also from the pen of Van Mons, and taken from his *Arbres Fruitières*, his principal work. "In the neighbourhood of Mons," writes this great professor in 1835, "a deserted fruit garden, where a number of free Pear stocks had ample time to sow and season themselves, had produced during a number of years several varieties of first-rate quality. At the two suppressions of religious orders in Belgium similar results ought to have followed similar causes. The garden of

the Rich Clares or Urbanists have thus furnished the excellent varieties of Pears with which the Comte de Coloma has enriched Belgian pomology. The first fruits of these events was the Urbanist Pear. The beauty of the wildling which yielded it was first remarked by M. Stoffels, a friend of the Count's. M. de Coloma was in possession of this garden in 1786, immediately after the suppression of the order. From 1788 onwards he made various sowings from which several excellent varieties have sprung. Having read these lines, we find that Van Mons speaks in them quite differently to what he does in M. Bivort's *Album*. He declares formally that so far from the Urbanist Pear having been a seedling raised by the Count, it had sprung up spontaneously before 1785 in the orchard which was acquired by him the year after, the Count no doubt plucking its first produce. I have been specially desirous of clearing up this point, seeing that the Urbanist Pear is famous both far and near. It was grown in Germany over 70 years ago, the great Diel having described it in 1816 in his *Kernobstorten*; it was later on in 1825 that it was first made known to French growers.

**Remarks.**—The Beurré Coloma which I have described elsewhere may very easily be confounded with the Urbanist's Pear, for they have already both borne the same name. Such a mistake must of course be of but short duration seeing the marked differences which distinguish them from each other both in form and quality. The following are five false synonyms of the Urbanist's Pear which have lately been wrongly bestowed upon it: Beurré Gens, Beurré Knox, Bois Napoléon, Louise de Prusse, and William Prince. These are all special varieties, which are not to be confounded with the Urbanist. Beurré d'Argenson, another false synonym of the Urbanist, belongs to the Passe Colmar.

**The Thompson Pear.**—*Synonyms*—Vlesembeek, Van Mons.

**DESCRIPTION OF THE FRUIT.**—Wood strong, branches few, spread out, thick, long, and slightly elbowed, generally downy, greenish-brown, often tinged with red on the upper portions with large and abundant lenticular markings, and the callosities prominent. Eyes, medium or small, conical pointed, downy, slightly separated from the wood. Leaves, elongated, oval, flat or only slightly ribbed, downy, with the leaves only very slightly indented; the stalk being thick and rather long. Fertility great.

**CULTURE.**—There is nothing excessive in its vigour; the growth of the graft is not above the average; the pyramids formed by it are generally fairly well shaped, no matter what the stock may have been on which it has been grafted.

**DESCRIPTION OF THE FRUIT.**—Size, above the average and sometimes rather large. Shape, ovoid, strongly knobbed, and often slightly elongated. Stalk, short, bent, well grown, swollen at its point of junction with the fruit, vertical and oblique, inserted in a hollow, the dimensions of which are variable, but whose edges are always very uneven. Eye, medium, half shut or closed, slightly sunk. Skin, pretty thick, light yellow and greenish, finely dotted with grey, marbled, speckled, and cross-banded with red, and largely spotted with the same colour round the stalk. Flesh, whitish, fine grained, watery, rarely very gritty. Juice, very abundant indeed, sugary, sweet, possessing a perfume reminding one of that of the Rose. Season, towards the middle of October until the middle of November. Quality, first-rate.

**HISTORY.**—It now seems certain that this Pear tree, which was named after a distinguished English pomologist, the late Mr. R. Thompson, was a seedling, or at any rate the product, of a graft made in 1819 by Van Mons in his nurseries at Louvain, whither he had been obliged to remove from Brussels. He distributed a large number of grafts and shoots at the time, and the Horticultural Society of London was not forgotten; and in 1863, Mr. Thompson, who was then



director of the Society's fruit garden, wrote the following account of the naming of this Pear to Professor Decaisne, of the Paris Jardin des Plantes, which seems fully to establish the facts relative to its christening. "This Pear was not discovered by me; it was one of the very numerous varieties sent by Van Mons to the Horticultural Society of London about the year 1820. At first it was only called by the number which Van Mons had attached to it, no name having been bestowed upon it. On fruiting, this unnamed Pear appeared to me greatly to merit cultivation, and I mentioned the matter to the secretary of the Society, who proposed to me to call it the Thompson. I accepted the honour, at the same time remarking that if later on I should find that this variety had received a more appropriate name than my own patronymic, I should resign all claim, but this has never as yet taken place."—*Jardin Fruitier du Muséum*, 1863. I imported the Thompson Pear from England in 1868, up to which time I believe it was unknown in France. In describing the Althorp Crassane, I stated that it had been erroneously supposed to be identical with the Thompson Pear. I would add to this statement that this latter frequently grows to double the size of the former fruit.

#### Swan's Egg (Euf de Cygne).

**DESCRIPTION OF THE TREE.**—Wood strong, branches numerous and spread out, short, thick, elbowed, brownish (fawn colour), of a somewhat greenish tint, and slightly shaded with red near the eyes, the lenticulated markings being fine and numerous, the short callosities being very prominent. Eyes very bulky indeed, rounded oval, with disjointed and downy scales separated from the bark. Leaves of a beautiful shiny green, rather small, rounded oval, slightly acuminate, with their edges indented or crenulated, the stalk being long and thick and well provided with stipules. Fertility, remarkable.

**CULTURE.**—Its vigour is in no way excessive, and any soil suits it equally well. Its graft grows but slowly, and the pyramid which it forms only takes a good shape about the third year.

**DESCRIPTION OF THE FRUIT.**—Size, medium. Shape, obovoid or ovoid, more or less rounded, and knobby. Stalk, long, thin, straight or bent back, often smaller at the point of attachment, regularly inserted, level with the skin or in a slight hollow. Eye, large, very open, projecting or only slightly sunk. Skin, light greenish-yellow, covered with large and small brown specks, and sometimes with red splashes; on the side next the sun it generally takes a strongly marked reddish tint. Flesh, yellowish-white, half firm, texture brittle or half brittle, rather dry, gritty about the pips. Juice, not very abundant, slightly sugared with an after-taste of something astringent, and of a musky flavour. Season, the end of September. Quality, second-rate.

**HISTORY.**—This Pear is of English origin, and was publicly mentioned under its English name in Langley's "Pomona," a remarkable folio with plates published in 1729. This Pear then became so common in England that Lindley said of it in 1831, "All our gardeners grow it, so excessive is it in fertility and the flavour of its products" ("Guide to the Orchard," &c.). In March, 1831, the well-known Paris house of Vilmorin & Co., who received a number of grafts from England, did their best to spread it abroad, since which time the Swan's Egg, or Euf de Cygne, as the French translate it into their language, has always figured in their catalogues, but among fruit of a second or even third class sort, for the exquisite flavour described by Lindley does not always seem to follow it to the land of its adoption.

**REMARKS IN THE "JARDIN FRUITIER DU MUSÉUM DE PARIS" FOR 1860.**—The Swan's Egg is spoken of as ripening in winter, but this extraordinary statement surprised us greatly, for this variety with us never goes beyond the month of October, and even in the land of its birth as well as in America, those authors which mention it are unanimous in stating that it ripens at the end

of September and beginning of October. It is as well to correct this mistake, as it may lead to disappointment amongst growers wishing for late ripening Pears.

**The Seckel Pear (La Poire Seckel).**—*Synonyms*.—New York Red Cheek Seckle, Sytle, Sickle, Shakespear, Sicker.

**DESCRIPTION OF THE TREE.**—Wood, pretty weak. Branches, numerous, curved and usually much spread out, thick, short, slightly elbowed, of a greyish-fawn colour shaded with red, with large and abundant lenticular markings, the callosities being hardly perceptible. Eyes, very much separated from the wood, small or medium, ovoid, with the scales badly joined. Leaves, large, not very numerous, oval, acuminate, rather deeply indented or crenulated, borne on a strong stalk of medium length, which has well developed stipules attached to it. Fertility, excessive.

**CULTURE.**—Whatever may be the subject on which this Pear is grafted, its vigour always leaves something to be desired. The graft grows but slowly, and the pyramids formed by it are low, irregular, and are rarely very leafy.

**DESCRIPTION OF THE FRUIT.**—Size, small, sometimes, however, but very exceptionally, nearly reaching the medium. Shape, more or less bluntly turbinate, and generally pretty swollen in the whole of the lower portion. Stalk, short and sometimes of medium length, well grown, especially at the base, straight or slightly bent in a shallow depression, generally wrinkled or knobbed. Eye, small, half closed or shut, but scarcely sunk at all, wrinkled about the edges. Skin, thin, somewhat rough, olive-yellow at the bottom, speckled with brown and dirty white, spotted partly with bronze-grey on the shady side, and widely shaded with red on that turned to the sun. Flesh, whitish, fine grained, juicy, and almost free from grittiness. Juice, abundant, very sugary, vinous, refreshing, having a very delicious perfume, smelling at once of Musk and Aniseed. Season, the end of September and the beginning or whole of October. Quality, first-class.

**HISTORY.**—This delicious little Pear comes to us from the United States, the tree from which it was raised having been found growing spontaneously about 1760. In his *Fruits and Fruit Trees of America*, Downing furnishes us with the most circumstantial details on the origin of this Pear tree. It was first discovered by a hunter named Jacob in the middle of a forest close to Philadelphia. The wilding, which was then in full bearing, was growing on the banks of the river Delaware when the forest was sold, therefore Jacob bought the particular lot containing the treasure trove; shortly after which a farmer named Seckel undertook to introduce it into the market, distributed grafts, and gave it his own name instead of that of the discoverer. Such is the history of this Pear tree, which is highly prized by the American growers. Its importation into France dates from 1831, when grafts were sent to the Horticultural Society of Paris by Mr. Dearborn, President of the Horticultural Society of Massachusetts.

(To be continued.)

**A Well-trained Tree.**—We have received from Mr. R. Gilbert, of Burghley, a good photograph of a really well-trained Peach tree (Royal George) planted eight years ago. The notable thing is that the whole of the middle part of the tree and its lower parts are full of young bearing wood instead of what is old and useless.

**Madresfield Court Grape.**—Mr. Molyneux attributes his success in the culture of this Grape to allowing his laterals to run. I may mention that I have a Madresfield Court which always does well; it is treated like all my other Vines, viz., grown on the spur system, and stopped at two leaves above the bunch. I have also a Primavis Frontignan which always cracks badly. I have tried the plan of allowing the laterals to grow unchecked to no purpose. I shall feel

obliged if any of the readers of THE GARDEN can suggest a remedy. My Vine is vigorous and healthy.—GEO. A. PASSINGHAM, *Milton, Cambs.*

**Two Strawberry Plants in a Pot.**—Most readers of THE GARDEN would like to encourage the growth of two blades of Grass where there was only one before, but "W. W." (p. 121) condemned the plan of trying to grow two Strawberries in one pot, and hopes it may never be put into practice. He has, however, evidently no argument to offer against it; and, speaking from experience, I know of few operations which would give your readers more pleasure than trying to grow Strawberries in the way "W. W." forbids. They may rest assured that they will get sufficient fruit to pay them for their labour, and if they can secure a full crop from both plants they will be great gainers. The experiment is well worth a trial.—CAMBRIAN.

**The Apple Crop.**—During the blooming season I sent a note to THE GARDEN expressing my belief that the fruit crop would be heavy. This has not altogether been realised, though I still hold the opinion that in abundant bloom there is reasonable hope of a good crop; and had it not been for the severe frost in May, the crop would certainly have been a heavy one. This is very evident in some Apple trees protected by a wall near me. Above, there are few fruits to be seen; below the wall they hang in clusters. I have been looking about to see what trees are most productive. I find that Cox's Pomona and Orange Pippin are well furnished with fruit, next Lord Suffield and Pearmain. I have also seen a tree of the old Golden Pippin well covered. In a cider orchard near me the produce is very irregular, so I do not think much cider can be made.—W. T., *Dorset.*

**Stone Fruits under Glass.**—It has been asked by Mr. H. W. Sargent in THE GARDEN of July 30, p. 120, how Nectarines, Plums, and Apricots compare as to flavour when grown under glass with those grown in the open air. I have grown these fruits under glass for the last ten years. My experience is, that Nectarines and Transparent Gages do uncommonly well under glass, better, in fact, than in the open air, but I never grew a blue Plum worth eating, and Apricots do not do at all well with me; they are good in flavour, but generally crack badly, and are small. I cannot tell why the Transparent Gage does so well and other Plums so badly. I only give my experience for what it is worth. Mr. Sargent speaks of his fruit falling in the wire-house. I think the reason of this is that no bees can get into the house to fertilise the blossoms. I use a camel's-hair brush for this purpose when there are no bees to do it for me.—GEO. A. PASSINGHAM, *Milton, Cambs.*

**Fruit and Vegetable Culture.**—At a meeting held the other day of the Council of the Royal Agricultural Society of England, Mr. Charles Whitehead (Maidstone) moved that prizes for vegetables and market garden and farm fruits be offered at the Reading meeting, and that it be referred to a committee, which he named, to draw up a scheme for this purpose and report to the November council. Mr. Whitehead said he was sure such a show would prove of great advantage to the producers of vegetables and fruit, the growth of which he felt confident might be very largely increased, to the benefit, not only of the growers, but also of the consuming public, many of whom were not able to obtain vegetables and fruit at almost prohibitory prices. The Royal Agricultural Society might do very much, not only to encourage an increase in the growth of fruit and vegetables, but also to help towards an improved preparation and distribution of them. Mr. James Howard, M.P., seconded the proposal, which, after some discussion, was adopted.

**Currants on North Walls.**—No more profitable crop than these could be grown on north walls. It is some time since the fruit was all gathered from our bush plants out in the open, but that on the north wall is hardly ripe yet, and it will be the end of September or into October



before it is all gathered. Some people value Currants for dessert, and all like them for tarts, so that a long and constant supply is desirable. One of the best ways to secure a stock of bushes against the wall is to have some suitable soil placed at the bottom, and when the old bushes are being pruned in the winter, put a number of the shoots into this, 1 ft. apart or so. These cuttings need not be more than 1 ft. long, and the eyes or buds should be rubbed from the bottom half of each. In spring they will soon root and begin to grow, and as the shoots are formed it is best to reduce them to one or two, which should be trained straight up the wall, and kept so on the short spur system. When in leaf and fruit they look well, and improve the appearance of bare walls very much. Treated in this way, Currants are more fruitful than when allowed to run up tall in bush form. Against walls they fruit all the way from bottom to top; but some young standard bushes we once allowed to run up without pruning for two years only produced a few leaves and bunches at the end of each shoot, and all the bottom wood remained bare.—CAMBRIAN.

**Raspberries.**—The Raspberry crop here is always a grand one. The plants are grown in lines with slight wire fences about 5 ft. high to train them to; but it is not the fences to which we give the credit of our fine crops, but the treatment. The rows are complete masses of growths young and old, and to allow them to remain in this state until late in autumn would be certain ruin to the plants, as half the number of young canes would have no chance of ripening, and those which got the sun would be browned about half way up or so, while the soft, green unripened points would die in winter if it should be in the least way severe; but all this may be prevented. After the crop has been gathered the old canes are of no further use, and every one of them should be cut out close to the ground, and the strongest of the young canes tied into their places, and at the same time all weak growths not wanted should be cut away. This leaves the sappy young rods fully exposed to the air and sun, and by October they are ripened up hard and brown to the very points; then there is little fear of the most severe weather killing them, and the following season they will emit side shoots and bear heavily from bottom to top. As soon after the canes have been tied in their places as possible, a mulching of half-decayed manure should be spread over the surface of the roots, and further attention will not be required until the fruit is ready for gathering the following year.—M.

#### SEASONABLE WORK.

**Pines.**—By this time established plants will have become so thoroughly inured to sunshine as to require very little, if any, shading; but any that have been recently potted may require some very light material drawn over them for a few hours on bright days, and as these will require careful watering until the soil gets well filled with roots, great attention to the damping of all available surfaces two or three times a day, and a light dewing over with the syringe when the pit is closed for the day, will be the best course to pursue. Established plants swelling-off fruit will take liberal supplies of stimulating liquid and weak guano-water once, or perhaps twice, a week; and a little of the same in a clarified state syringed into the axils of the lower leaves will stimulate the stem roots and greatly assist the rapidly advancing fruit. When the full size has been attained pure water only must be used, and that in moderate quantities, otherwise there will be danger of producing black hearts. Look well to plants now throwing up and encourage them with plenty of heat and water, as they will, under judicious management, give a supply of useful fruit through a good part of the winter. A minimum temperature of 70° at night and 90° to 95° by day should rule until days decrease in length, when a lower standard will be preferable to hard firing. Where strong successions have filled their

pots with roots a few of the best may still be shifted into small-sized fruiting pots. For keeping up a steady supply of fruit small batches of suckers and successions should be potted at short intervals.

**Vines.**—Should we have a continuance of bright dry weather black Grapes that are ripe, if not well covered with clean, healthy foliage, should have some light shading thrown over them during the day. Keep the houses cool by means of abundant ventilation and frequent damping of the floors through the early part of the day, but let them become quite dry before night, when the air may be reduced to prevent condensation of moisture on the berries through too low a temperature. Muscats, on the other hand, will now require all the sunlight that can be secured by short

at the roots by keeping them well covered with Fern or litter in preference to the application of water. If any of the borders in early or second early houses require renovation, no time should be lost in getting the work done, in accordance with former directions, before the leaves fall.

**Orchard House.**—The principal work in the early house from which all the fruit has been gathered will be watering and good syringing every evening. If any of the trees require re-potting, it should be performed as soon as the fruit is gathered. It is not always convenient or advisable to give them a shift into larger pots; neither is it necessary, as the roots will stand a great deal of paring down with a sharp instrument, as well as cutting off above the drainage. When treated in this way they flag a little in hot



*Pinus ponderosa.*

tening back the laterals and side shoots where they have been allowed to ramble. At the same time increase the ventilation and apply a little fire-heat by night to keep the temperature up to 70°. The same treatment will apply to Lady Downes and all the choice kinds of winter Grapes, which should be thoroughly ripe by the end of September, otherwise they will not keep fresh and plump through the winter months. Vigorous young Vines intended for early forcing will well repay all the attention that can be given to them to ensure thoroughly ripened wood and foliage before the time arrives for pruning in September. Established Vines that have been forced and are intended for starting again in November may have all their side shoots shortened back and lateral growths removed from the leaders up to the pruning bud, beyond which they may have full play for the present. See that fruiting pot Vines now resting against south walls do not become too dry

weather, but if kept well syringed in a close house new roots soon find their way into the fresh compost, when more air and less moisture will suit them. The young wood on all forced pot trees being unusually forward this season, portable trees will be greatly improved by exposure to the open air, where they can have the benefit of dew and rain. Midseason and late kinds, now taking the last swelling, cannot have too much air, with sufficient water of a stimulating nature to keep lateral growths moving. Good syringing is very important, as spider is unusually plentiful and rapid in its movements, but great care must be observed in the choice of water free from calcareous or other matter which might leave a deposit on the fruit. The present season will thoroughly test the quality of the Peaches and Nectarines of recent introduction, and where found unworthy of a place in the first rank they should be exchanged for well-proved kinds.



**Melons.**—Up to the present time the weather has been all that could be desired for these heat and light-loving subjects, but a change to dull dark weather with decreasing length of days will necessitate the application of fire-heat when a minimum of 70° or a maximum of 80° cannot be maintained without it. Stopping, thinning, and tying out, to give every leaf the full benefit of light, must have attention, as good flavour cannot be obtained where solar heat is excluded by a canopy of worse than useless lateral growths. Late plants should be grown in pots plunged in a sharp bottom-heat obtained from tan or Oak leaves. Through the early stages of growth they do equally well planted on hills and ridges, but when short, dark days arrive, the great advantage of being able to renovate the bottom-heat without disturbing the roots will be strikingly apparent. Plants in pits and frames will soon require linings to admit of daily ventilation; they will also derive great benefit from a covering of some kind through the night. They may be shut up about 3 p.m., with an occasional watering overhead during the time the fruit is swelling; but where there is danger of canker or damping, the beds may be flooded with tepid liquid on fine mornings, without wetting the old stems or foliage. Dickson's Exquisite, properly named, and Crump's Blenheim Orange are good at every point, and are well adapted for pot culture.

**Hardy Fruit.**—The long continued drought is now telling on all kinds of fruit trees, particularly where they have been recently removed or the soil is light. If carrying crops of fruit, some additional mulching, not necessarily stimulating, will be of great service, and water may be given as often as the supply will admit. As a rule Peaches against south and west walls are carrying good crops of fruit, and the trees are healthy; but spider with us, notwithstanding the frequent use of the hose combined with a heavy mulching of rotten manure, is unusually persistent. To counteract this and to insure full sized juicy fruit, water in large quantities must be given to the roots, and to assist the trees a somewhat loose system of training, that will leave the fruit half buried in foliage, will be advisable until it begins to colour. Early Louise, a very hardy sure cropper, commenced ripening fine highly coloured fruit the last week in July, and, judging from present appearances, the crop will be over before any of the older kinds are ready. Where the crop has failed, pyramids and bushes will show a tendency to vigorous second growth, and as the formation and ripening of the spurs depend upon the free admission of light and air, see that timely stopping of laterals and sub-laterals is properly attended to. Look over newly grafted trees, and if the ligatures require entire removal, secure the young growths from the scions by tying to sticks lashed to the stocks. Cut out all old Raspberry canes and secure the young growths by tying loosely to the stakes or trellis. Give autumn bearers an abundance of water over the mulching and support the young shoots well above the ground. The usual advice is to make new Strawberry beds in August, but when runners in small pots are not suffering the planting may be delayed for a short time. One of the main points in the preparation of Strawberry ground is deep trenching. Manure is of course a telling factor, and new virgin loam of a tenacious nature should be obtained for planting in if possible. The balls should be wet at the time they are turned out, and a continuance of any weather will necessitate mulching and constant watering. Where old beds have been infested with mildew, breaking up is recommended; but if they cannot be spared, abundance of water, frequent dressings with soot and quicklime will be found a good remedy.

W. COLEMAN.

**Standard Peaches and Nectarines Indoors.**—In suitable houses where there is plenty of light, there can, I think, be no question that standard Peaches and Nectarines are best, as not only do they require less labour and atten-

tion than trained ones, but by judicious dis-budding and thinning, they may be so grown as to have a much greater leaf surface than trees on a trellis, and, as a natural consequence, they are, therefore, capable of yielding a greater quantity of fruit. The only objection to standard trees is, that the fruit being more overshadowed by foliage is not so good flavoured, and it does not colour so well as that more exposed to the sun. I quite agree with "J. S. W.," too, about the desirability of extension training, which I have advocated many years, but I go further with it than he appears to do, as I never shorten back a young tree at all. I have now a Peach planted last autumn twelvemonth which this year has borne thirty-four fine fruit, and at the present time covers fully with bearing wood more than 100 square ft. of trellis. The tree when I got it was a maiden, having only four shoots and a stem about as thick as my thumb, but it has since increased to the size of my wrist, and that is anything but a small one.—S. D.

#### WESTERN PITCH PINE. (PINUS PONDEROSA.)

This species belongs to the three-leaved section. It grows naturally over a wide tract of country in North America, whence it was introduced by Mr. Douglas some fifty years ago. In its native habitat it forms a massive tree, often attaining as much as 200 ft. in height with a girth of about 20 ft. a very different aspect from that in which we are wont to see it in cultivation in this country. In its immature state, like that represented by the accompanying illustration, it has a very distinct appearance from other kinds, and may be readily recognised by the deep glaucous green of the rigid tufts of leaves and the tendency of the branches to assume a horizontal position. It is rather a rapid grower and perfectly hardy, a circumstance which renders it a valuable park and garden tree.

#### NOTES FROM NEWRY.

**PORTUGUESE SUNDEW OUT-OF-DOORS.**—Some time ago a correspondent claimed some credit for having succeeded in keeping the Portuguese Sundew (*Drosophyllum lusitanicum*) alive under a bell-glass. I wrote detailing a still simpler plan. I have now to very much simplify that. Growing a number of them this season, it occurred to me that it ought to be tried out-of-doors. This I did, planting a strong bit in the bog, and I am glad to report that it is growing well, very stout and quite at home. The only fault I find is that in the open air, after the early morning, the transparent glands, the charm of the plant, become dissipated.

**MONTBRETIA POTTSII.**—I fear that "F. W. B." has planted his Montbretia in too dry a spot. When he described it as having a general resemblance to the Tritonias, he probably fell into the natural error of supposing that like would suit like. I have it planted in a swampy though warm spot, and it never turns rusty. The stems and leaves are now 3 ft. high, and the flower-stems promise to grow full 4 ft.; the leaves are fully 1½ in. wide—altogether a picture of rude health such as could not be unless it had a good rich larder to run in. Those grown in pots and comparatively starved turn rusty and go to rest much sooner than those situated, as I have just described, on a warm dry border. Red spider often plays havoc with the leaves of bulbous plants.

**SCARLET LOBELIAS.**—What a fine plant *Lobelia cardinalis* is when well grown! I have now a 11-in. pan containing seven plants, the tallest of which is 5 ft. and the shortest 4½ ft. high, the flowering portion of the strongest fully 2 ft., and the shortest 14 in. All promise to grow from 6 in. to 9 in. more; the stems are branching all up, and these will carry on the flowering season after the central portions are over. *Lobelia ignea* in the

open ground is over 5 ft. high and just coming into flower; this is what a little feeding does for plants. I have found some difficulty in getting plants properly fed by our work-people. One may lay down a rule—give this plant so and so, and this something else—but the chances are that it is not done; so to get over the difficulty I keep some guano in a bag, and every few days go the round of the tanks and just colour the water with my bag. There is no getting away from this, and everything is served just alike, and, so far as can be seen, with the best results. This plan is a simple one and quite successful.

**TRICHINIUM MANGLESII.**—What a charming, though still little known, plant is this *Trichinum*! I have a 9-in. pot containing twenty heads, the tallest of which is 14 in. high. It keeps in bloom for months and months. The secret of its success seems to be sandy friable loam, plenty of drainage, careful watering, full light, and plenty of air, and keeping it nearly dry and cool in winter. It is one of those really good things that deserves some care. Has anyone grown it out-of-doors?

**DOUBLE GEUMS AND THYMUS PATAVINUS.**—We should never tire of praising that really good hardy plant, *Geum coccineum* fl.-pl. I call it the Scarlet Geranium of the spring garden. It is the first bright red flower we have, but it continues to throw up fresh stems all through, and is at present as showy as it was in April. A useful rock plant is *Thymus patavinus*. It is free in growth and flowers right on from spring to autumn. Its rosy lilac blossoms are not showy, but in a mass they look pretty, and are sweetly perfumed.

**RUBUS CANADENSIS.**—In this we have a good hardy shrub, which comes into bloom much later and continues much longer than the spring flowering species. Its large, well formed, sweet-smelling blossoms open at first a good crimson, but in a day or so change to pink. Its foliage is large and handsome, and, moreover, it is not such a rambling plant as most of the others are. It keeps at home, and forms an upright clump 5 ft. or 6 ft. high.

**PENTSTEMON COBÆA** has been very fine, and is one of the best of the hardy species. *P. confertus*, 4 ft. high, has been in flower for more than a month. It is not a very striking plant, still the profusion of its rather small white blossoms makes it visible. How curious some of these plant peculiarities are! Here we have one with small flowers and foliage abnormally large, and in *P. cobæa* blossoms exceedingly large and foliage very small. Why is this, I wonder? Torrey's *Chelone* is very showy, suitably placed; spikes 3 ft. to 4 ft. high. *P. Palmeri* is curious, but not showy, and not hardy.

**HYPERICUM PROLIFICUM** is a good and quite hardy shrub. It is now coming into bloom, and will continue until late in the autumn; it grows about 2 ft. high.

I should be very glad indeed to get a plant or cutting of that *Spirea aræfolia* about which Mr. Fish talks, which has blossoms as white as the driven snow. It is a most beautiful shrub, but the only snow I ever saw which closely resembled the colour of its blossoms had been driven by a broom. T. SMITH.

#### NOTES FROM GLASNEVIN.

**THE Disa**, of which you published a fine coloured plate some time since under the name of *D. macrantha*, has been identified at Kew, I believe, with *D. megaceras*. It is now finely in bloom here, and has increased from seven blooms when figured to thirteen, all well developed and fragrant. Some prefer it to its more highly-coloured neighbour, *D. grandiflora*, which is now also in fine condition, there being nearly 100 plants of it of various sizes from two to seven expanded blooms. *Cypripedium Parishii* is another interesting Orchid, of which I have two strong plants in bloom. The stronger of them had nine flowers open at one time, and looked so quaintly with its



curled tails. *Cœlogyne speciosa* is not a very conspicuous plant, but it has the advantage of being almost a continuous bloomer, and its remarkable form and combination of colours always arrest attention. I have just now a remarkable specimen of *Delphinium cardinale* in full beauty. It was put out of a 4-in. pot this spring, and has now attained a height of over 5 ft., and is branched to the ground and covered with bloom. The prettiest plant now in flower is *Coreopsis tenuifolia*. Its feathery foliage and numerous bright yellow blossoms, borne on slender foot-stalks, are together very charming. A few other hardy plants which I have in bloom are *Pascalia glauca*, *Inula Hookeri*, *Helenium pumilum*, *Fuchsia sanguinea*, *Clematis tubulosa*, *Veronica Hendersoni*, *Monarda didyma*, *Indigofera Dosua*, and *Ononis rotundifolia*. F. W. MOORE.

## BOOKS.

### PEAR CULTURE FOR PROFIT.\*

THIS work, a thoroughly practical one on Pear culture, has been of considerable assistance to American growers. Although the conditions of climate are so very different that it may not be useful to the English reader, still the observations and doings of a thoroughly practical man who tests everything by the market only cannot be without interest to English growers. Mr. Quinn is no careless cultivator; his orchards are thoroughly well managed, and he grows thousands of bushels of the best fruits in New York. He informed us during a recent stay in London that he has entirely given up the culture of dwarf Pears, as we understand them here, and yet his system of training is not a standard, but a pyramid, so to say—a low branched pyramid with as much as possible of the tree within reach of the hand. It is considered an essential matter in choice Pear culture in America that as many operations as possible should be brought within the reach of the hand without the aid of ladders and the like. This, of course, puts grazing, &c., out of the question, and the trees are grown on a close high system of cultivation. What the author says of mulching is not without importance in our own country.

**Mulching.**—In any part of the country where charcoal dust, from locomotives or old charcoal bottoms, can be procured easily, there is no substance that will make a better mulch for Pear trees. It is a good absorbent, darkens the soil, and it will retain ammonia and other gases that assist in the healthy growth of all plants. We used this article for mulching for many years, and only stopped because the source of our supply was cut off. When the surface of the ground, as far as the roots of young trees extend, is covered by a mulching of some material, one-half an inch in thickness, the effect on the trees is equal to a partial manuring. This may readily be accounted for. In the first place, the heavy rain does not compact the surface, but it gradually filters through the mulch; and secondly, the surface soil is moist at all times during the summer months. I find in our orchard that when the ground around the trees has been well mulched, not only the growth of wood is more uniform, but the fruit is larger; this, too, on Pear trees otherwise receiving the same treatment. I was so convinced of this fact, that for the past four years one part of the Pear orchard has been kept covered with hay the whole year, except when removed to apply the spring dressing of manure. We always procure an abundance of "salt grass" from the low meadows lying within one mile of our place. This we find an excellent substance for mulching the Pear orchard. During the winter the hay is carted home and left in heaps in convenient

places until summer, when it is spread over the ground about half an inch in thickness. This serves a three-fold purpose; it prevents the weeds from growing, and, as stated before, keeps the surface moist. Another advantage is, the Pears that drop or are blown off by heavy winds in the autumn are not bruised and rendered unsaleable, as they would be, falling on ground without a mulch, especially if the land is stony. It is a wise course to follow under all circumstances when material can be obtained. It will require about four or five tons to the acre the first year; each succeeding year half that quantity will be enough, as from one-third to one-half of the old mulch can be again used. The amount saved in the labour of keeping the ground clean will, in many cases, pay for the mulching material after the first year's outlay, and a much less quantity of manure will be necessary to keep the trees in a healthy condition.

## NOTES OF THE WEEK.

**Pelargonium Bonfire.**—Mr. Thomas Balding, sending us a handsome bud of this brilliant *Pelargonium*, praises it as the best of its colour, which is bright scarlet, and says that it does very well in London gardens.

**Rogiera gratissima.**—This delicately coloured and beautiful stove shrub comes to us from Messrs. Backhouse, and will hold its way well among the most delicate and beautiful, if not among the more showy, flowers of the season.

**The White Musk Mallow.**—Mr. Cannell sends us specimens of this Mallow, which he very properly says is a good hardy plant. It is a plant which one sees by the roadside in the southern counties, or in a mixed border of hardy flowers, and is always a striking object. The delicate musk scent is another charm. The plant could be easily established on banks and rough places.

**An Orange Rock Poppy** (*P. nudicaule miniatum*).—A plant particularly rich in colour and valuable for the rock garden or rock borders at this season. Some of the varieties of this Poppy are extremely rich and good in colour, and long and continuous in bloom. A large one grown in Miss Jekyll's garden is really a noble plant. The above was sent by Messrs. Backhouse, who have long been famous for rock Poppies.

**Heavy Gooseberries.**—At the National Gooseberry Show held at the Botanic Gardens, Manchester, on the 15th inst., we find the heaviest fruits were of Red—Rover, weight 29 dwts.; Yellow—Ringer, 24 dwts. 8 grs.; Green—Shiner, 22 dwts. 3 grs.; White—Transparent, 23 dwts. 9 grs. Two berries of Lord Derby weighing 39 dwts. 18 grs.; Ringer, 31 dwts. 18 grs.; Sandy, 31 dwts. 12 grs., and Antagonist the same weight.

**Gardeners' Royal Benevolent Institution.** Mr. Cutler writes to us as follows relative to the simultaneous collection that has recently been made on behalf of the funds of this institution, "Feeling assured that many of your readers are interested in the success of this movement, allow me to inform you that up to this morning (August 11) the number of responses I have received is 301, and the amount contributed £364 9s. 4d., giving an average of a trifle over £1 4s. each response. I take this opportunity of stating that I purpose attending the Great Fruit Show at Manchester on the 24th instant, and shall be happy to receive subscriptions, collecting cards, &c., to enrol new members, and to afford any information that may be required.

**Hyacinthus candicans.**—I agree with Mr. Barton (p. 137) that this plant is excellent for conservatory decoration. Last autumn I obtained a few bulbs of it, which I potted in 6-in. pots, and treated in every respect the same as Hyacinths. Some of them are now 6 ft. high, with noble looking foliage and grand spikes of bloom. One stem has fifty-six flowers and buds upon it. It has a fine effect in the conservatory,

with its spikes of drooping bells towering above dwarfier subjects.—WM. PULLIN, *Bracebridge Hall, Lincoln*.

**What is a Florist's Flower?**—Mr. T. Smith sends us from the very interesting collection at Newry a box of seedling Pansies of most curious and varied hues. He says, "They are not florist's flowers at all, neither large enough, nor flat enough, but I think them most charming; some have distinctly waved margins. They are all dwarf and compact growers." The distinctions between florist's flowers and other flowers are happily not known to all, and we hope no pretty flowers will suffer neglect because of any fancied deficiency in the above way.

**Trichinium Manglesi.**—This most graceful Australian plant comes to us from Mr. Smith, of Newry (who ought to grow it, if anybody does), with its soft hare-tail-like head and pretty rose flowers peeping through. A desirable plant to have, but the fate of many plants a little difficult to grow, like this, is to disappear and be forgotten. Now and then, by the way of a change, it might be well in a garden in a particular year to make an attempt to grow a number of old and half-forgotten or half-lost friends—a kind of garden rotation, so to say.

**Hydrangeas in London.**—Mr. Thomas Balding, of Clapham Common, sends us many specimens of Hydrangeas, well grown in London, which he says are not so good as usual, owing to the dry weather. Not often does one see this fine shrub so well done in London as it might be, probably through the winter. Where by the knife or by other means Hydrangeas are cut down frequently, they are never free-flowering in the open air. In countries where they escape and form large bushes, they become splendid ornaments of the garden. Such specimens as one may see in Sussex, or in Anglesea, or in Ireland, in autumn, would be grand objects on the Grass of our London parks. Can we not by protection and care grow them as well?

## SOCIETIES.

### ROYAL HORTICULTURAL SOCIETY. AUGUST 9.

THIS was an attractive meeting, the charming Gladioli from Langport, Petunias from Swanley, Balsams from Dulwich, and trees and shrubs from the Isleworth Arboretum being the principal exhibits.

**First-class Certificates** were awarded to Messrs. Veitch & Sons, Chelsea, for—

**Cattleya Chamberlainiana**, a beautiful new hybrid variety, the result of crossing *C. Dowiana* and *C. Leopoldi*. The flowers are about the size of the former, the lip is broad, crisped at the margins, and of a beautifully deep velvety crimson hue; the sepals are a deep plum colour, very attractive.

Mr. Bull, Chelsea, for—

**Bouvardia Alfred Neuner**, the new American-raised double-flowered variety with pure white flowers beautifully duplicated. It was shown on this occasion better than it has been hitherto, and exemplified more fully its sterling qualities.

**Adiantum aneitense**, an elegant Maiden-hair Fern, having wedge-shaped pinnate fronds about 1 ft. in length, of moderately firm texture, and of a deep green hue.

**Actinopteris australis.**—A delicately pretty Fern of small growth, having the fan-shaped fronds divided into numerous fine segments. The plant resembles in miniature some of the Palms, such as *Chamærops*.

Messrs. Kelway & Son, Langport, for—

**Gladiolus Pelargo.**—A very fine variety in every respect; the spike is fine, the blooms large and of perfect shape with remarkable breadth of petal; the colour a rich carmine-crimson flaked

\* "Pear Culture for Profit." By P. T. Quinn, Practical Horticulturist. New York: Orange Judd Company, 245, Broadway.



and streaked with a deeper shade, and the lip petal having a heavy blotch of deep violet-purple.

Mr. Croucher, Sudbury House Gardens, Hammersmith, for—

**Echinocactus Wislizeni.**—Of globular form, deeply ribbed, and furnished with strong hooked spines which render the plant very grotesque.

**Cereus giganteus and C. pectinatus.**—Two handsome species, the latter particularly so, as the numerous spines which clothe the conical mass are of a reddish hue.

Mr. Green, Pendell Court Gardens, Bletchingley, for—

**Asplenium pteridoides**, a handsome Fern, having the fertile fronds finely pinnatifid, and the barren ones less so. Both kinds are of leathery texture and of a deep shining green. Native of Lord Howe's Island.

Messrs. Cannell & Sons, Swanley, for—

**Malva moschata alba**, the pure white-flowered variety of the British Musk Mallow. It is an extremely pretty and attractive plant, the flowers being agreeably perfumed like Musk. It is specially well adapted for cutting purposes.

Mr. A. Waterer, Knap Hill Nursery, Woking, for—

**Abies canadensis variegata**, a variegated-leaved variety of the Hemlock Spruce, which when seen in a large specimen would be very effective.

The Society's Garden, Chiswick, for—

**Canna iridiflora hybrida.**—A very beautiful variety similar to *C. Ehemanni*, exhibited on several previous occasions, the flowers being quite as large, produced in the same manner, but the colour is somewhat deeper.

Mr. Dunnett, Stour House, Dedham, for

**Current Black Champion.**—The finest of the varieties hitherto known, it being extremely prolific, the berries large, and ripening simultaneously in the same cluster. It is a fine acquisition among new fruits, and one that will be especially valuable for market growers on account of its extreme fruitfulness.

Mr. Walker, Thame, Oxon, for

**Pea Perpetual Bearer.**—This is a first-rate Pea, particularly as regards its cropping qualities, no fewer than two hundred full-sized pods being borne on a single plant sown about the third week in March. It was certificated also by the Royal Oxfordshire Society, when it was shown bearing upwards of three hundred pods.

Messrs. Veitch & Sons exhibited a small, but choice group of plants, consisting of *Cypripedium porphyrospilum*, a hybrid between *C. Hookeræ* and *C. Lowi*; *C. selligerum*, the result of crossing *C. lævigatum* and *barbatum*; *C. calanthum*, also a hybrid raised between *C. Lowi* and *biflorum*. *Phalenopsis violacea* was shown finely in flower; also *Cattleya gigas*, a wonderfully fine variety; *Angræcum Scottianum*, *Pachystoma Thomsonianum*, *Cynoches Egertonianus viridis*, a very singular Mexican Orchid, and *Rhododendron Princess Alexandra*, one of the finest of the hybrid greenhouse varieties, having large trusses of white flowers.

Mr. Bull likewise had a good group, including *Odontoglossum vexillarium rubrum*, the finest variety as regards depth of colour yet exhibited, darker even than Lehmann's variety; also exhibited *Kämpferia Gilberti*, a handsome variegated-leaved plant of dwarf growth; *Dionedule lanata*, *Microstylis metallica*, *Fuchsia M. Lombard*, a fine new double-flowered sort; *Selaginella japonica variegata*, *Lycopodium ulicifolium*, and a fine pot of *Lilium Batemanniae*.

A magnificent collection of *Gladioli* numbering some half a hundred spikes, was exhibited by Messrs. Kelway & Son, Langport, Somerset. Every sort was superb both as regards size of spike, form, substance of flower, and colour. The selection of the finest included *Queen Mary*, pale mauve, feathered with purple; *Phadius*, pink, flaked with carmine, *Maxentius*, rosy-pink; *Neocles*, pink, flaked with salmon; *Belgica*, rose, flaked with

carmine; *Tennyson*, flesh, streaked and flaked with crimson, very fine in spike and flower; *Michael Angelo*, brilliant scarlet; *Zurita*, pink-yellow lip; *Pelargo*, brilliant vermillion, lip intensely deep violet-purple, very fine; *J. T. Gibson*, crimson flaked with a deeper hue and streaked with white; *Thomas Carlyle*, similar to the preceding, but more brilliant; *Lord Petre*, bright scarlet; *Cassino*, magenta, flaked with white; *Lord Leigh*, deep carmine, streaked with white; *Romeo*, T. S. Ware, Mrs. Laxton, *Paterculus*, *Lund*, *Serapis*, Mr. Marshall, *Ada*, *Batavia*, *Hermanni*, *Pontius Brutus*, *Oberon*, *Ptolemy*, and *Dr. Woodman* were also extremely fine.

From Messrs. Cannell and Sons, Swanley, came a superb collection of double *Petunias*, comprising forty varieties, four blooms of each. These represented a wonderful variation in colour, and also as regards the fringe of the petals. The most striking kinds were *La Frisure*, white, purple centre, finely fringed; *Compton Beauty*, deep purple, edged with white; *Talisman*, finely shaped bloom, beautifully fringed; *Hibernia*, deep purple, quaintly edged with green; *Neptune*, pure white fine flower; Mrs. Bradshaw, deep purple-rose, finely fringed, a beautiful contrast to the last; *Favourite*, an exquisite flower, of a deep rose; *Posthumia*, white, flaked with purple; *Antagonist*, pure white; *Adonis*, petals cut up in a very fine fringe; *Duke of Edinburgh*, pale rose, and *Labyrinth*, a compact bloom of a fine purple-rose. The same exhibitors also showed a great variety of *Salpiglossis sinuata* blooms, *Harpalium rigidum*, one of the finest of hardy yellow-flowered Composites, *Delphinium cardinale*, the large scarlet-flowered Larkspur, and a fine collection of African Marigolds, the blooms being unusually large, of perfectly globular form, and high colour. To these exhibits a vote of thanks was accorded.

The splendid *Lilium Parkmanni*, a hybrid variety between *L. speciosum* and *auratum*, was shown in fine flowering condition by Mr. Anthony Waterer, Knap Hill Nurseries, Woking, to whom a cultural commendation was awarded, and also a vote of thanks for three fine plants in flower of *Lily Mrs. Waterer*, also a hybrid variety raised by Mr. Thompson. The flowers are large, pure white, copiously spotted with deep carmine. Mr. Waterer also exhibited plants of *Erica vulgaris aurea*, with the foliage of a bright golden hue, and the variety *alba minor*, a pretty dwarf form with white flowers.

Messrs. Carter & Co., High Holborn, showed a new *Eschscholtzia*, named *Rose Cardinal*, a hybrid from *Mandarin*. It is a lovely variety, the delicate rose tint extending to the interior as well as the outside of the petals. The same firm also showed *Tropæolum Empress of India*, a remarkably deep coloured variety, and some well-flowered plants of the beautiful *Lilium Batemanniae*.

From Sir George Macleay's garden at Pendell Court, Bletchingley, Mr. Green brought a fine plant of *Palisota Barteri*, bearing clusters of its bright red, seedling, wax-like fruits; also cut blooms of *Montbretia Pottsi*, Mr. Ware sent blooms of single *Dahlias*, including a pure white kind named *White Queen*. Two dozen blooms of *Carnation The Governor*, a large blush-tinted kind, were exhibited by Mr. Cross, Salisbury. *Watsonia rosea*, one of the finest of the species, having large rosy-purple flowers, was shown very finely by Mr. G. F. Wilson, Heatherbank, Weybridge, to whom a vote of thanks was accorded. A similar recognition was voted to Captain Patton, Alpha Road, Regent's Park, for a plant of *Lilium auratum*, having a fasciated stem bearing many flowers. A numerous collection of cut flowers and plants of *Abutilon* came from the Society's garden at Chiswick, the finest of which were *Louis Van Houtte*, *Reine d'Or*, *Fleur d'Or*, *Ne Plus Ultra*, *Seraph*, *Lemoine*, *Souvenir de St. Maurice*, and *Climois*. Some flowers of *Scabiosa atro-purpurea* and varieties were also shown, some being particularly attractive, especially the double white kind.

**Fruit.**—Messrs. Rivers & Sons, Sawbridge-worth, were accorded a vote of thanks for a fine collection of Cherries numbering about a dozen varieties, of which *Bigarreau Noir de Schmidt*,

*Bigarreau Noir de Guben*, *Monstrueux de Mezel*, *Late Black Bigarreau* were the finest. The same exhibitors also showed *Apples Williams' Favourite* and *Benoni*. Melons were shown by various exhibitors. *Harefield Grove Hybrid*, a large netted sort, from Mr. Monro, Uxbridge, and large *Victory of Bristol*, which received a first-class certificate last year, came from Mr. Bailey, Shardeloes, Amersham, and *Kesterton Melon* from Mr. Davies, Kesterton, Flint. A cultural commendation was accorded to Mr. Record, Belmont House Gardens, East Barnet, for three fine *Queen Pine-apples*, the three weighing 10 lb. 6 oz. Mr. Philips, gardener to Captain Jackson, Meopham, Kent, showed three remarkably fine bunches of *Duke of Buccleuch Grape*, the berries of which were very large, fine flavour, very juicy, and thin-skinned. A cultural commendation was awarded. Mr. Philips also exhibited a dozen fruits of *Perfection Tomato*, a cross between *Trophy* and *Acme*. These were large, finely-shaped, and of high colour. Fig Dr. Hogg was shown by Mr. Fleming, Cliveden, Maidenhead. It is a handsome fruit, and said to be of excellent quality.

Three new sorts of Peas were shown by Mr. Culverwell, Thorpe Perrow, all of which seemed to be first-rate, both as regards fruitfulness and size of pods. A new Pea, shown by Mr. Eckford, gardener to Dr. Sankey, Sandywell Park, Cheltenham. It is apparently a prolific bearer.

From the Society's Garden, Chiswick, Mr. Barron exhibited eight varieties of Early Apples, comprising *Irish Peach*, *Sack and Sugar*, *White Juneating*, *Red Astrachan*, *Early White Dessert*, *Russian*, *Early Julien*, *Duchess of Oldenburg*, *Oslin*, also *Pear Bergamotte Auguste Jurie*. Three sorts of Turnips were likewise shown; these were *Golden Ball*, *Early Silver Ball*, and *Tibetan*, the latter sent to the Society by Mr. Elwes.

**Special Prizes.**—The prizes offered by Messrs. Hooper & Co., Covent Garden, for twelve fruits of *Model Tomato* and *Sirdar Melon* of *Cabul* brought out a poor competition, there being but two Melons shown, the best of these being from Mr. Williams, Peasemarch Place Gardens, Rye. The fruit shown was a handsome round yellow-fruited kind; the other, an oblong ribbed fruit, was shown by Mr. Steggle, Faulkeners House Gardens, Hadlow, Tunbridge.

**Ornamental Trees and Shrubs.**—The group of these exhibited by Messrs. C. Lee & Son, Hammersmith, from their tree nursery at Isleworth, exemplified in a striking manner the wealth of variety there exists in our hardy tree nurseries despite the fact that the demand for them is by no means such as to encourage nurserymen to develop their collection in that direction, a circumstance to be regretted when it is considered what poverty of variety there exists among trees and shrubs, particularly the deciduous kinds, in most private gardens. The collection exhibited comprised about a hundred kinds, including *Maples*, *Oaks*, *Walnuts*, *Poplars*, *False Acacias*, *Limes*, *Alders*, *Elms*, and a variety of other trees. Among the most noteworthy were *Paulownia imperialis*, of which there was a branch shown bearing gigantic leaves 1 ft. or more square. Among the *Acers*, *colchicum rubrum* was remarkable for the reddish hue of its foliage, which lasts from early spring till autumn; *A. lobeli* and *dissectum*, *platanoides* and varieties; among the latter *Retembachi* with deep red foliage, and *laciniatum* with singularly cut foliage resembling an eagle's claw; *A. campestre variegatum*, *A. striatum*, the *Snake's-bark Maple* and variegated *Sycamores*. Some of the *Oaks* were particularly fine, notably the true *Champion* (*Quercus rubra*), with large bold leaves; *Q. pannosa*, *Daimyo*, *Thomasi* were likewise very fine, also the *Golden Oak* (*Concordia*), and *palustris*, the latter being a coppery red. The *Poplars* were well represented by the best kinds, including *P. alba* and its varieties, *candicans nivea*, both better than the type. That rarely-to-be-met-with species, the *Kentucky Coffee Tree* (*Gymnocladus canadensis*) thrives well at Isleworth, judging by the fine specimen shown. Among the *Planes* was the new *Platanus californ-*



nica (*P. racemosa*), which has universally large foliage, and is said to be hardier even than the Western Plane (*P. occidentalis*), which, under the circumstances, renders it one of the finest of late additions to exotic trees. The varieties of the Sweet Chestnut, *Castanea vesca*, are very handsome, particularly *alba marginata*, the leaves of which are very distinctly variegated. *Cornus Mas aurea elegantissima* was shown in a bright condition, better than we had hitherto seen it. It is one of the finest variegated shrubs in cultivation. Other conspicuous kinds were *Alnus glutinosa imperialis*, *rubro nervia*, *Fraxinus excelsior concavifolia*, *Juglans cinerea* and *nigra*, all the *Planeras*, Mountain Ashes, both the red and yellow fruited sorts, various kinds of *Rhus* and *Elder* and *Elms* in great variety. Among the latter are some *tiliaefolia*, being remarkable for the large size of the lime-like leaves.

The well-grown group of Balsams exhibited in the corridor by Messrs. F. & A. Smith, Dulwich, contributed to the attractiveness of the meeting. The flowers were large and perfectly double, altogether representing a particularly fine strain.

#### ALEXANDRA PARK.

At the show held here on Saturday last, Messrs. Kelway & Son, of Langport, had a magnificent collection of Gladioli, consisting of some 400 well developed spikes, in almost endless variety. This collection, which was exhibited on a long straight table, was backed its whole length with a row of cut spikes of *Hyacinthus candidans*, from 2½ ft. to 3 ft. in height, making a striking contrast with the glowing colours of the Gladioli. The table decorations were of the usual stereotyped description, the exhibits being from the same artists whose names one usually sees at such exhibitions. Brides' bouquets were also shown, but they seemed too large and heavy; some of them measured at least 4 ft. in circumference. Bridesmaids' bouquets and ball bouquets were equally cumbersome. Button-hole bouquets were very pretty, but mostly too large. Baskets were wanting in simplicity of arrangement, a remark which also applies to the vases in pairs, and the rustic vases evidently displayed quantity and quality rather than simple and tasteful grouping.

#### Award of Prizes.

Dinner Table Set for Twelve.—1, Mr. A. Stuart, \$4, Seven Sisters' Road, N.; 2, Miss E. Spelling, 31, George's Road, Regent's Park; equal 2nd, Miss A. M. Williams, Victoria Nurseries, Upper Holloway; 3, Mr. W. L. Buxton, St. Mary's Cray, Kent.

Dinner Table Set for Six.—1, Miss Williams; 2, Miss E. Spelling; 3, Mr. W. L. Buxton.

A Pair of Vases, the Flowers and Decorations to be not less than 1 yd. in diameter.—1, Miss E. Spelling; 2, Mr. A. Stuart; 3 (disqualified), Miss A. M. Williams.

A Rustic Basket of Plants.—1, Mr. T. J. Taylor, 3, Dagmar Villas, Finsbury Road, Wood Green; 2, Miss A. M. Williams; 3, Mr. A. Stuart.

A Hand Basket of Flowers.—1, Mr. J. Prewett, Swiss Nursery, Hammersmith; 2, Miss A. Williams; 3, Mr. A. Stuart.

The Brides' Bouquet.—1, Mr. J. Prewett; 2, Mr. W. Brown, St. Mary's Grove, Richmond; 3, Mr. H. Tomlinson, 7, Finsbury Cottages, Wood Green.

Three Bridesmaids' Bouquets.—1, Mr. J. Prewett; 2, Mr. M. W. Brown; 3, Miss A. M. Williams.

Three Ball Bouquets.—1, Mr. W. Brown; 2, Mr. A. Stuart; 3, Miss A. M. Williams.

Three Bouquets of Wild Flowers.—1, Miss M. A. Baines, Fern Cottage, Palmer's Green, Southgate, N.; 2, Mr. Stockwell, Mortlake Road, Richmond; 3, Mr. T. Batson, Muswell Hill, North Hornsey.

Flower Stand for Drawing-room Table.—1, Miss Baines; 2, Miss Williams; 3, Mr. J. M. Prewett.

Six Arrangements for Button-holes.—1, Miss Williams; 2, Mr. Prewett; 3, Miss Viola Prewett; equal 3rd, Miss M. A. Baines.

Best Collection of Gladioli, spikes of blooms.—1, Messrs. Kelway and Son, Langport, Somerset.

Twenty-four Spikes of Gladioli.—1, Messrs. Kelway and Son.

#### LATE NOTES AND QUESTIONS.

R. W.—See the new illustrated edition of the "Wild Garden."

Water proofing.—How can linen stretched on frames for plant protectors be prepared to resist the action of the weather? TUBEROSE.

Improving Bagshot or Greensand.—What is the best manure to mix with a soil almost wholly composed of Bagshot or greensand? I should be extremely obliged for some information through your columns on this head. —R. W.

Bee Flower.—Is the yellow Bagwort an objectionable plant for bees? It has an unpleasant, coarse smell; but when a few days ago I desired to have a field cleared of it, and went to see how the work was going on, I found the flowers so covered with bees and butterflies, moths, beetles, &c., that I kept patches of the plants, and am anxious to know if it is good for honey, as if so it would be well to leave it on waste ground for bees. —R. B., Basset Wood, Southampton.

Names of Plants.—T. Balding.—1, *Saponaria Vaccaria*; 2, *Symphitum officinale*.—Rev. E. Dowell.—A species of *Gypsophila*.—W. T. (Winborne).—*Hieracium aurantiacum*; not uncommon; sent without name attached; *Achillea Ptarmica* fl. pl. —C. Dennis.—*Clitria Ternatea*.—J. Chester.—*Cattleya Forbei*.—E. A. H.—*Valeriana officinalis*.—F. R. M.—1, *Lotus corniculatus*; 2, *Prunella vulgaris*; 3, *Potentilla* sp.; J. M.—Apparently *Jasminum revolutum*.—Mrs. J. (Broomslough).—*Nicotiana rustica*, a kind of Tobacco. —Subscriber.

Catalpa bignonioides. There is no accounting for the withering you mention, it being a peculiarity of the tree. G. J. H. 1, *Abutilon Boule de Neige*; 2, *Bienertia venusta*; 3, *Davallia Tyermanni*; 4, *Platyloma rotundifolia*.—Anon. 1, *Lophospermum scandens*; 2, *Aschyranthus pulcher*; 3, *Epiphyllum truncatum*; 4, *Fuchsia fulgens*; 5, *Nierembergia gracilis*; 6, *Felicia tenella*.

#### MR. HIBBERD.

I HAVE received a letter from Mr. Hibberd's publishers, or rather their legal advisers, in which they ask "what steps I propose to take to remedy the prejudicial effect" presumably of a paragraph telling of my having "established a journal (*Gardening Illustrated*), which appeals to the public to the extent of at least 40,000 copies a week more than their own." But the statement is true and within the mark. Mr. Hibberd, instead of defending himself from the charges made against him, raises such an issue as that I have been "much employed in the abuse of such estimable gentlemen as Sir J. D. Hooker, Dr. Masters, Dr. Hogg, Mr. Thomas Moore, Mr. Worthington G. Smith, and I will even add the Rev. Reynolds Hole," on none of whom has any personal observations ever been made by me. In the many thousand articles and notes published in this journal since its commencement, my aim has been to eliminate personalities.

It is Mr. Hibberd who has introduced the personal element into horticultural journalism. Many instances could be given of offensive and silly personalities of his—aimless, too, so far as the public are concerned. Poor Andrew Murray, secretary at the time of the Horticultural Society, was spoken of as the "white-brown" man by Mr. Hibberd, who proposed to erect a statue of mud to Mr. Murray at South Kensington. He published a caricature portrait of Mr. David Thomson, of Drumlanrig, in one of his Christmas numbers, with various offensive depreciatory and would-be satirical allusions. Then before the appearance of *THE GARDEN* established that loving harmony among the editors of the other horticultural journals, and centred all their ire in a new direction, Doctor Hogg and his academical honours were a subject of satirical comment. It appears his LL.D. is not of British, but of American origin, and where it came from was considered a fair subject for enquiry. Passing without question the right or the taste of such a course in a public journal, it is odd to see Mr. Hibberd figuring as an injured innocent among his "fellow sufferers." In the very same issue of his paper which appears on the day the lawyer's letter comes from his publishers, he prints a string of offensive terms, calls names, but *proves* nothing—his usual custom!

Truth should not be violated by an editor above all persons. His duty is not to himself alone. Mr. Hibberd's statement that the prizes were given to encourage "white" *Asparagus* was absolutely untrue. He also stated repeatedly that the

best lots (and *all*, save one) at Tunbridge Wells were green, whereas they were blanched to the same degree as *Asparagus* is in Paris, or in market gardens round London, and to a greater extent than the *Asparagus* that comes from Dijon, Versailles, or Toulouse. A more misleading statement was never made. Here is the proof, from the market gardener who won the first prize for the best three bundles of 100 heads each

Colchester, July 25, 1881.

DEAR SIR,—In answer to your note, I beg to say my best bells have from 10 in. to 12 in. of earth on them. The only difference I make with such heads as I took to Tunbridge Wells is that so soon as a good head appears above the surface, I gather the loose soil round and over it, and gain 1 in. or 2 in. more. It is, in fact, blanched 1 ft. high.—Yours obediently, A. HARWOOD.

Mr. Hibberd now introduces another element into horticultural journalism—that of nationality, and for this and the personal abuse and caricature business he may well claim originality. With fine unctious he remarks "I can only remember that it is the privilege of an Englishman, which I thank God I am!" It would have been no less honourable to him to have shown some regard for his reputation as to truth and to have withdrawn some recent utterances of his which were far from exact. Credit for his nationality no one will deny him. It is seldom the well-known words in "Pinafore" may be quoted so aptly—

He is an Englishman!

For he himself has said it.

And it's greatly to his credit,

That he is an Englishman!

For he might have been a Russian,

A French, or Turk, or Prussian,

Or perhaps Italian!

But in spite of all temptations

To belong to other nations,

He remains an Englishman!

In introducing a personal matter of this kind to columns usually devoted to subjects of interest to the reader, I have to say to such friends as would advise to the contrary, that I only do so at the end of repeated misstatements, and am in no way the aggressor. W. R.

P.S.—A reader of, and "old subscriber" to Mr. Hibberd's magazine who was not struck by the force or aptness of his comments, has sent that gentleman a protest, and sends me a copy of it. The following are a few lines from its last pages. They are given here in case room is not found for them elsewhere.

"As to abuse of the gentlemen you named, I remember nothing in *THE GARDEN* beyond the ordinary terms of controversy, and if the editor was at issue with the estimable Sir J. Hooker, so also was Professor Owen. To describe the harmless and pleasant notice of Canon Hole at Sheffield (p. 77 of the *GARDEN*) as 'abuse' is a topsy-turveying of the truth, which is truly extraordinary. . . . The sublime paragraph about the 'privilege of an Englishman' in dealing with a man of another nationality, 'to practise a kindly reserve, hoping all things and believing as much as possible that his intentions are the purest,' reads like a veritable message from the sainted Pecksniff himself.

"But really, esteemed sir, there was no need for you to proclaim in so many words what you are. The illustrations from your books—your Potatoes on tiles, and your Melons (11 of them like 'classical goddesses all standing naked in the open air'), your arches and roots, your 'elephant traps' fix the very place of your nativity, which is unmistakably Cockaigne. One may even discern from your remarkable economy of truth and lavishness of vituperation the very spot ennobled by your birth, and pronounce, in the words of a lyric which once enjoyed distinguished patronage that 'Vitechapel' is undoubtedly 'the village' you were 'bored in.'—I remain, Sir, your obedient servant, SPECTATOR. August 9, 1881."



No. 509. SATURDAY, AUG. 20, 1881. Vol. XX

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare*.

## SOME GARDEN ROSES.

LOOKING round, now that the scorching sun of this summer has brought the Rose season to a close, as far as many varieties are concerned, there are decidedly some points that will strike the lover of the Rose as being of sufficient importance to make a note of them. The last winter and present summer have been marked by such extremes of heat and cold, that in not a few gardens the sorts of Roses that have resisted both may be "counted on one's fingers," so to speak. Let us, then, take note of what they are; they are the true garden Roses that will encourage half-hearted would-be gardeners to try again, and will beautify any ordinary garden if once properly planted. When gazing on the splendid blooms, so artistically contrasted, so perfect in shape, and so rich in foliage that adorn the tables of many a show, it seems almost impertinent to speak of a garden Rose as distinct from a show Rose; but then not all of us can give those conditions which alone can afford show blooms—there is the rub. For one person who is an exhibitor, there must be many who, though fond of flowers in general and the Rose in particular, have been disheartened by their first attempt at growing Roses and say, "They can't grow them." Very likely their failure has been caused by planting standards if their garden lies low, for standards suffer more from frost than dwarfs, which gain protection from the snow, but more likely because they have chosen varieties that require favourable positions to thrive at all.

**HARDY STANDARD ROSES.**—No doubt the last severe winters will give an impulse to the rapidly growing fashion of relying upon dwarf Roses, but it would be a pity to discard entirely all standard Roses, for there are situations where they look extremely well. A few standards well placed and well grown will beautify enormously a flat bed of dwarf Roses; and it is cheering to notice that there are a few kinds that still survive the past seasons and look well. First and foremost in hardiness, glossiness of leaf, and cheerfulness of flower, stands *Aimée Vibert*, a charming old *Noisette* Rose, of which the raiser said: "The English should go down on their knees before it," and certainly for effect in the garden it is still not to be surpassed in August and up to the beginning of winter, though exhibitors would not admit it in their list. That gigantic and *Pæony*-like Rose *Paul Néron* is another hardy Rose that will assert itself, even in a shrubbery, and it is curious to remark that this Rose in a hot, dry summer has a delicious scent, while in wet and cold summers it is devoid of fragrance. This was brought first to my notice when an enormous bloom, 7 in. across, was sent to me at Nice from a garden there, and I found that under that hot sun *Paul Néron* was sweet scented. In England on hot days the same thing may be observed. This Rose blooms freely in autumn when well established—a necessary attribute of the true garden Rose of the future. Another Rose that is not grown half as much as it deserves is *Princess Mary of Cambridge*, good in growth, in colour pink, sweet scented, and withal a Rose that is worthy of the exhibitor's praise. Of red Roses, that shall bloom freely in autumn, and are yet frost-proof as standards, the list is, indeed, small. General *Jacqueminot* seems best to have

survived all extremes, though *Dr. Andry* is a very reliable second everywhere. Of rose-coloured Roses there are more that can be depended upon, and *Abel Grand*, *Madame Clémence Joigneaux*, and faithful *Jules Margottin* are as vigorous as ever—fit for prominent positions everywhere. Of yellow Roses, we still have *Gloire de Dijon* to cheer us alike on wall, as standard or as dwarf, though in the last position some repression in the way of pegging down is required; and here must end the list of Roses that are sweet, hardy, and free flowering in all positions and seasons, so that even as standards all may depend upon them.

**DWARF ROSES.**—When once we descend to dwarf Roses, there is happily a large choice for the most fastidious. First and foremost among bright red come the twin *Alfred Colomb* and *Marie Baumann*, Roses so much alike in bloom, and yet differing happily, so that one will grow when the other refuses to do so. *Madame Victor Verdier*, *Charles Lefebvre*, *Exposition de Brie*, *Maurice Bernardin*, *Ferdinand de Lesseps*, and *Sénateur Vaisse* all flower freely in autumn, and are red in colour, sweet and useful old favourites. *François Michelon* among rose-coloured ones, and *La France* among pinks, stand pre-eminent this summer, and it is impossible to leave out *Captain Christy* and *Eugénie Verdier*, for they are excellence itself in all respects save that they have no scent; they, too, seem unscathed this season. Among dark Roses, the old *Prince Camille de Rohan* and *Louis Van Houtte* have stood heat and cold better than *Mons. Boncenne* and *Xavier Olibo*, and bloom more freely in autumn.

A GARDEN ROSE, above all, should be free-flowering, sweet-scented, bright in colour, so that an exquisite Rose whose shape commends it to the exhibitor, and delights the eye at a show, may not be useful in a garden where freedom of bloom and sweet odours are the desideratum; so with a bold hand—perhaps too bold for some—I would cut out from my list all the *Victor Verdier* race of Roses, except those two mentioned above, as being so scentless, and apt to turn a dull purple in rough weather. That most beautiful Rose, *Etienne Levat*, also comes, I fear, under that category, though of somewhat different parentage. No list of garden Roses would be complete without the sweet old *Bourbon*, *Souvenir de la Malmaison*, invaluable in more shady situations where less vigorous constitutions would languish, and, flowering in such places, brightens the sombre greens with its delicate flesh tints. It is for the exhibitor rather than the gardener to experiment with

**NEW ROSES**, but even a list small as this would lack much if the names of two such Roses as *A. K. Williams* and *Madame Gabriel Luizet* were omitted. It is a great pleasure when any new Rose can be mentioned that is good enough and yet distinct enough to add to the list of one's garden friends—a very different thing to the exhibitor's list, where a new name counts too often for a new variety. Tea Roses deserve a place to themselves, of which I shall hope to write some day soon, for they are, if possible, more satisfactory to the grower than the descendants of the various Roses classed under *Hybrid Perpetuals*. It was impossible, however, for one who holds with *Shakespeare*, that "the Rose by any name will smell (as) sweet," to leave out *Gloire de Dijon* from any list. E. H. W.

**Protecting Roses in Winter.**—If I mistake not, Mr. D. T. Fish advocated the covering up of Roses with earth as a winter protection, but now it appears from his remarks anent the Roses at Mr. Cant's, that those with the lightest and thin-

nest of coverings did the best. This all will be glad to hear, as instead of raising huge mounds over our plants to save them from frost, we may yet depend, as before, on the simple protection afforded by a handful of bracken or straw.—S. D.

## NO MORE BRIERS.

WHAT, then, shall we do with our buds? Yes, that is the question, and it is a more than usually pressing one this season. Seldom have buds and Briers kept worse time than this year. The Briers were almost up to their usual time, the buds several weeks behind it. When the former were fit to operate on, the latter were hardly visible. But every day the budding went on, the buds having so overtaken the Briers that towards the close it would have been impossible to have had buds in finer condition. Again, through the mortality among Roses during the past winter, the season threatened us with a scarcity of buds. True, the Briers were also killed in many instances. Yet as a rule the trade seem to have saved their Briers, and the problem at the beginning of the budding season was how to get buds enough for the Briers. Chiefly through the rains and other causes we are left at the end of the budding season with a large stock of good buds on hand, and we repeat the question: What shall we do with our surplus Rose buds? There are only two modes of treating these buds; the one consists in leaving them on the tree or bush, and the other in their removal and conversion into independent plants. There is much to be said in favour of both, though the latter is the system to be chiefly adverted to here. The former, however, deserves a passing notice.

**BUDS LEFT ON THE PARENT TREES.**—The budding season is also the best season for reconstructing Rose trees or bushes. Each fine bud left has within it the germs of a new and often better plant than its parent. With a few such buds well posted we have a new maiden Rose tree in embryo of greater strength and larger size than most of our newly-budded Briers. In all cases where Roses show signs of weakness or distress cut them back to three, six, a dozen, or more of the finer buds left, and within a few months behold them with their wounds healed, their youth renewed, young, vigorous Roses, ready to start afresh on their new lines of sweetness and beauty. June and July are probably the best months for reconstructing Roses from buds, though it may be carried on all through August, or, indeed, almost at any time. The chief secret consists in cutting off all weak parts, and concentrating force into the few or many strong buds left. It differs from summer pruning in being carried much further and in compelling a fresh break from buds, rather than any mere selection of Rose shoots already in existence. The difference is vital, and possibly affects the ultimate results far more than could be supposed. It is certain at all events that Roses so treated break with unusual force, and grow with unwonted vigour, and hence wherever good buds can be found associated with weakly Rose plants boldly cut off all the weakness, and concentrate the whole power and resources of the Rose into the buds left. The buds would often yield far better results treated thus than if they were removed into Briers or any other stocks.

**EARTH-ROOTING.**—This brings us to our second plan of using the buds after there are no more Briers. It will be best to state without circumlocution that our new stock for buds is a moist medium. The earth will do, though it may not be the best. Pure silica, fine charcoal dust, Cocoa-nut fibre refuse, or thoroughly decomposed *Sphagnum* will probably prove the best medium. It would be folly to affirm that this new or rather older stock is equal to the Brier or other growing Rose. In these the stocks take a more or less active part in rooting the buds into their tissues. The part of the stock, however, is more passive than active. In not a few cases and conditions it is probably almost wholly passive. Its fluids are so watery that probably their chief function consists in



keeping the base of the bud and its shield of bark fresh by regularly supplying it with moisture. Now, assuming that this may be the chief function of stocks, why should not a moist medium prove as effective in rooting the buds as a warm one is in hatching chickens? It is certainly difficult to determine the temperature of the Brier, or to measure the amount or force of the sap to which the bud is exposed in the branch of its foster parent. But of several points we may be assured there can be no stagnation of sap under proper management, for it has a free passage past or around the buds. Again, the bud cannot be disturbed till it is rooted. The last finishing touch of the budder renders it immovable. The bud and its appendages have also a sufficient store of independent life to stand or live alone till it becomes united to the stocks.

**ROOTING ROSE BUDS.**—First of the medium itself in which they are to be rooted: it must be porous at base, for drainage is the foundation of horticulture. Water in motion is the breath of its life; at rest, it is its death. It must be hard. Firmness provokes growth; this is so with seeds, cuttings, buds, especially the latter. The bark and bud coverings hold growing force as in a vice. The ratio of growth may often be measured by the amount of mechanical and other resistance that holds it in check. The providing of this necessary firmness is one of the difficulties of rooting Roses in our new medium. Moist silica gets more solid than any of the other materials, and perhaps for this and other reasons it is the best. It is also pure as well as firm. The buds need nothing from our moist medium but pure water. The buds need differ little from those used for insertion into Briers. If anything perhaps they should be rather riper; growing buds and succulent dormant buds must be avoided. The former will exhaust rooting strength in useless growth; the latter have not enough store of organisable matter to root at all. Plump well filled dormant buds are the ones to choose. With mature buds and thick bark and special care in insertion and after treatment, the buds will form roots. But it is far better to retain a thin sheath of wood under the buds. It provides it with more food during the preliminary stages, and thus lessens the risk of being starved to death while endeavouring to root. The sheath of wood, too, enables the bud to be securely fixed in its rooting medium without risk of injury to the bark. Besides, it is just at the point of union between the bark and the wood that roots are formed. It is a mistake to assume that these are formed by either the wood or the bark; on the contrary, they proceed from what is called the cambium, a sort of disputable borderland between the outside of the wood and the inside of the bark. Consequently by abstracting the wood we greatly lessen the bud's power to form roots.

**LEAF TO BE LEFT ON THE BUDS.**—In the case of small-leaved Roses the leaf should be left intact. With larger-leaved sorts two or three leaflets should suffice. There is a practical difficulty in leaving too much leaf. Its weight, unless supported by a tiny stake (really the best method), is apt to pull the bud out of the rooting medium. Otherwise, perhaps, the more leaf left the better, for the green leaf may be said to take the initiative in the formation of roots. Each movement of fluids through it causes a correlative movement throughout the bud and its appendages, and these movements, in whatever direction, are summonses to the bud to hasten to make roots. Of course, atmospheric and other conditions must be sufficiently moist to prevent the leaves from flagging; the bud and its appendages will also be preserved fresh by being buried, all but the point, in the moist sand. A close, cold frame is the best place for rooting Rose buds. The soil must be moist and perfectly drained, and will not require much water until the buds have rooted. The leaves should be dewed over once or twice a day, and no sun should shine directly on them till the buds have taken to the soil, that is, either callused or formed roots. Artificial heat may be given, and bell or other

propagating glasses or cloches used, but as these introduce fresh elements of danger, and are by no means essential to the rooting of Rose buds in earth, they are better dispensed with. It is hoped that two classes of readers at least may profit by this article—those who wish to have all Roses on their own roots, and also those who are so enamoured of the Brier that they have used up every one of them. Though their own views are so widely divergent, they may meet in friendly rivalry on this common ground of forcing the earth itself, to become the true foster parent of many a good Rose.

D. T. FISH.

#### ROSE HOUSES.

HAVING seen several Rose houses of late, I may state that I have not been so well satisfied with them as with my own. This self-satisfaction is doubtless in a great measure derived from the sorts of Roses grown, but culture has also something to do with it. In some cases growers err in making their Rose borders too rich, in others there is too little room. Thus in one case the plants have been driven to make a coarse rank growth that has been productive of great results for a year or two and then the plants collapse; in others the plants are starved into the production of spindly wood and a few flowers. With the exception of *Maréchal Niel* on its own roots, and planted inside in a very roomy bed, all the others in my case are half-standards on the Brier, and planted in outside borders. These borders are far from being rich; they consist entirely of stiff yellow loam, or, perhaps, half clay, getting an occasional top-dressing of manure that is forked slightly in. The stems are run through the walls, just as vines formerly used to be, and the heads come just within the house, so that no space is wasted. That the plants thrive so well, for they make robust, healthy growth every year, I greatly attribute to the roots finding all they want in the soil, and not being excited to produce a coarse, unhealthy growth. *Maréchal Niel* does well, so does *Homer* (one of the best of all house Roses) and that beautiful white *Noisette Lamarque*, a first rate kind to run over wires. Associated with these are *Catherine Mermet*, the most delicately tinted and elegant of all Teas; *Marie Guillot* and *Niphetos*, finest of whites; *Souvenir de Paul Neron* and *Anna Olivier*, charming tinted flowers; *Madame Berard* grows in the stiff soil too robust altogether for house purposes, and is not by any means free in the way of bloom. It is a fine kind upon which to work weaker sorts, and enjoys a constitution quite peculiar to itself—a fine Rose to cover the outside of a dwelling house, but a bad one for the inside of a Rose house. *Safrano* does well also in our ground, and produces robust wood and many blooms, but it is a vastly overrated kind. If caught in the bud form it is very well, but buds overnight are often even, if cut, loose, expanded flowers next day, and have no stability. There are many better creamy kinds than *Safrano*, and I would infinitely prefer *Mme. Berard* upon an open wall. One mistake made commonly in the treatment of Roses in houses is the fear in the use of the knife. Under glass they mature the wood so much better than out-of-doors that there is little danger of cutting too hard. The fear to use the knife causes the wood to become weak and spindly, whilst a hard cut-back will often cause three or four stout shoots to come away, and thus lay the foundation for a grand bloom next year. As to moisture and feeding, in nine cases in ten it is disproportioned to the wants of the plants. Roses in a growing state take up quantities of both, whilst in a dormant condition any amount of moisture does not seem to injure the roots; such at least is my experience on cold, stiff clay soil. In planting a house it is well to alternate the plants according to habit. *Homer*, *Lamarque*, *Maréchal Niel*, *Cheshunt Hybrid*, and others send out long rods that go to the top of the house in no time; for that reason they usually furnish the top of the house better than the bottom. If, however, kinds of a more compact habit be planted alternately,

these will fill in the lower part of the house, and keep it furnished. Our house here is a span and without heat.

A. D.

**Marguerite Brassac.**—In your notice of the Cranston Nursery's show of Roses in the Regent's Park, *Marguerite Brassac* is described as a new Rose of a deeper shade than the well-known *Charles Lefebvre*. My first exclamation was, Can it be possible? If so, then we must have reached almost the deepest depth of beauty. Anything deeper than *Charles Lefebvre* at its best seems almost beyond our depth in Roses. But we can hardly have too many Roses of this splendid type, and would therefore welcome the new deep dark beauty with pleasure.—

D. T. FISH.

**Mammoth Marechal Niel.**—One of the largest Roses of this kind known in America is now growing in the greenhouse of Mr. William B. Reed, a florist at Chambersburg, in the State of Pennsylvania. It is nine years old and still in a most vigorous condition. It is really worth a long journey to see, and attracts large numbers of visitors. A single stalk rises from the ground which measures 8 in. in circumference. A few feet up it branches off into numerous smaller main branches, and the whole bush covers an area of over 300 square ft. Mr. Reed informs me that he has taken over 3000 flower buds from this Rose during the past year. Incredible as this statement may appear to growers who are familiar with the habits of this favourite Rose, it is nevertheless unquestioned here. It is fair to infer, therefore, that Mr. Reed has realised not far short of \$1000 for the buds from this Rose for that year, to say nothing of the proceeds of propagation from it, as he is largely engaged in Rose growing.—H. H.

#### GARDEN LABELS.

A GREAT deal has been written about these and much ingenuity shown in the various forms produced, but little, so far as I have observed, has been said about the actual test of lengthened experience in their use, with the exception perhaps of the iron sort from Mr. Ellacombe. "G. M." (see p. 151) uses zinc written with indelible ink; this has been recommended by several of your correspondents in time past—myself included—and I have seen nothing to equal it. Enclosed are two tallies of this material which I wrote sixteen years ago, and since exposed in the open ground to all sorts of weather. You can judge from these of the durability of the writing and of the tallies themselves. The ink used and for which I formerly gave a recipe in *THE GARDEN*, is 12 grains bichloride of platinum to 1 oz. distilled water. It should be specially made up, as the ink of this description usually kept by chemists for test purposes is much too weak. The zinc must have a bright surface before using, which is easily obtained by slightly rubbing with fine emery paper. The size and shape are matters of taste, but they should be of ample length to prevent their being easily knocked out of the ground or thrown out by frost. Any I have seen in seedsmen's shops are much too thin and short. They can be had from any plumber or tinsmith, who has always plenty of the raw material in stock from which to cut them. The price of the zinc is somewhere about 3d. per lb., to which has to be added the expense of cutting and waste. "G. M." incidentally mentions another point—the mode of writing. He commences at the top of the label. This seems to me the proper way, although gardeners usually begin at the lower end. The result frequently is that unless the labels are conspicuously large the beginning of the name is illegible where the wooden label ordinarily used begins to decay. The latter part of the name



is of little assistance in deciphering, terminations in Latin being so similar—*Leucanthemum* and *Helianthemum*, for example. Some gardeners—worse still—write from the top or bottom indifferently, so that the neck has to be twisted in one or other direction alternately in reading the labels in a border—much to the trial of one's temper.

P. NEILL FRASER.

[The labels sent are quite legible, and an improvement on the common wooden label. We have always held that labels should be written invariably from the top, but the odd thing is that many who ought to know write from the bottom. In addition to the good reason given by Mr. Neill Fraser for writing from the top, there is the further one that the writer knows where to begin, and thus can keep the words as far out of the soil as is desirable. Can those zinc written labels be rewritten and used for other plants? That is an essential part in any really good label.—ED.]

## EDITOR'S TABLE.

**THE WHITE MONKSHOOD.**—The true white Aconite from Glasnevin is a good plant, finer than the yellowish Wolf-bane (*A. lycoctonum*).

**SHRUBBY VERONICAS.**—Much of Ireland seems to be a paradise for New Zealand Veronicas. Mr. Colthorpe sends a pretty rose-coloured variety from Waterford. Gardens of these may be made in warm districts.

**CROCOSMA AUREA.**—This bulbous plant, also known as Tritonia, comes very fine from Glasnevin, the flowers 3 in. across when fully expanded. It grows there at the foot of a warm wall in deep peaty soil. Is this an improved form, or is it culture only?

**HYBRID CRINUMS.**—Messrs. E. G. Henderson have raised some interesting hybrids of these between the hardy Cape Crinum and Moore's Crinum. They have been out of doors for a couple of years, are of a delicate rose colour, and likely to prove interesting plants for positions similar to those so often graced by the *Belladonna Lily*. This handsome hybrid is named C. Powelli, and we hope that soon we shall see it in commerce, as we understand that there is already a good stock of it.

**GLOBE THISTLES** (*Echinops*).—No garden should be without one Globe Thistle, and that so far as we know should be *E. ruthenicus*. Some of the other kinds are poor colourless things, vigorous enough in growth, however, and tall; but the kind named has a good bluish head, is a striking plant in a border, and could be established in almost any position.

**BILLARDIERA LONGIFLORA.**—A graceful delicate wreath of fine leaves and wiry shoots, strung with handsome blue berries of various sizes. Mr. Burbidge writes: "It is perfectly hardy here on a greenhouse wall facing south-east, and it has borne with impunity the last three severe winters—not a leaf injured. The plant is now covered with berries. Cold winters and full exposure seem to suit it."

**THE CAPE HYACINTH** (*Hyacinthus candicans*).—Where this is grown in bold masses or groups, and a good bunch of it can be spared for a vase indoors, it is very charming just as it is cut and without any other aid, beyond, perhaps, a few of its own leaves. The fruity scent is pleasant. A noble mass of it from Messrs. Carter. Some people seem to doubt

the value of this plant, but a really well-grown group of it well placed is a delight to see! The way the "bells" are borne by a fine plant is a lesson in plant form.

**SENECIO PULCHER.**—This noble richly-coloured flower is refreshing among the crowd of mean Compositæ now disfiguring gardens, which were selected from the catalogues of those who ought to know better than to offer them. There are a few fine kinds, and these should suffice. Beware of giving good soil and space to tall yellow plants of the Ragwort family. The above plant well flowered from Mr. T. Smith, at Newry.

**THE FLAME NASTURTIUM.**—*Tropæolum speciosum* seems at last to have responded to the careful attentions of the London gardeners, and we have not now to go to Scotland to see this brightest of climbers in bloom. No doubt our plants at present established around London are not so splendid as the long wreaths one sees in a Scotch garden; still, they are very brilliant, and I am indebted to Mr. Kingsmill for one of them, which, placed in a bottle, drops from a bracket its flower-laden shoot like a plumb-line.

**A NOBLE CANNA.**—*Canna Ehemanni* is the handsomest warm-house plant we have seen for a long time, it being what is called a fine foliage plant and good flowering plant in one. A *Canna* with large drooping rose-crimson flowers carried gracefully as a wild Rose; a plant which when well grown will repay the grower, and when out of flower will have its uses too. It deserves good free culture in a warm house. We suppose it to be a form raised from *Canna iridiflora*. From Messrs. Hooper, of Covent Garden.

**PLATYCODONS.**—Very handsome these are now, rich purple cups like Harebells, and yet not Harebells. One admires them and yet one suspects them of very often failing to flower well. We do not believe they ever thrive well on cold soils; they like sandy and peaty soils, so far as we know, but perhaps some of our readers may have observed them doing well under other conditions. Owing to some uncertainty in their flowering we should not be inclined to place them in the very first rank, but when well grown they undoubtedly belong to it. From Grasmere.

**SEA HOLLIES.**—These are lovely now in places fortunate enough to secure good plants of one or two of the best kinds. The beautifully formed head and ray are admirable for cutting and for use in teaching botany. There is no way in which we can teach that science better than by familiarising people with such beautiful forms. We saw a plant the other day nicely established in a plantation, fighting its way well among the long Grass, and with its fine blue stems and singular heads looking "distinguished" even in that position.

**PHLOXES.**—This has been a glorious week for these noble flowers, so varied and so bright in colour, offering whole gardens of beauty, indeed, where any attention is paid to them. They do not seem to be plants that in all districts take care of themselves like the *Japan Anemone*; on the contrary, in gardens under ordinary conditions they want careful attention, and of a kind they seldom get. In a hill garden with a good soil and plenty of moisture they almost take care of themselves, but in ordinary cases mulching, good soil, and young plants are necessary to perfect success. It is a mistake to put these plants in borders

only. They are well worthy of separate treatment in beds or groups, and of thought as to the subjects that mix or associate with them. Mr. Stevens, sends us a noble series of them.

**HONEYSUCKLE.**—There is nothing more delightful at this season than that crimson-red form of the common Honeysuckle; and, moreover, it is not of this season only, for a tuft from which a bouquet has been sent me has been in flower for three months in the same shrubbery. There can be no kind of trouble in growing all the finer Honeysuckles in the wild garden. If there is nothing against which they can run, lean, or scramble over, they may simply be planted on a bank or on the level ground and let alone. How seldom is it that in a large garden artistic use is made of this most beautiful of the climbers of the woods and copses of Europe.

**A NOBLE HARDY AMARYLLIS.**—From Glasnevin Mr. Moore sends flowers of the gorgeous *Amaryllis Ackermanni* from the open air, from plants which flower every season. The blossoms are fully 6 in. in length, and of a magnificent deep scarlet hue, flowering at a season when there are few kinds of *Amaryllis*, even in houses in flower; it is invaluable for warm spots among choice hardy bulbs, and for association with the finer August plants. A fine hardy *Amaryllis* is really a novelty and worth some trouble to secure and find a happy spot for.

**CARNATIONS.**—A magnificent series of these—fine in colour and marking—comes from Edinburgh, the produce of French seed. They are not dressed, they are not in paper collars, nor in "curl papers," but they are beautiful in form and all ways, save perhaps one, which may be described as a leaden lilac. A very curious one has a buff ground with dull lilac stripes and shadings; there are colours enough that will delight those who know most about colour. It would be a delight to see a garden where the finest of the selfs of this collection were grown separately in groups or beds, so that one could really enjoy each kind and see something more than the general "variegated" effect of a mixed collection.

**PANSIES AGAIN!**—The change from the great heats and the occurrence of a few heavy rains have given the Pansies courage, and again they come back to us in multitudes. Three large flat basins, in which they swim as thick as possible, accommodate a collection from Grasmere to which no pen can do justice. The most faithful of all plants, and the most lovely always, there should be no garden where their culture does not receive attention. With such rich variety one might perhaps do something to show it better in different gardens. For instance, one place might, for a change for a year or two, show those delicate self-coloured kinds which we spoke of in the summer; and another, the marvellous blacks and blues, which are now being raised. What we mean is, that the general variegated expression afforded by a line or bed of them may be easily changed where it is desired. Thus one garden might pursue a kind of rotation, giving preference to certain colours one year and occasionally making a total change in this respect.

**A WHITE CLOVE.**—Right welcome is a beautiful white Clove from Mr. Culverwell, of Thorpe Perrow—large, soft looking, and of good fragrance. It is a seedling raised in the garden there, and called Susan Askey. The man who raises a good Clove Carnation deserves our gratitude. How is it one can never get enough



Clove Carnations of any kind? There is a perpetual dearth. Are those obtained and planted lost in the middle of the mixed border? It would be an awful statistic that would tell us of all the plants that go that way. A friend never succeeded with Carnations till he gave them special beds, in which the display for the last five weeks has been marvellous, considering the quantities cut to give away, and now there are plenty of flowers and a crop of buds coming on. Let all lovers of hardy plants notice the things that disappear in the thoughtlessly arranged mixed border. We trust Mr. Culverwell or somebody else will take care that at least a few thousands of this Clove are propagated for the benefit of the people who complain of the dearth of Clove Carnations.

### NOTES OF THE WEEK.

**Essex Field Club.**—We learn that the annual fungus foray in Epping Forest will take place on Saturday, October 1. The conductors will be Dr. M. C. Cooke, Mr. Worthington Smith, and Mr. James English.

**Veitch Memorial Prizes.**—These, among other special prizes, will be competed for at the International Show at Manchester on Wednesday next. The general schedule contains some 240 classes, including some for foreign competitors.

**Monarda purpurea.**—One of the finest of the Bee-balms comes very fine from Glasnevin, the violet-purple flowers and stained bracts being particularly bright. It is not much grown, though we have met with it in cottage gardens, and also finely at Chiswick Railway Station.

**Plumeria rubra.**—A rare plant with flowers 2 in. across, produced several in a cluster, terminating thick gouty stems scantily furnished with foliage. The colour of the blossom is a reddish-yellow, quite different from that of *P. Jamesoni*, which is lemon yellow. In flower in the Cactus house at Kew.

**Roses at Manchester.**—We understand that the following additions will be made to the National Rose Society's schedule at the Manchester Show next week: Class 5, eighteen distinct single trusses, for nurserymen, resident within twenty miles of the Town Hall, Manchester. £1 10s.; £1; 10s. Class 13, nine distinct trusses, for amateurs resident within twenty miles of the Town Hall, Manchester. £1 10s.; £1; 10s.

**Delphinium cardinale** and *D. chinense* album are so charming just now that not a bloom can be kept on the plants, they are in such requisition for cut flowers, the scarlet is so bright and the white so clear. *Nigella hispanica alba* is a most beautiful hardy annual that is not half known enough. The rich chocolate stamens on the white petals make it the admired of all beholders.—E. H. W.

**New Streptocarpus.**—A pretty addition to the few species in cultivation of *Streptocarpus* is one recently named *pauciflorus*, now in flower in one of the stoves at Kew. The flowers are not so large as those of the common *biflorus*, but are pure white, save three purple streaks running down the interior of the tube. It grows about 6 in. high, and being a free bloomer makes quite an attractive plant. *S. polyanthus* is in flower in the same house, and forms a pleasing contrast with the new kind in colour.

**Vallota purpurea.**—Some well grown and copiously flowered plants of this beautiful bulbous plant now light up the eastern octagon of the temperate house at Kew in a brilliant manner. Most of the plants, in 8-in. pots, are crammed full of bulbs, each of which have developed flower-spikes, and the fact that they are not over-potted no doubt accounts for their profuse blooming. Certainly no late summer-flowering indoor plant surpasses in beauty and endurance this *Vallota*,

and it is one of the plants of which one can scarcely have too many.

**Lilium auratum.**—There is at present a plant of this *Lilium* at Frimley Park bearing 96 blooms. These are the produce of one bulb in a pot, and that not a large one. It is to be shown at the Hawley and Farnborough Cottagers' Show, on Wednesday, the 24th inst.—J. C. F.

**Rubus phœnicolasius.**—I have grown this for two years out-of-doors, and, considering that it weathered the two severe winters we have had, it may be reckoned, I think, perfectly hardy. I have now some young plants growing up from where I moved my original plant.—WM. POTTEN.

**Asparagus falcatus.**—A most graceful and fragrant species of *Asparagus* is now in flower at Kew; it is so good that one can hardly give an idea of it otherwise than by showing one of its branches. Such graceful twining plants without showy flowers, but having such high qualities of foliage, and habit, and fragrance, and also minute beauty of flower, deserve to be made a more artistic use of in greenhouse and winter gardens than they now are.

**Manchester Exhibition.**—For the satisfaction of intending exhibitors in classes 219 and 220 who have felt doubtful as to whether they would receive the prizes offered by the General Horticultural Company (John Wills, limited), we are requested to state that the amount offered in the two classes (£102) is already in the hands of the secretary, Mr. Bruce Findlay. We hear that Mr. Wills is annoyed that any doubt should have been entertained that his intentions would not be carried out.

**Lilies in the Wild Garden.**—Mr. Wilson took me to his wild garden lately where I learnt new things about Lily beauty. I was much impressed by their wonderfully dignified movement in wind or in what wind could get at them under the half shelter of the wood. The slow swaying of the tall red kinds, on slender stems from 7 ft. to 9 ft. high, was in curious contrast with the fluttering of tree leaves and the comparatively impatient movements of the trees and bushes of the wood.—L. J.

**Isotoma axillaris.**—One of the showiest among the annuals in flower at Kew is this New Holland plant, which bears a striking resemblance to some of the dwarfed *Lobelias*. Its habit of growth is dense and compact, and the flowers are borne so profusely as to form quite a mass. They are  $\frac{1}{2}$  in. across, star-shaped, and of a pale blue. It continues to flower for a long time, and even till cut off by frosts. If preserved in a frame during winter after the manner of bedding *Lobelias* it is quite perennial, and may be propagated in spring to any extent by cuttings.

**Datura Metel.**—This is one of the noblest of the annual species of *Datura*, though it does not appear to be much known. It grows about a yard high, forming a bushy specimen. The leaves are ample, the stalks purplish, and the trumpet-shaped flowers large and pure white, hence highly attractive, much more so than *D. Stramonium*. Among the purple-flowered kinds *D. Tatula* and *D. ceratocaulon* are the best. These plants often sow themselves when once grown, but seeds should be sown in heat, and the plants subsequently treated as half-hardy annuals.

**Japanese Sophora.**—An interesting feature of the old arboretum at Kew just now is the grand old specimens of *Sophora japonica* laden with a profusion of white flowers, which are borne in large, terminal, loose panicles. These, with the emerald green feathery foliage, produce a fine effect. It is a matter of regret that such a handsome and hardy tree as this is not more commonly planted, for it is far finer than most trees of a similar character. It is interesting to observe how fond the bees are of the flowers, some even crawling among the fallen blossoms on the turf.

**Beautiful Gesneras.**—Among the extensive collection of Gesneraceous plants in flower at Kew the most attractive and most serviceable for

general cultivation are *G. Donkelaari* and *G. allogophylla*. The former is an old kind, with the large purplish leaves and long tubular blossoms of a lovely crimson cerise colour produced in large clusters about the foliage. The other kind is quite of a different habit of growth, being tall, the leaves smaller and green, and the flowers shorter and of bright scarlet, produced in loose drooping clusters. Both are very showy, and well merit cultivation in every collection, be it ever so select.

**Bignonia Unguis**, now in flower in the Palm house at Kew, is a lovely stove climber that deserves to be grown by everybody. It has long slender wiry branches, opposite leaves, each consisting of a couple of leaflets, while the third is reduced to a tendril by which the plant climbs. The blossoms terminate the branches in dense clusters of from six to ten. They are 2 in. long, trumpet shaped, of a lovely violet purple, with darker lines running down the throat. It is apparently a plant of easy culture, as no extra care is taken of it, and it flowers annually about this season in graceful profusion from the roof of the house. It is a native of Tropical America.

**Tropæolum speciosum.**—At Ravensdale, Lord Claremont's place, a border 70 yds. long is devoted to this *Tropæolum*, which is now a lovely sight. It sets *Eugenia apiculata*, *Clematis* stems, *Lily* stalks, and *Larch* sprays in a blaze. Its rambling, turning, wreathing, dangling masses of fresh green leaves and vivid crimson flowers are delightful. In sun or shade results are equally beautiful; indeed, in one place I saw it planted under a projecting verandah where rain never could touch it, and it was a flame of blossoms. The great and main fact in its culture seems to be its slow establishment: it must have time—often not appearing above ground until the third year after planting.—F. W. B.

**Aristolochias in Flower.**—Several kinds of these singular plants are now in bloom in the various stoves at Kew. One of the most remarkable is *A. tricaudata*, which, as its name implies, has the flowers furnished with three tails, prolongations of the sepals, about 6 in. in length, twisted, and of a chocolate-brown colour. The whole flower both in size, shape, and colour resembles in a striking manner some of the species of *Masdevallia* of the elephantipes type. Another curious but commoner species is *A. trilobata* in flower in the Victoria regia house. It likewise has tailed blossoms of curious shapes and leaves of a three-lobed character. *A. ornithocephala* is finely in flower in the Palm house.

**Plant Mimicry.**—A curious instance of the great resemblance sometimes among plants very widely renowned botanically from each other, is to be found in one of the *Genistas* (*G. ephedroides*), which is so like an *Ephedra*, that if not in flower it is only by close examination that one detects the difference. To a superficial observer both plants appear to be the same, and succeed well under the same conditions.—ALPHA.

**Fruit Crops in Staffordshire.**—Apples and Pears in this locality are a good average crop. Apricots are very thin indeed. Of out-door Peaches we have a good crop, but very few trees outside. Small fruits have been a most abundant crop. Raspberries and Cherries extra good, especially standard Morellos grown in the open ground. I find they do much better and are more prolific than they are against a wall, and give, as a matter of course, no trouble at all as regards training.

Potatoes are a very good crop, very clean and free from disease at present; late varieties are looking well, and promise to be a good crop.—J. WALLIS, *Keble Hall, Newcastle.*

*The Wild Garden: Or our Groves and Gardens made beautiful by the Naturalisation of Hardy Exotic Plants; being one way onwards from the Dark Ages of Flower Gardening, with suggestions for the Regeneration of the Bare Borders of the London Parks.* By W. Robinson. With ninety illustrations, by Alfred Parsons, engraved by Hueton Pannemaker, H. Hyde, and Lacour. THE GARDEN OFFICE, and through all Booksellers. Price, 10s. 6d.



# CITY PARK, NEW ORLEANS.

NEW ORLEANS, the metropolis of the South-Western States of North America, is provided with a beautiful park studded with noble trees, which afford a grateful shade in summer when the temperature ranges between 80° to 90° in the shade, as it often does there. The accompanying engraving shows that the trees present an element of picturesqueness unknown in more northern latitudes, viz., being covered with the little *Tillandsia usneoides*, commonly called the Old Man's Beard or Long Moss from its resemblance to various Lichens that occur in cold climates. Its slender stems are often several feet in length, and hung from the branches in dense masses in swampy localities like that of New Orleans. The pretty effect produced by this

little epiphyte is so good that it ought to be tried in some of the warmer parts of England, such as Devonshire and Cornwall, as it is known to withstand even severe cold. In the matter of providing public parks and gardens in the neighbourhood of populous centres, our friends across the Atlantic are progressing rapidly, for often we hear of new parks being in course of formation. Already they possess finer, or at least nobler, parks than we can boast of in Europe; for example, the Central Park, New York, containing nearly 850 acres, bids fair to be in a few years one of the finest city parks in the world.

W. G.

## DESTRUCTION OF AN OLD AND BEAUTIFUL HONEYSUCKLE.

It happens, rarely enough in America, at least, that any flowering plant is allowed to attain any very great age. And when they do, the circumstances attending such longevity are always fraught with interest. The tendrils of the floral kingdom have not yet become so strongly entwined about the average American heart as is the case in the mother country of gardens and gardeners. Americans are changeable and notional. They see monotony where an Englishman discovers new motives for attachment. A very old plant or shrub is not generally regarded with any peculiar interest here, but rather awakens surprise that it should not have been replaced by a plant of a newer and improved species. And yet there has been a marked improvement here in late years in this respect, and we are hopeful for the future. I have been led to these remarks by the recent ruthless destruction of a grand old flowering Honey-

suckle not far from my home. In the city of Troy, a few miles north of the capital of this State, has been growing for over fifty years a handsome specimen of the American Woodbine or Honeysuckle (*Lonicera*). It is a historic creeper, and was carefully planted by the late George B. Warren, of that city, near a huge north wall of his dwelling, where it has since remained. Like as a mother careth for her only child, did Mr. Warren watch over the growth of this Woodbine, from its first tender shoot to its marvellous maturity and subsequent old age. No vandal hand was permitted to touch this floriferous vine while he lived, and it grew to cover the immense wall completely, having for years past been an object of admiration and wonder to all. Here the majestic climber has clung to the wall for over half a century. A generation has come and gone; fierce winters have swept by; but the breath of



View in the City Park, New Orleans.

vigorous life has continued to thrive through every twig and tendril of this grand old plant. Thousands of the feathered warblers of the air have rested and reared their young within its leafy depths, making rich melody in its branches. Each year its mass of flowers has shed choice fragrance over that portion of the city, and residents of the vicinity have grown to love the old climber. But now the inevitable march of progress comes brushing by the cherished spot, and the grand old twiner must be torn ruthlessly down, root, branch, and tendril. The ground is supposed to be needed for a dwelling house, as if no other place could be found than the few feet occupied by this plant. But Mr. Warren, its old nurse and protector, is gone, and there is none to raise a hand against the rude despoiler. It comes down, and its luxuriant foliage lies withering in the street. An old attendant says, Mr. Warren, if alive, would refuse a thousand dollars for 1 ft. of the soil upon which this Honeysuckle stood. But, unfortunately, the present owners have none of the tender feeling evinced by the noble character of that grand old gardener.

H. HENDRICKS.

Kingston, N. Y.

## ANOTHER MONASTIC GARDEN.

In this lovely season of the year when our English gardens are full of gay flowers where you can but

Wonder at the Lilies white,  
Or praise the deep vermilion of the Rose;

while our fields are "white already to harvest" and our rich cornlands and green pastures are shaded by forest trees clothed in their summer dress of dark green, it is pleasant sometimes to turn from these homelike pictures and to revisit in thought other scenes. Let us, then, for a few moments go back to a fair spot where there are no cornfields or gardens, but where from your windows you look out on a tranquil sea studded with islands, or across a canal to quaint, mediæval palaces, whose varied colours and rich architectural ornaments glow in the southern sunlight, for I am writing of Venice.

Amidst all that interests the traveller in her grand churches, her stately campaniles, mirrored as they are in her quiet waters, the eye seeks in vain some spot of green to rest on. No attempt has as yet been made to plant the small squares, or campos, as they are called though this might easily be done. An air of freshness would thus be given to many mouldering buildings, which would look all the more picturesque for being veiled in green. The flower shops are few and far between. Flowers dear and seldom fresh. The public gardens, small and unimportant, are

little visited. They are given up for the most part, says George Sand, to *Quelques vieillards grognons, quelques fumeurs stupides, et quelques bilieux mélancoliques*. I spent an afternoon there last April with an artist who was sketching the distant domes, which appeared themselves to be painted on a background of glowing sky, and I only saw a boy's school, a few peasants, and three barefooted monks, whose well-worn brown robes were the one bit of colour which relieved the general monotony.

The view from the gardens is lovely, and unequalled in Venice. Across the water, stretching to the right is the line of the buildings of the Guidecca. Towards sunset these seem to take many colours—blue, violet, and lilac; while mingled with them, but rising far above, are the dome of the church of the Redentore and the cupolas of Santa Maria della Salute, with the tall campanile of San Giorgio Maggiore. These are mirrored in the inland sea, while in front the tall masts of many ships at anchor seem to be painted in black. Few of those who stay in Venice omit to visit the Armenian convent on the island of S. Lazaro. Not very distant from the city of trade and pleasure, it is yet so far away that few sounds can



reach that quiet spot. The voyage across is easily accomplished in half an hour. Leaving on the right San Giorgio and the music of its bells, you see on the left the beautiful island of S. Elena, with its deserted monastery. It is a pity to pass it without stopping to wander in its forsaken cloister clothed with Roses and Jessamine, and its garden terrace with the lovely views of S. Pietro and Murano. A little further and the gondola glides into a sort of harbour with landing stairs. It is hardly moored when a "portier" with a gold band round his hat, which gave him a sadly secular air, came forward and helped us to alight. We were shown into a small room full of pictures, while the important functionary enquired in what language we would be pleased to converse with our guide. We replied, French or English. He disappeared, and was soon replaced by an elderly monk in a black cassock, with bright eyes, and long grey beard, and an intelligent face, and who explained that though he knew English, he was not accustomed to converse, and preferred French. It was not exactly "Frenche of Paris," but was sufficiently easy to understand. He was a kind and courteous gentleman, and appeared anxious that we should see everything thoroughly. He showed us the library, the small room in which Byron studied when he spent some months in the monastery, of which he says, "The Society of the Convent of S. Lazaro appears to unite all the advantages of the monastic institution without any of its vices." A good portrait of the poet and one of the late Emperor of the French hang on the wall of the little chamber. Here we were asked to write our names in a book, and were shown another kept exclusively for royal visitors; the latest signature was "Louise." Below stairs we were taken into a large room furnished with printing material from England. Two men were at work; they were printing an English and Armenian grammar. I bought a history of Armenia in English, which is very well written, with no glaring faults of grammar or style. The monks are Roman Catholics, living under the protection of the Sultan. They are all Armenians. Their time is devoted to literature and to the education of youths of their own nation, their pupils being chiefly destined to an ecclesiastical career. Very solemn these looked when we afterwards met them in the garden. There was no appearance of games or amusements of any kind; they were walking quietly, attended by two or three monks. It is probably owing to the Sultan's protection that the brothers are allowed to pursue their course unmoved and unchanged in these changing times. Their establishment on this island dates but from the middle of the last century. When they came they found the remains of a very ancient foundation of a lazaretto, but the lepers and the monks had alike departed; all was a desert.

The Armenians built their monastery and planted a garden. The building is in no way remarkable, neither is the chapel which stands in the middle of a little graveyard, shaded by tall Cypresses and nearly filled with marble crosses. As we were leaving we asked our guide if we might see the garden. This it appears was an unusual request, but it was granted; we went first into a quadrangle surrounded by cloisters. The space is planted with fine trees and arranged in beds. A tall Cedar grows in the middle. The prettiest beds are filled with Cinerarias of many different hues, fine bushy plants; bright-coloured Tulips flaunted in the sun; Mignonette grew luxuriantly; while other flowers yet unopened awaited the summer. Outside the enclosure the ground was chiefly devoted to useful plants. Apples, Apricots, and Plums were in blossom; the vines were carefully trained over trellised arches. There are seventeen different kinds, including some fine Muscats. The wine required for the establishment is made here.

Fine beds of Artichokes, Lettuces, and rows of Peas were ready to gather, for it was at the end of April. The scent of Bean flowers filled the air. French Beans were curiously grown in

patches. At a distance we took them for Potatoes.

A wide band of tall Lilies, about to flower, bordered the garden path, and more patches of Cineraria grew under the windows of the little churchyard.

On the terrace, which overlooked the sea, there was a row of Oleanders, fine bushy shrubs, which, however, had greatly suffered during the last unusually severe winter. These were protected by tall Cypresses. These again showed signs of having felt the cold weather, but they looked well, and gave quite a character to the terrace. At the end of the terrace there is a plot slightly raised, planted with a few Olive trees "seer and small." This is a quiet corner which the monks hold sacred. Here was Byron's favourite seat. From it, across the blue, untroubled water, on which boats with many-coloured sails, red, white, and orange, seem to float lazily, you look towards what he calls—

The fairy city of the heart,  
Rising like water columns from the sea;  
Of joy the sojourn, and of wealth the mart.

N.

## THE GARDEN IN THE HOUSE.

### WINDOW PLANTS.

MANY who are really fond of plants, even if they possess the requisite glass structures wherein to cultivate them, often also like to have them in their dwellings, and those who are similarly fond, but have not such conveniences, make many shifts to gratify their likings. It not unusually happens, however, that through kinds being selected that are unsuited for the particular circumstances of the case, indifferent success is attained. The greater number of flowering plants like a sunny aspect, and thrive badly if this is not given them. Not a few, too, of the number of handsome-leaved plants are equally benefited by having a sunny window. Ferns are often grown in windows, and if there is one more than another that is a universal favourite it is the Maiden-hair (*Adiantum cuneatum*). This does beautifully in a window facing the north: the fronds, although not growing so large as they would in a warmer, more moist atmosphere, will attain a length of over 1 ft., including the stem, and keep as healthy in appearance as they do in an ordinary Fern house, small plants gradually attaining size under such conditions. The common *Pteris cretica* and *P. serrulata*, with most of its crested forms, do equally well, growing up from small seedlings so as to attain a size quite as large as is desirable for window plants. This they will do in rooms where the atmosphere is always dry through the presence of fires and gas; but for Ferns to succeed under these last-named conditions it is requisite that they should be inured to it from the time they are quite small. Plants grown up tenderly in a moist warm atmosphere would very soon look sickly if so located, and if success is looked for they must never be allowed to want for water. If the leaves flag through drought they will turn more or less brown, and the plants will not again assume their wonted appearance until fresh growth is made. I may here mention that in rooms where fires are much or regularly used the growth will not be so close and the general appearance of the plants not so good as where they are absent. As a matter of course, the plants must be taken out of the windows during severe frost. *Nephrolepis exaltata*, *Davallia canariensis* (the Hare's-foot Fern), and the plain-leaved forms of *Scolopendrium* (Hart's, tongue Fern) also do well in a window, making like those mentioned before not only growth that gives evidence of their ability to exist under adverse conditions, but where properly attended to they thrive in a way that makes them handsome objects for room decoration. One thing not to be lost sight of in managing these Ferns when thus grown is that the windows should never be opened so much at bottom as to expose them to a keen draught. This they will not long stand without showing their resentment in the shape of brown fronds and a generally unsightly appear-

ance. For a room where there is a regular fire or only as much as is requisite to keep it aired in winter and during damp weather, *Dracæna congesta* and *D. lineata* are both elegant-growing plants, and bear such treatment well, thriving, if their wants as to pot-room and moisture are attended to, almost as well as if kept in an ordinary greenhouse. A. Z.

### PLANTS FOR ROOM DECORATION.

I KNOW of no grander or more cheerful-looking objects for this purpose than many of the Palms, which are so tenacious of life that there is no fear of losing them, and nothing is finer or more suitable for forming the centre of a group. Many have an idea that to grow a Palm great space is required, which is the case as regards some of the species; but there are others that may be confined to a small size for years, without in any way looking starved or losing their beauty. One of the most elegant for a warm room is *Areca lutescens*, which has handsome polished yellow stems, that show up in pleasing contrast with the light green of the fronds. *Chamærops Fortunei* is likewise a very desirable kind, much hardier than the one just named, and quite of a different habit, the fronds being fan-shaped and prettily divided. *Seaforthia elegans* is a noble-looking Palm, but a little too large for windows. *Rhapis flabelliformis* is quite a minute kind, that forms a very pretty ornament, and comes in handy for table decoration. Besides these there are *Latania borbonica*, *Areca sapida* and *Baueri*, *Phoenix reclinata* and *syvestris*, any of which, got in a small state, may be kept in 6-in. or 8-in. pots for years. To associate with the Palms, *Aspidistra lurida* is one of the most serviceable things that can be had, as it is always in good condition, bids defiance to dust, and will endure the bad fumes of gas, and the vitiated air arising therefrom. It is about the only plant that looks at all healthy in the Westminster Aquarium, and I have seen it in windows in the smoky streets of London flourishing where scarcely anything else of the kind would live. Being as near hardy as possible, it is indifferent to draughts and cold air; all it wants is plenty of water during the summer, and its leaves sponged occasionally to give them a clean appearance and open their pores. *Dracænas*, unfortunately, are too tender for winter, except in very warm rooms; but all through the summer months and far into the autumn there are few things that can rival them. Another ornamental-foliaged plant not seen nearly so frequently as its merits deserve is the *Coprosma Baueriana*, which has remarkably handsome foliage about the size and shape of that of the smooth-leaved Holly, and quite half the surface is of a rich yellow or golden colour, and so bright, as to present the appearance of having been polished. Like many others, and more particularly the two plants already named, it stands the atmosphere of a dwelling without suffering, and with care may even be grown to perfection therein. There is one point in the cultivation of this *Coprosma* worth remarking, which is that peat soil, given it to grow in, brings out its variegation best. I would strongly recommend the *Imantophyllum miniatum* to anyone who has space for it to develop itself properly, for, in addition to its highly ornamental dark green foliage, it sends up large heads of magnificent Lily-like flowers, about the size of those of the well-known *Vallota purpurea*. Besides these good qualities, it has the additional merit of being able to endure rough treatment, and withstands being kept dry or wet better than most other plants; but, for all that, it is a moisture-loving subject, and only flourishes really well when given plenty of water after active growth commences. For forming the centre of a group there is nothing to surpass *Grevillea robusta* or *Acacia lophantha*, both of which have remarkably handsome foliage, almost as much divided and as elegant and graceful as that of most Ferns. Both of these may be raised from seed sown in heat in spring, and, by growing them on, will be quite large enough to make use of by



July or August, and if plunged out-of-doors for the summer, can be lifted, and will then be grand for the winter. To have a display of flowering subjects, the best way is to grow many of the things in the open, as Fuchsias and Zonal Pelargoniums, for instance, both of which, after the end of May, do quite as well, and flower more freely than when kept under glass. The former propagated early are just the thing for windows, and autumn-struck cuttings of the latter are equally serviceable. Fuchsias, however, must when stood out, have a shaded position, as otherwise the growth is too hard and woody; but the Pelargoniums, on the other hand, cannot well have too much sun, as the tendency of these is just the other way, and the point with them therefore is to consolidate the shoots, which induces free bloom. Among flowering plants that may be raised from seed, I would specially mention the *Mimulus* as particularly deserving, for since it has been so greatly improved by hybridising, the blooms are at least double the size of the old-fashioned kinds, and beautifully marked and blotched with the richest of colours. Being fond of shade and moisture, they just suit windows, as does also their trailing habit, which fits them either for suspending in light wire baskets or for drooping stands, over in either of which positions they have a very graceful appearance. S. D.

#### GARDEN USES OF THE BAROMETER.

THE proverbial fickleness of our climate has been fully maintained this year, for from extremes of cold we have gone to temperatures seldom attained in what are called temperate regions, and after a succession of cold wet seasons we have had such a slight rainfall that seeds put into the ground in spring have never germinated. The Turnip crop in fields is here and there a failure, for when there was moisture enough to germinate the seeds, the young plants fell a prey to the fly, and in gardens they can only be kept alive by the incessant use of the watering-pot. Under these circumstances we watch the barometer with more than ordinary interest, and never in my experience have I found a surer guide than the barometer has proved this year, for it is a common saying that we get as abundant signs of rain during a protracted drought as we do in moist dripping seasons, with this difference that in the former the clouds merely tantalise us, while in the latter every little cloud showers down its overcharged load. It is, therefore, of great assistance to any one engaged in gardening to have a barometer to determine the course to be pursued. During the past few months the artificial application of moisture has been a necessity, not merely to bring the productions of the garden to anything like perfection, but in many instances to keep them from perishing. In many instances this season when we have had indications of rain the barometer has been found "set fair." Therefore we have had to push on the artificial application of water, when if we had no barometer to refer to we should have put the water barrels and pots away in hope that they might be safely dispensed with. Not only, too, is such a warning useful in cases of drought, it is equally so in the case of excessively moist seasons, when the bright sunny intervals are especially deceptive, and in spring when seed sowing necessitates much treading on the soil, one may catch a favourable time for getting in any given crop which we would have lost unless guided by the warnings of the barometer. Even in gathering fruits for preserving in seasons when the weather is moist, one of these little cottage barometers will well repay its cost. Every owner of a garden who provides thermometers for indicating the temperature of the hot-houses will find money well expended in buying a barometer for the gardener's cottage; it is even more indispensable than a thermometer, which, however useful as a guide for young practitioners in keeping any structure at a given temperature, has long since lost its charm for gardeners generally, who have with great advantage to all concerned given up high night temperatures. J. GROOM.

#### A HOLIDAY RAMBLE IN DEVON.

IN order to form a correct estimate of the gardening of any given district, one's visits should not be confined to one or two large places, but should include peeps into all gardens of a representative character, whether large or small. In the neighbourhood of Exeter I was several days among the gardens and nurseries, and there are but few towns of a like size that have so much of good gardening in their suburbs. Only a few minutes' walk from the principal railway station is Streatham House, the beautiful residence of Mrs. West. A plateau, several acres in extent, has been scarped out of the south side of a steep hill. On this level surface the residence, a commodious one, has been built, with a handsome conservatory on the terrace, in front groups of flower beds are on the Grass contiguous to the house, and then the ground descends by a series of terraces and steep Grass slopes till it is lost in the natural fall of the surface. The same treatment has been applied to the ground in the rear of the mansion, for the kitchen garden is laid out in terraces in order to break the abruptness of the incline. The views from the high ground above the house are very fine, extending as they do for many miles. Southward the open country is outspread—a grand panorama, every hedge and tree being visible. To the west are the extensive wooded hills of Powderham, with their summits far above the surrounding country, with the Belvedere tower rising out of their midst like a landmark, overtopping the highest trees. One of the noticeable features about Streatham is the substantial manner in which everything has been constructed, and no doubt this is the best and cheapest plan to adopt in the long-run. About the grounds are many handsome young Conifers, but the place being comparatively new, there are no large specimens. I, however, noticed in front of the house the handsomest pair of *Retinospora squarrosa* I have yet seen. They were about 8 ft. high, and 20 ft. in circumference, and perfect in outline. There were also two Golden Yews, one on each side of the entrance to the conservatory, that it would be difficult to match for size and symmetry. The arboretum extends over the crown of the hill westwards. The dotting system of planting has been adopted, which may be very well so far as the trees are concerned, but it is an ineffective way of planting. It is far better to draw the trees nearer together in some instances and open them out in others, to show more of the green turf. Down on the lower ground to the left is a small artificial pond furnished with goldfish and water Lilies backed up with Rhododendrons, and then a wide expanse of lawn runs down to the drive. Forcing and other houses are numerous and well furnished with plants and fruits. Ferns and stove plants are well grown here. Many of the plants equal any of those one sees at the London shows.

THE FERNERY is a very prettily arranged span-roofed structure, with a path down the centre, and the rockwork, in which the plants are growing most luxuriantly, built up on each side. At the back has been run a perforated pipe, and by turning a tap a shower of water can be distributed all over the Fern beds. I noticed very fine specimens of the following, among others, planted out among the stones, viz., *Adiantum gracillimum*, *A. trapeziforme*, *A. concinnum*, *A. tinctum*, *A. scutum*, *A. farleyense*, *A. macrophyllum*, *Asplenium Veitchii*, *A. foniculatum*, *A. ciutarium*, *Cheilanthes elegans*, and *Pteris tricolor*. At the end of the house was a fine plant of *Platycerium grande* suspended against the wall. A dressy appearance was given to the Fern mounds by the free use of such plants as *Panicum variegatum*, *Tradescantia vittata*, and Club Mosses. Terra-cotta brackets supported *Platyceriums*, Mosses, *Panicums*, *Pteris*, &c. On grand party nights, or for decorating a ball-room, such brackets would look well on the walls. The principal stove is a large structure, and contains a valuable collection of plants—Palms and similar plants, but there are also some good specimens of *Allamandas* and *Dipladenias*. In this house was a

large *Cycas revoluta* in flower, or rather perhaps in fruit. It commenced to open its flowers about three months ago, I was informed. In addition to the Fernery proper, there are numbers of fine specimens of Ferns in pots, including Tree Ferns, in other houses, a specimen of *Goniophlebium subauriculatum* having fronds 12 ft. long, and other species exhibiting proportionate development. In one house a dense carpet of *Adiantums*, chiefly *cuneatum*, the most useful of all for cutting, was growing under the stage with the roots in the border.

THE EARLY PEACH HOUSE is large and roomy, and the trees in fine condition. The arrangement of the trellis, though a departure from the common plan adopted of training the trees near the glass, is really very old, and always answers well. The front trellis is low and circular, the trees on the back wall being thus unshaded, and, therefore, all the fruits are finely coloured. I noticed a fine crop of Tomatoes in a small house near. The gardener, Mr. Franklin, prefers an old red kind—in appearance like the Orangefield—to the latest importations from America, and trains to a single stem, all surplus growth being pinched away. Tomatoes under glass should have their roots restricted in some way in order to induce early fertility. Growing them in pots would answer the purpose. Pines are well done here, two houses being devoted to their culture. Many excellent fruits in various stages of growth were coming on.

THE KITCHEN GARDEN, though situated on the side of a steep hill and very much exposed to the strong winds, produces excellent crops of vegetables and hardy fruits, such as Apples, Pears, Cherries, &c. But I was much surprised to find that Peaches required as much protection in the open air in Devon as in less favoured counties. At Streatham House the walls had been covered with glass in a most substantial manner. The Peaches were doing well, but Plums have hitherto failed, owing, I believe, to insufficient ventilation, due to faulty construction of the house. The wood the trees were making was strong and the foliage healthy, yet there was no fruit, though Cherries in the same situation were a full crop. In forming the terraces much earth had to be moved, and some of the trunks of the trees in the low grounds are buried as much as 18 ft., but walls have been built round the trees to keep the earth off them and to allow air to constantly circulate around them.

MR. BAKER'S ROSES.—Heavitree is a small suburb of Exeter, a mile or so out of the town. I found Mr. Baker at home, and he very courteously conducted me over his Rosery, which contains about 8000 plants, all dwarfs on the Manetti. The Rosery has a south-west aspect, is oblong in shape, and sheltered by trees. It appeared to have been originally a long narrow field before it was broken up for Roses. The soil is a rather heavy red loam resting on red sandstone, very suitable for Roses or any other crop. The Roses are planted in rows like nursery rows, across the ground, and there is nothing in the shape of fancy gardening, but everything is managed in a business kind of way, Mr. Baker being a business man. Unfortunately, I was too late for the principal show of Roses, as the first bloom was over when I called—about the middle of July; but the plants were making fine growths, and it is from these strong mid-summer shoots that the finest flowers will be cut next year. Many of Mr. Baker's plants are eight years old, yet there is no lack of vigour or substance in either the wood, foliage, or flowers; indeed, if the two former are strong and robust, the flowers will be of fine quality. It is commonly believed that the best flowers are cut from maiden plants, but this is not the case on good land, where the old plants can push up shoots 4 ft. or 5 ft. long, as is the case at Heavitree. These robust shoots being pruned hard back are sure to push a few good blooms. Of course, all weakly wood is cut away. Of late years a good deal has been said about the seedling Brier, but no stock has, in my opinion, done so much for the Rose as the Manetti, and if budded



low and planted deep enough to bury the junction between scion and stock, the plants soon become established on their own roots. E. HOBDAY.

## THE FLOWER GARDEN.

### PRIMULA CAPITATA.

I WILL gladly tell Mr. Burbidge and the public all I know about the treatment of this rather difficult subject, and I hope others will add a record of their experience. I first made the acquaintance of this Primrose in the spring of last year. Two plants put out on a limestone rockery commenced flowering in June and continued to flower till October. About the end of July I saw signs of ripe seed, which I at once sowed, as I do alpine, half filling a shallow pan with broken limestone, and adding fine soil. In a week the seed came up like Mustard and Cress, as Primrose seed generally does if sown as soon as ripe. The seedlings grew slowly at first, and could not be handled till November, when I gave many away, and pricked off others in shallow pans. Some were kept in the greenhouse, and others in frames from which frost was excluded, others in cold frames, well covered up in severe weather. Not a single plant perished. In April some were large enough to plant out, and I have planted them in all positions and soils, keeping some in pots in the greenhouse; these latter have been almost destroyed by red spider. Those planted out began to flower about the end of June; they do best in an open situation with a north aspect, but if well watered stand the full sun fairly. I have 200 or 300 plants growing and flowering, some of them already showing two or three crowns, and as I can afford to make experiments, I will report again in the spring. I should add that the old plants left out on my rockery last winter were ambitious of being evergreen, and succeeded in carrying a green tuft of leaves through the hard frost, but the crown rotted off at the neck at the end of winter, and they were hopelessly gone. At Mr. Whittaker's nursery, Ferriby Brook, near Derby, I saw some plants in April which had been out on a flat border all winter. From what I have said, it appears that a biennial treatment succeeds pretty well, but the plants come too late into flower. I saved some seed and sowed it in early spring, and this came up pretty well, but not so thickly as what was sown as soon as ripe. I believe, however, that these spring-sown plants wintered in cold frames will flower from May next year, and prove more successful than those sown in July. C. WOLLEY DOD.

Edge Hall, Malpas.

**China Asters.**—Although quilled Asters find fewer admirers than the flat-petalled kinds, because they have a somewhat stiff look, yet a good collection affords many pleasing features, not the least of which are their stiff erect habit of growth and exceeding floriferousness. To produce a showy mass of bloom they should be grown mixed, but some regard should be paid to the height of the respective kinds at planting time. The average height varies from 15 in. to 20 in., and the shorter ones are necessarily best suited for the outside rows. When grown in a mass the stiff form of the flower is much less noticeable than when shown at exhibitions. The colours are not only clearly defined, but come true, and this is as correct of the edged kinds as of the self flowers. There are white, French white, salmon, pink, red and white centre, blue, dark blue, blue with white centre, mottled blue and red, and other colours; and yet it is a remarkable fact that though all these may be grown side by side, they come as true from the seed saved as if they had been miles from each other. These Asters would appear at least to offer some exception to the rule generally held that insects are the chief agents in the fertilisation of flowers, for were it so in this case, it is

evident that all kinds of colours would follow from the inter-crossing. We must therefore take it for granted that not only is the quilled Aster self-fertilising, but that it does so freely, as it is an abundant seeder. If others find different results, then their experience must indeed largely differ from mine. It is worthy of remark that although the season has been so hot and dry, our Asters have never looked better than now; not a trace of blight or curl is visible, and though not grown to produce show flowers, yet I think they will presently be exceptionally good. The Aster needs little special care in cultivation; I sow under glass without heat, and when the plants are strong, dibble them out in rows in the open ground.—A. D.

**The Edelweiss** (*Leontopodium alpinum*).—This hoary alpine plant, which grows from 4 ft. to 8 ft. high on the Alps of Central Europe, has long been cultivated in gardens. Though its culture is easy, a good deal of mystery surrounds



The Edelweiss (*Leontopodium alpinum*).

the plant and its flowering, as if that were rare. Anyone, however, who knows anything of the hardy plant collections in the country, past and present, knows that its culture is not difficult in any way on sandy soils even as a border plant, and that it flowers annually. It is well worthy of culture, as the dense star-like heads of leaves surrounding the small yellow inconspicuous flowers are clothed with a dense white woolly substance which renders it distinct and striking even at a distance. In order to keep a good stock of flowering plants, the old ones should be divided annually or the young ones raised from seeds, which in some seasons ripen plentifully. It succeeds well either in the rock garden on exposed spots or in an ordinary border. The annexed woodcut shows a flowering spray of the plant sent by Mr. E. Jackson, Llandegai, North Wales.—W. G.

**Sea-side Plants.**—Would some of your readers kindly give me the names of a few real good hardy herbaceous flowering plants, suitable for a rich border facing south, but a good deal exposed to the sea breeze? I grow Pansies, Violas, Potentillas, Pyrethrums (double, all good), Lilies, Scabious, Snapdragons, Dahlias, Hydrangeas, Polyanthus, Primroses, Anemones, Squills, Lily of the Valley, Mimulus, Gladiolus, Rudbeckia, Pentste-

mons, Spireas, Iris, and bulbs of all sorts, which do very well, but I want a few more good plants.—ALPHA.

### GARDENING ON THE GRASS.

*CHAMEROPS FORTUNEI* forms a beautiful specimen on the Grass, and has withstood the late severe winters entirely unprotected; one or two other varieties of the Palm tribe are also well adapted for plunging out-of-doors in summer. *Aralia Sieboldi* has beautiful foliage, and looks well either as a bush or a dwarf standard. *Bocconia cordata* is a grand subject for forming groups or masses on the Grass, and when once planted it springs up more vigorously year after year as it gets established. It combines all the good qualities of a flowering and fine-foliaged plant, the leaves being extremely handsome, and the towering spikes of Spiraea-like flowers of a pale straw colour are most beautiful and graceful, coming in at this time when flowering trees and shrubs are beginning to get scarce. Being deciduous, it should be replanted when in a dormant state, and is readily increased by root suckers or underground stems. *Acanthus latifolius* and *A. mollis* are both useful plants, with deep-coloured evergreen foliage. They are well adapted for permanent planting on the Grass, and, being dwarfer than the preceding, look well as foreground plants in isolated groups. They are readily increased by division, or by seed sown in heat in spring. Fuchsias of various sorts look extremely well planted permanently on the Grass, the old single varieties, such as *Riccartoni*, *gracilis*, and *globosa*, being especially beautiful when treated as herbaceous plants. The old wood should be cut down to the ground at the winter pruning, and in spring beautiful masses of young shoots, covered with flowers from base to summit, shoot up from the root. Yuccas are a host in themselves, for they combine elegant evergreen foliage with majestic flower-spikes. We have large plants of them on the Grass in hot positions on the south front of terrace walks, at present producing some hundreds of flowers on large branched spikes, several feet in length. They flower freely after they attain considerable age, and form large many-crowned heads. *Y. gloriosa* and *Y. recurva* look well in groups on the Grass, with the smaller kinds such as *Y. filamentosa* planted around them. Irises with their fine permanent foliage and showy flowers look well springing direct from the turf, and the flowers are really charming for cutting, rivalling Orchids in brilliancy and quaintness of form. The Pampas Grass and its allies, the *Arundo Donax* and *A. conspicua*, look far better with their foliage resting on the turf than in beds of dug earth. The Bamboos also look quite at home in a cool spot springing from verdant Grass near water. Innumerable plants of questionable hardiness may also be plunged out in summer, such as *Hedychium*, *Brugmansias*, *Agapanthus*, &c. These may be mingled with groups of hardy plants, to give when needed variety or colour, but in all cases the effect of springing direct from the Grass will be found a decided improvement on that of plant growing in formal shaped beds.

J. G.

### PLEA IN FAVOUR OF THE FLORIST'S ART.

WHEN, oh when, will people leave off talking about what they do not understand? Ever since the Carnation and Picotee show was held at South Kensington, the gardening periodicals have been full of "cussings" about the practice of dressing flowers for show. On that occasion, I was standing near two ladies talking about the show. The first, a blonde, whose masses of light, auburn hair were thrown up in contrast with a dark, grey "Madonna" hat, remarked, "What a pity it is they put these horrid papers behind the flowers; they would look much nicer without anything at all;" and the other, who was dressed with that beautiful taste and refinement of art which South Kensington knows so well how to produce, answered, "Yes, and they pull them about with tweezers,



and cut out some petals, and arrange them so much that they are not a bit like what they are on the plant; I call it cheating." I must confess I felt inclined to say to them, "Ah, mademoiselles, put yourselves for one moment in the place of these flowers. You did not grow with the sunny aureole of your hair thrown up, and beautified a hundredfold by the contrasting sombreness of that hat, and confess that, without it, the charm would be charming still, but how much less so than at present? And you, mademoiselle, how iniquitous, how dishonest it is to arrange your hair in that ravishing coiffure—it did not grow so. Why do you brush and comb that wealth of gilded bronze in the morning? that is not Nature; why do you cut off any unsightly projection that mars the symmetry of those almond nails? it is surely not honest. Do give yourself a chance of appearing as Nature made you, instead of the subdued tints of the drapery, which sets off every graceful curve and hides every kind of angularity. Let your tresses, which would naturally wander all over your form till they swept the ground, do so unconfin'd, and then, and not till then, we will show our gems tied three or four in a bunch in a tumbler of water, the largest petals mixed with the smallest in the centre, or on one side of the flower the strap run, and finger petals left in—in fact, as Nature made them, beautiful, with a wild beauty, which only tantalises the eye with what might be, if made the most of by the solicitous florist."

GIROFLE.

[The true objection to the florist flower is that, from an artistic and natural point of view, it is ugly, far inferior in form, in light, and shade to many a flower untouched, as, for example, to a good Clove Carnation. This is not a question of taste, but one agreed upon by all who study form—artists, and by many others who sympathise with art and Nature. We have no desire to see the number of florists reduced by one, but they are not doing justice to the flowers they profess to love by not showing them in other ways than one, and that a way which does not seem to have special claims for the educated, the artist, or the general public. If "Girofle" means to say that the products of the milliner and barber are better than the human form *per se*, we can understand his notions as to "dressed flowers."—Ed.]

#### THE CULTIVATED ONOSMAS.

THE genus *Onosma*, belonging to the Borage family, numbers about fifty species, biennial and perennial, natives of South Europe, Western and Central Asia. Out of this large number there is only about ten hardy kinds that have found their way into cultivation, and now there are only two grown in this country. These are *O. tauricum* and *O. echioides*, the former having been introduced about the beginning of the present century, but the other has been in cultivation for nearly two hundred years. These two kinds much resemble each other, but *O. tauricum* is decidedly the finest, and should be grown in preference to *O. echioides*, or any of the others.

*O. TAURICUM*.—According to Boissier, the botanist who has lately "worked up" the flora of the Orient, *O. tauricum* is correctly *O. stellulatum* var. *angustifolium*, a narrow-leaved variety of a plant that was once in cultivation, and of which there is also a white-flowered variety and another called *erectum*, a dwarf-growing sort which Herr Max Leichtlin has or had in his collection under the name of *O. montanum*.

There is no doubt that this Taurian plant is among the finest of all the *Onosmas*, for none possess flowers of such a lovely citron-yellow colour. The accompanying woodcut well represents a life-sized flowering shoot with its gracefully drooping blossoms. It has been appropriately named "Golden Drop," and is an evergreen perennial growing from 6 in. to 12 in. high, and forming a dense tuft of stems in a comparatively short period. It is a native of the mountains of Greece, Tauria, and Transcaucasia.



Golden Drop (*Onosma tauricum*).

The specimen from which the annexed illustration was prepared was sent by Mr. E. Jackson, Llandegai, who grows it well.

*O. ECHIOIDES*.—One of the principal characters which distinguish this species from the Taurian kind is its being a biennial; hence it is of less value for the garden, and this circumstance no doubt accounts for the fact that it is so seldom seen. The plant is similar in habit of growth to the preceding, but the flowers are pale yellow and not nearly so attractive. It is a native of gravelly, dry places in the south of Europe and neighbouring countries.

The other species that have been introduced to cultivation are *O. simplicissimum* and *O. orientale*, both cultivated by Miller in the middle of the last century. *O. stellulatum*, *montanum*, *divaricatum*, *rupestre*, *sericeum*, *trinerivium*, and *O. megalospermum*; the last in Herr Max Leichtlin's collection at Baden-Baden.

**CULTURE AND POSITION.**—The best place for growing the Golden Drop well is no doubt a properly constructed rock garden thoroughly drained, in which provision is made for a good depth of

soil, so that the plants may root strongly between the blocks of stone. The finest plant we have seen of *O. tauricum* is in Mr. Whitehead's rock garden at Southwood, Bickley. The plant has grown into a mass 1 ft. or more across, and about the same in height, and in early summer it is completely laden with bright golden and deliciously almond-scented blossoms. The soil is a good sandy loam, mixed with broken grit; the plant is placed between large blocks of stone, near which the roots ramify, and are kept cool and moist. It was not injured by the severity of the past winters, but elsewhere plants in an ordinary border were almost killed. It may be propagated by seeds or cuttings. *O. echioides* requires similar treatment to the preceding, except that your plants of it must be raised every year, and planted out in the rock garden to flower. It seeds freely enough in favourable seasons.

W. G.

#### THE GARDEN PINK.

IN making a few remarks on the value of the Pink as an easily grown hardy flower for the herbaceous border, or as a pot plant for forcing early in the year, there is no need to go into its history, nor to say much about it in reference to its being one of the pets of the old-fashioned florists. I think the late Mr. John Keynes told me that in his young days there used to be six Pink shows at Salisbury in a year. I believe, too, that Mr. Keynes, when a boy, pledged his watch in order to obtain sufficient money to purchase his first collection of Pinks. The name of the Rev. George Jeans has been brought very prominently before the public during the last few years in the various controversies that have taken place on florists' flowers. About 25 years ago he wrote some useful papers on the "Philosophy of Florists' Flowers," of which the Pink was, I think, his favourite—at least, it was preferred to the Carnation. The Pink has not yet been discarded as a florist's flower for exhibition purposes. There are numerous growers of laced Pinks in the north of England, and they lately exhibited some beautiful flowers at Newcastle-upon-Tyne. Nine exhibitors competed for two sets of prizes. The stands made a good display and added materially to the success of the show of cut flowers. They were arranged the same as Carnations and Picotees, on white cards, a method of exhibiting them which will always obtain, until some one is able to come forward and point out a better way.

**Culture.**—The old-fashioned laced Pinks should be in every garden; they are easily propagated and easily grown. I find it more difficult to get the "pipings" or cuttings to strike root in the south of England than I did in the south of Scotland. In the north I had no frames, hand-lights, or bell-glasses, and had to manage without them. Our plan was to choose a rainy day, as the pipings always did best when put in during a wet, dull period, and a place was chosen for them where they were shaded during the hottest part of the day, and, thus managed, I obtained ninety plants for every hundred put in. In the south of England I have been very successful with them by placing them in a gentle hot bed. When rooted, the young plants must be pricked out into store beds in the open air, where they soon form compact healthy plants, to be again planted out where they are to bloom in October. Fine blooming plants may also readily be obtained from seeds. These should be saved from the best laced flowers, and they can be easily obtained in warm favourable seasons like the present. The pods should be picked when they open a little at the top; if they remain on the plants a day or two after that the seeds fall out and are wasted. The seeds keep best in the pots in a dry place, but out of the reach of mice, which are very partial to them. Sow in April to flower the second season after sowing; the seeds will vegetate best if sown in pots and placed in a frame, but the Pink is truly an open-air plant and may be raised both from slips and seeds without the aid of glass at all. The florists' Pinks have all got red,



rose, or purple lacing on a white ground. The early-flowering or forcing Pinks are valuable either for flowering out-of-doors or for forcing early in the season in pots. They are quite distinct in character from the others, and all of them are pretty as well as sweetly scented. Lady Blanche has pure white flowers which are produced in great abundance even on young plants; the edges of the petals are smooth. There is another pure white variety not quite so double, but the petals are prettily fringed; it is common in cottage gardens. Mrs. Moore and Mrs. Pettifer are dwarf-growing varieties with white flowers and dark centres. Another valuable type comprises the varieties with rosy or reddish purple grounds, with a darker marking or lacing about the centres of the petals. Derby Day, Lord Lyons, Newmarket, and the old Anne Boleyn are the most distinct of this class.

**Propagation.**—I generally propagate this section about the end of April or early in May. The very small side slips are the best; they form roots much more readily than the stout, pithy growths. These are propagated early because it is best to have good large plants for forcing, and so early in the year they must be put in in a little bottom-heat if it can be afforded; if not, I would not put in the cuttings until quite the end of May. The early propagated plants are now very large, and in two or three weeks they may be lifted and potted in rich compost. The plants should then be placed in a close frame until they are well established, when air should be freely admitted to them. The plants that are to flower in the open ground should be planted out any time during the month of September or early in October. They like deep rich soil, but will flower well in the poorest; the only difference is that the flowers will be much larger and fuller when they are liberally treated. J. DOUGLAS.

#### NOTES FROM EDINBURGH.

A BED of the brilliant blue *Gentiana gelida* now in full blossom in the Edinburgh Botanic Garden shows how true it is, as has often been pointed out in THE GARDEN, that to see the true character of many flowers they should be planted in a mass. This especially applies also to *Senecio speciosus*, with its soft grey stems, and bright mauve flowers. It is quite a different plant in a mass, as it is here, from what it is when grown singly. Except the *Gentians*, there are few better blue flowers for the rock garden than the different kinds of *Cyananthus* from the Himalayas. *C. lobatus* and *C. linifolius* are now in blossom; the latter Mr. Lindsay considers to be probably merely a variety of the former, seedlings of which differ much in shade. *C. incanus* is a small leaved, compact kind, with smaller flowers than the two others. Seedlings of *Androsace brigantica* and of *A. carnea eximia* are far more vigorous than the old plants. This Mr. Lindsay finds to be the case with all *Androsaces*, and also with the *Soldanelas*; seedlings of the latter also flower much more freely. This seems to be the true way of keeping up the stock of many alpine plants, especially such as are apt to die out when old plants only are depended on. But it is a good general rule that all such seed should be sown as soon as ripe. *Saxifraga cochleata* (belonging to the Bucklandi section) grown here is quite different from *S. cochlearis*, which belongs to the rosularis type. *Dianthus Atkinsoni* is a good hybrid, with deep red flowers. *Brodiaea multiflora*, now in flower, is much finer than *Triteilia Murrayana*, which it much resembles. *Gentiana Wallichii* and *Chamæbatia foliolosa* are good rock plants; the latter has a finely cut leaf and small *Potentilla*-like white flowers. *Astrantia carniolica* has rather pretty pink blossoms, and amongst tall alpine plants, *Meconopsis Wallichii*, full 5 ft. high, is still in flower; the peculiar shade of blue of its blossoms would alone make it well worth growing, even if it had not such good foliage. *Oxalis elegans*, grown here under glass, has deep pink flowers with a dark eye. *O. lasiandra*, with pink and white

flowers and large leaves, is perfectly hardy in a border outside the hothouses, as is also *Dahlia glabrata*. A quaint little pink *Spiraea* from Japan a few inches high seems to be amongst *Spiræas* what the Fairy Rose is, as to size, amongst *Roses*. It is a contrast to the very large white plumes of the *Spiraea*-like *Astilbe rivularis*, a beautiful plant for either shrubbery or wild garden.

C. M. OWEN.

The alpine Pinks have been very pretty in my garden this year. I have many species, and I send you a hasty sketch of four which are in blossom at present; they are *Dianthus longicaulis*, pink; superbus, white; *caucasicus*, pink; and *dentatus*, deep purple, with a chequered eye. *Longicaulis* is not very common, I fancy, and is very distinct, having reflexed petals. Our garden has suffered terribly from the long drought, but it has been a little refreshed by the rain the other day.—K. J. D.

**Nymphæa flava.**—I can assure Mr. Miles that this is (in Kent at any rate) a hardy perennial. In July, 1880, I planted it in a pond in about 2 ft. of water. It grew freely, and produced four flowers. The leaves continued green till killed by the frost, but the seed did not ripen. It is now in full growth, and will probably flower in a few weeks. In the same pond *Thalia dealbata* has withstood the rigour of the last four winters, and is now showing for flower.—J. H. J., *Goddard's Green*.

**Campanula pelvæformis** (Hort. Frœbl.).—Allow me to inform "A. S." that he is mistaken in his belief that this pretty *Campanula* comes true from seed, as I am informed by Herr Frœbel, its raiser, that it does not do so, but must be increased by suckers or division of the tufts in the autumn. I may add that I submitted bloom specimens of this *Campanula* to Mr. Baker, of Kew, for his opinion thereabout, when he said he believed it to be the true *C. turbinata*, and only a variety of *C. carpatica*.—W. E. G.

**Sida vitifolia.**—Mr. Thomas Williams, who enquires about the shrub I grow under this name, will find an excellent portrait of it in vol. lxxii. of the *Botanical Magazine*, tab. 4227. In the letterpress attached to this plate *Abutilon vitifolium* is given as a synonym, and reference made to the *Botanical Register*, vol. xxx., tab. 57. My plant is doubtless a true *Abutilon*, and the plant figured in these works as *A. vitifolium*; it has ripened seed, and the pod is of exactly similar shape to that of *A. igneum* or *insigne* and *A. Darwini*. I hope the seed will come up, as it is the produce of a very beautiful hardy shrub, and one difficult to increase by means of cuttings. *Sida malvæflora* is a herbaceous plant with pinkish flowers, and is figured in the *Botanical Register*, vol. xii., tab. 1036.—W. E. G.

**Mallows.**—These are now extremely beautiful, the colours being most brilliant and varied, ranging from the purest white through all the shades of rose to deep crimson. I saw some masses of them a few days ago, which presented a charming appearance. The seeds were sown in April in the open ground, and, with the exception of thinning out and keeping them free from weeds, no further attention was required. The flowers are large and the markings delicate and distinct. In a cut state these *Mallows* continue in excellent condition at least a week. Altogether they are very desirable for massing in herbaceous borders, being impartial as to soil and situation provided the aspect is fairly exposed to the sun's rays.—C. DENNIS.

**Double Rose Campion.**—To-day I was admiring the pure *Masdevallia-Lindeni*-like colouring of the flowers of *Agrostemma coronaria* in our old garden, and bethought me to turn up the figure of it—the 24th plate of Curtis' "Botanical Magazine," Vol. I. The form figured is the ordinary magenta coloured one. Miller says, "The Single Rose Campion has been long an inhabitant of English gardens, where by

its seeds being scattered it has become a kind of weed. There are three varieties of this plant, one with deep red, another with flesh coloured, and a third with white flowers; but these are of small esteem, for the Double Rose Campion being a finer flower, has turned the others out of most fine gardens." Being myself very anxious to obtain the finer flower which has "turned the others out of fine gardens," and not seeing it offered in any catalogue now near me, I make an inquiry for it in this way. Here we have the white, red, and blush varieties, also a white variety with a rosy centre, which, according to Linnaeus, is the type of the species.—F. W. B.

**Bouvardias in Summer.**—*Bouvardias* are so universally known as winter flowering plants, that it appears somewhat out of season to see their beautiful blossoms in summer, yet if planted out the same time as the bedding plants they will grow and flower till frost sets in, and for cutting purposes are very desirable; for if a truss is cut off the buds below it then latent break and again produce flowers, so that a continual succession of them is kept up, and during the season a large quantity is obtained from but few plants.—H. P.

**The Scarlet Clematis** (*C. coccinea*).—I have found this *Clematis* to be readily propagated by means of cuttings taken from the young growth when quite soft. They should be inserted in pots of sandy soil well drained, and after being thoroughly watered placed in a close case in the propagating house, and kept in an intermediate temperature, in which with the ordinary treatment of cuttings as regards watering, and giving air for an hour or so in the morning, they will become well rooted in from a month to six weeks.—ALPHA.

**A Pretty Combination.**—A short time ago I saw a plant of *Juniperus tamariscifolia* planted on the grass, underneath which grew by accident a *Creeping Jenny* (*Lysimachia Nummularia*); the effect at a short distance off was very beautiful. The neat foliage and yellow flowers of the one falling in graceful sprays over the glaucous foliage of the other gave it a peculiar charm. It occurred to me that very many similar combinations might easily be effected. Thus dwarf conifers and low-growing shrubs would form pretty objects in our borders if lightly clothed with creeping or climbing plants of a neat and graceful habit.—C. DENNIS.

**Pentstemons from Seeds.**—*Pentstemons* are very effective, either in beds or borders. Planted thinly over a base or groundwork of *Mignonette*, the effect is pleasing, but the *Mignonette* must be occasionally well pinched, removing the seeds at the same time. Wherever the *Mignonette* grows freely it is apt to overcome every plant of moderate growth, and when the *Mignonette* is well pinched, its usefulness is added to rather than otherwise. *Pentstemons* are very useful treated as annuals, sowing the seeds in spring in a hot bed, and giving them the same routine treatment that is commonly bestowed upon the choicer kinds of annuals raised in heat in spring. If an early bloom is required, then sow in autumn, and shelter the young plants in severe weather from frost. But spring-raised plants bloom freely early in July, and, if not crowded, will continue blooming for a long time. Anyone starting with a few of the best named varieties, well selected as to colour, and saving seeds from the best, may soon create a valuable strain.—E. H.

**Lily Vagaries.**—I have had many odd experiences with *Lily* bulbs, but seldom an odder one than on Saturday last. In opening out a path to connect our field garden and wood garden, two old *Lily* beds were in the way. They were planted on September 16, 1878, one with 25 imported bulbs of *L. Humboldti*, the other with 10 *L. Martagon* fl.-pl. There was no growth above ground in either. However, on carefully forking over the ground, we found the original number of bulbs in each bed, and some small ones. One bulb of *L. Humboldti* apparently had rooted, but another had divided into two. The soil was black vegetable mould, too wet through defec-



tive drainage. Some of the *L. Humboldti* had outer scales rotted, but the rest of the bulb was all right. The *L. Martagon* was in perfect health. I have no doubt that most of the bulbs will bloom well in their new position next year. —GEORGE F. WILSON, *Heatherbank, Weybridge Heath.*

**Exuberant Plant Growth.**—The mild and occasionally showery weather we have had in this country for the past two months has induced many of the spring flowers to again commence blooming. This morning I noticed flowers on Daisies, Arabis, gold-laced *Polyanthus*, *Anemones*, *Auriculas* (alpine), while several *Primulas* are pushing up second flower-stems. Moisture, top-dressing, and mulching may partly account for this, but, notwithstanding, in other seasons, such plants would be decimated with red spider and hot sun. To me, however, still more remarkable was double flower-stems on several of my *Gladioli*, as *Meyer-beer*, *Shakespeare*, *Adolar*, *Anna*, &c., which I never noticed before. The flowers, too, are fine, possibly owing to the frequent doses of liquid manure during June and July, and early sowing, giving a long period of growth.—W. J. M., *Clonmel.*

**Astilbe rivularis.**—Some plants of this, growing in one of our woodland glades, are remarkable for their distinct habit and strong vigorous growth, being from 4 ft. to 5 ft. high and quite as stout in the leaf and flower-stalks as the *Bracken*; the flowers, which are only now unfolding, are produced in immense white panicles, forming handsome and conspicuous objects above the long grass and other rank vegetation. This *Spirea* is a decided acquisition to the wild garden; blooming as it does later than most other Meadow Sweets, it helps to prolong the flowering season of these showy and attractive plants. Another good feature in its favour is its stoloniferous tendency, for I notice that its underground roots are spreading in every direction, and pushing up shoots through the rough grass at a distance of several feet from the old plants, and, judging from the vigour and rapidity with which they are spreading, in a year or two quite a colony or mass of it will be established. This *Astilbe* when once fairly rooted in our wild garden woods will, I think, prove quite a match for and hold its own ground against that too plentiful usurper and flowering-plant exterminator—the *Bracken*. Speaking of the wild garden reminds me of another worthy plant that is well deserving a place amongst other strong growing natives—I mean the *Baneberry* (*Actæa spicata*); its tall spikes of white flowers, borne on strong stalks 5 ft. high, are seen to advantage even when surrounded by rank *Bracken*; moreover, it blooms at a time when there seems a dearth amongst wild flowering plants, and is also not particular as to the situation and soil.—G. B.

**Dahlia scapigera.**—In THE GARDEN (p. 136), "*Delta*" alludes to this plant as being a desirable kind to grow for cut blooms and decorative uses. It is now two years ago since my friend Mr. J. Murison sent me fresh seeds of it under the name of *D. repens*, and at Kew, as also at Cambridge, I found it under the names of *D. glabrata* and *D. Mercki*. The plant flowers at 1 ft. or 15 in. in height, and is now in bloom here in patches from seed sown ten or twelve weeks ago. It is perfectly hardy at Dublin, its self-sown seedlings varying in colour from pure white to a deep magenta-purple. It is certainly a distinct and handsome species well worth general culture, especially on warm, sandy soils. I am anxious to draw attention to its four names—all synonymous. This question of synonyms is most perplexing to amateur gardeners, who are frequently misled by them to purchase plants they already possess under another name. One way of guarding amateurs against this difficulty is for writers to mention all synonyms when writing of a plant, wherever it is possible for them to do so. *D. coccinea* (scarlet), *D. Paragon*, *D. Cervantesi*, and some other single kinds are now blooming here, and I am in hope of obtaining blossoms from vigorous plants of the brilliant Cactus *Dahlia*

*Yuarezi*. I was delighted with a splendid plot of single seedling *Dahlias* last year at Ware's, and have just received an assortment of them in first-rate condition. From these I expect a good autumnal bloom. We are here fortunate in possessing a deep, light, sandy soil, in which *Dahlia* tubers of all kinds winter in perfect safety; hence, we enjoy their beauty much earlier in the season than cultivators do who have to deal with cold, wet, and retentive soils. After a glorious bloom of single and double *Pyrethrums*, these single flowered *Dahlias* are most welcome and satisfactory.—F. W. B.

### SCHOOL GARDENING IN IRELAND.

A SHORT time since Mr. Groom, through the columns of THE GARDEN, drew attention to the desirability of gardening being systematically taught in English schools. I considered on reading the article, that if this was desirable in England, for a score of reasons it was much more so in Ireland, where nine-tenths of the so-called small farms are much more deserving of the name of garden plots; and that a knowledge of how best to cultivate and crop a small plot—even a rudimentary and elementary knowledge—ought theoretically and, if possible, practically form part of the daily exercises in every national school in Ireland. Understanding the general machinery of the Irish National School system in its connection with agriculture and gardening, and believing there was no insuperable difficulty from the points of view indicated, you published subsequently from me some observations to that effect and in advocacy of this subject. Your Irish contemporary, the *Gardeners' Record*, that, notwithstanding the present social and agrarian excitement which has in spite of absenteeism and other causes kept the flag of horticulture bravely floating in Ireland, found space for this article, and almost every issue since had some contribution on the subject. I brought the matter under the notice of Professor Baldwin, believing from old experience that horticulture as well as agriculture had no warmer friend when the object was to benefit the people of Ireland. Since then I am sure the editor will be proud to note some progress has been made towards the realisation of what must ultimately be of enormous benefit to almost every class in this country, for three-fourths of all the school-going young people are found in the National State-aided schools. I noted that for the carrying out a proper system of teaching elementary gardening the following were necessary: Teachers competent to teach it, both as a class subject and practically; a piece of land on which this practice could be exemplified, with a class book for the former purpose. I believed the sanction of the National Board would not be withheld; that inspection, payment for results attained, &c., would follow. I am a humble individual, and pretend to no influence or information except what is within reach of the general public, but for the following results already attained, and which I am satisfied will commend themselves to many English readers, besides Professor Baldwin, you and your Irish contemporary deserve acknowledgment. With the view of giving national teachers greater facilities for the acquisition of small farming and gardening information, the resident pupils were allowed to go home on vacation from the Albert Government Farming College at Glasnevin, and a resident boarding class of national teachers from various parts of Ireland were summoned up, who were to take part in all the operations of the institution, and daily receive lectures from the professors. This class has now returned home to their different schools all over Ireland, and it is to be hoped to spread the information they have acquired, not merely in their schools, but in their school gardens, if they have them. It is deserving of notice, so agreeable is this subject to those taught, that the teachers assembled before separating appointed secretaries, and drew up resolutions, thanking Professor Baldwin and the other professors and members of

the staff. I am now referring to the satisfaction likely to be experienced by teachers in growing crops—and here there is no limit, as it may ultimately include fruit, flowers, and vegetables—and the interest taken by their pupils therein (I know many illustrations); but one difficulty presented itself—where was a patch of land to be found for the purpose in or near towns? Plainly Parliament was the *dernier ressort* if such a thing was to become general, and it was with great satisfaction, it is to be presumed, those interested saw it announced a few days since that the Irish Lord Chancellor introduced a bill with clauses to that effect. Thus some of the most potent difficulties would be removed, and it is to be hoped THE GARDEN, as well as every journal advocating the extension of gardening knowledge among the masses, will use their influence, not only in removing further difficulties, but for seeking payment for results in gardening, as a school subject, in every State-aided school in Great Britain.

Clonmel.

W. J. M.

### DROUGHT AND SEED BEARING.

DURING the late exceptional heat and drought the beauty of many garden flowers was of very short duration even where the means were at hand for obtaining sufficient moisture to keep the roots abundantly supplied, and where this failed the beauty of our gardens has been sadly marred. Not only does the quick fading of the petals mean so much loss of floral beauty, but it generally denotes that the conditions of perfect fertilisation are so favourable that the object for which the flower has bloomed is accomplished, viz., seed bearing, and forthwith all the energies of the plant are absorbed in this matter, and successional blooms fail unless timely precautions are taken to remove the seed vessels or withered flowers, for we have all conclusively settled that it is seed bearing rather than flower producing that brings the plant to a standstill. If we take the common section of bedding *Pelargoniums* that defy drought as well as any plants grown, we shall find that the free seed bearers cease blooming in half the time those do whose flowers produce no seeds. The Sweet Pea, too, if allowed to perfect its seed ceases flowering after a fortnight's display, but if regularly divested of its fully expanded blooms it will keep on flowering until winter stops it.

During the late extreme heat we had a fine lot of Canterbury Bells which every one knows produce abundance of seed, and consequently as soon as the earliest flowers faded and the seed-pods began to swell the lower buds all dried up for lack of sap. By way of an experiment I cut off the seed-pods from one lot and left the others on, and in every case the plants divested of seed-pods expanded their late flower-buds into good blooms, while those on which the seed-pods were left all dried up. It is, therefore, not only a necessary part of flower culture to remove the old flower-heads for appearance sake, but far more for the well-being of the successional flower crop, and for this reason the best seed years are the worst for prolonged floral effect. I have used as examples flowers grown by the million and to be found in every garden as instances of what may be done to prolong floral beauty by the early removal of seed-bearing blossoms. J. GROOM.

**Botanical Names.**—It was by a slip that I marked the *i* of *Gladiolus* as long; it is, of course, short, like the syllable I had more immediately in view. I note with pleasure that the points I ventured to urge, apart from the particular instances, are not disputed. "*Pompador*," who somewhat naively asks for the "*authority*" for these quantities, may be briefly answered thus: It is usual to give words borrowed without change from the classical languages, especially when employed in scientific nomenclature, the same quantities as in those languages. One last word: It is perfectly open to a gardener to speak, e.g., of the *Arbutus* or of the *Strawberry* tree; only, if he chooses to employ the Latin name, I would beseech him not to call it the *Arbutus*, but the *Arbutus*. So, if it chance to be his happy fortune to be called on to name a new plant, let him do so in accordance with, and not in flagrant defiance of, the genius of the language he uses, be it Latin or English.—BOTANICOMASTIX.



## THE GARDEN FLORA.

PLATE CCXCVIII.—THE DOG'S-TOOTH  
VIOLETS (ERYTHRONIUM).

THESE Liliaceous bulbous plants are among the loveliest of our hardy garden flowers, though only one of them, the old favourite *Dens-canis*, is commonly cultivated. This has been in gardens for upwards of three centuries, having been grown by Gerard, but it is only within the last half-century that the American kinds have been in cultivation, and it is with the view of extending the knowledge of these that we publish the present plate of the Californian species, which are even more beautiful than the European kinds.

The genus is not a large one, numbering only about a dozen species and varieties. These exclusively belong to the North American continent, with the exception of *E. Dens-canis*, which is common in Switzerland and other parts of Europe, and extends across Asia to the Pacific coast; one variety of it (*sibiricum*) is found in Siberia, and another, *japonicum*, is a native of Japan.

Of the American species, two, *E. albidum* and *E. americanum*, are confined to the Atlantic side of the continent, and the rest are natives of the western portion beyond the Rocky Mountains.

With regard to the nomenclature of the species, there is some little diversity of opinion among botanists. For the Californian or Western kinds we follow the second volume of the "Botany of California;" for the Eastern, Dr. Asa Gray's "Manual of North American Botany;" and for the others, Mr. Baker's "Revision of the Liliaceæ," as published in the Linnean Society's "Journal." The following are the species and varieties:—

**E. DENS-CANIS** (Linn.).—A beautiful plant with handsome oval leaves, rounded below and pointed above, being so marked with patches of reddish-brown as to make it worthy of being grown as a diminutive fine-foliage plant, even if its fine flowers never appeared. These are borne singly on stems 4 in. to 6 in. high, drooping gracefully, and have six rosy purple or lilac divisions. There is a variety with white, one with rose-coloured, and one with flesh-coloured flowers. There is also a form called by Miller *E. longifolium*, which has longer and narrower leaves and larger flowers, and it is this variety from which the sorts enumerated in trade catalogues under the name of *majus* are apparently derived. *E. Dens-canis* thrives in moist sandy, peaty soil, in positions fully exposed to the sun. It is one of the most valuable subjects for the spring or rock garden, or border of choice hardy bulbs, and, where sufficiently plentiful, for edgings to American plants in peat soil. The bulbs are white and oblong, resembling a dog's tooth, hence its common name. It is increased by dividing the bulbs every two or three years, replanting rather deeply. A native of Central Europe. The varieties of *sibiricum*, a robust-growing plant, from the Altaian Mountains in Siberia, and *japonicum* with violet-purple flowers are not, so far as we are aware, yet in cultivation.

**E. AMERICANUM** (Yellow Adder's-tongue).—This species is common in the low copses in the Eastern States of North America, where it flowers in May. The leaves are elliptical, lance-shaped, pale green, mottled, and commonly dotted with purple and white. Flowers 1 in. across, pale yellow, spotted near the base; produced on slender stalks 6 in. to 9 in. high. A variety (*E. bracteatum*) (Booth) differs in having a bract developed, as *E. grandiflorum* sometimes has. This is a very pretty

kind, but seldom seen in cultivation in consequence of its being a somewhat shy flowerer. The late Mr. McNab was very successful with it in the Edinburgh Botanic Garden, and he thus writes of it in an early volume of THE GARDEN.

"This interesting plant formerly grew in the open border here, but its flowers were rarely seen. Some years ago I put a tuft of the bulbs in one of the stone compartments of the rock garden having a southern aspect, the soil being a mixture of peat and loam. As soon as the space became filled with roots, flowers were freely produced, and on the 20th of April it was covered with yellow blooms. In these confined spaces the bulbs are better matured for flowering than they can possibly be in open borders, where the surface of the ground is generally seen covered with a mass of small green leaves proceeding from numerous unmatured bulbs, having but few of the larger spotted leaves which generally accompany the flowers. All the species of *Erythronium* succeed well in rough stone boxes. Judging from the flowering of the *Erythronium americanum*, when their bulbs are matured in these stone boxes, roots planted in moderate-sized flower pots, and placed under the surface of the soil in the open border, ought to produce flowers in exactly the same way as in the rock compartments, provided they are placed in a position where the bulbs can be properly matured."

**E. ALBIDUM** (Nuttall).—Little is known in gardens in this country with regard to this species. It grows rather plentifully in low thickets in New York and neighbouring States. It differs from the preceding in the leaves not being mottled or spotted, the flowers white or bluish-white instead of yellow, and by the stigmas being 3-cleft instead of united. *E. carolinianum* (Walt) and *E. Nuttallianum* (Schult) are either synonymous or mere forms of this species.

**E. PROPULLANS** (A. Gray).—This is a very rare species even in Minnesota, its native locality. The flowers are smaller than any other, of a rosy-purple colour, and with small spotted leaves. Some three or four years ago it was introduced to Kew, but it was soon lost, and it is doubtful if it is in cultivation now anywhere.

**E. GRANDIFLORUM** (Pursh).—This is the only cultivated kind that bears more than one flower on a stem, and is one of the kinds represented in our plate. It is an extremely handsome plant when well grown, but never have we seen it in better condition than in Mr. G. F. Wilson's valley garden at Weybridge Heath, where, in a peat bed with Lilies and other peat-loving plants, it attains fine proportions, as many as five flowers being produced on the stems. It was from these plants our plate was drawn. A description of the plant is scarcely needed, as the plate is a good representation. The late Mr. McNab used to grow the larger of the American kinds as well as the European *Dens-canis* very successfully in Grass. Writing of them in spring, he says, "Many Dog's-tooth Violets are in bloom on the northern grassy slopes of the rock garden; they were thickly dibbled in, here and there, when the turf was first laid, and, being placed in all exposures, a longer flowering season of these interesting plants has been obtained. In such places they do not seem to multiply fast, as single flowers proceeding from the two or three spotted leaves are only produced. Owing to the beauty which these plants present, when grown on Grass lawns, they should be more employed than they now are for culture in that way. When grown in beds and kept undisturbed (unless for sub-division) they are all very well, but when grown in borders, as is usually the case, the roots are frequently tossed

about by the spade, and come up in all directions. On Grass banks with a southern aspect the leaves are all ripened off before the first Grass cutting takes place, which is not the case on Grass slopes having a northern aspect.

**E. REVOLUTUM** (Smith).—Botanists as a rule class this as a variety of the preceding, but we are inclined to consider it as a distinct species, at least for garden purposes, seeing that it is so different from other cultivated kinds. The flowers are large, and, as may be seen by the plate, are of a delicate rosy tint. It somewhat resembles *E. Dens-canis*, but it has no blotching on the leaves. It is very rare in cultivation, the only living specimens of it being those in Mr. Ware's nursery at Tottenham, and from these our drawing was made last spring. The plants were growing in a bed of light rich soil and apparently thriving finely, but probably it would become amenable to less refined treatment. It is a native of California and Nootka Sound. Mr. Sereno Watson in the "Botany of California" places it as the variety *Smithi* (Hook) of *E. grandiflorum*.

**E. GIGANTEUM** (Hooker).—This, the noblest of the genus, is likewise considered a variety of *E. grandiflorum*, but who can mistake one for the other when seen as they are grown in this country? The flowers shown in the plate were from plants growing in Mr. Wilson's Weybridge garden, where they thrive in a luxuriant manner in a peaty soil. As the plate well shows, it is a showy flower, pure white, with a ring of bright orange red, brighter than in the illustration. Some of the flowers we measured were 3 in. in diameter. It is found in California at an elevation of 6000 ft. to 10,000 ft., and also in Vancouver's Island. It was called *E. maximum* by Douglas, and *E. speciosum* by Nuttall.

**E. PURPURASCENS** (Watson).—This is the same as the variety of *grandiflorum* named by Torrey *E. multiflorum*. It has from one to fifteen lilac tinted flowers on each stem. This we have not seen, but it would be well if the introduction of such a beautiful plant could be hastened, for it would probably surpass all the others in beauty. A variety of it, the *E. revolutum* of Baker, has slender flower-stalks, being a solitary flowerer. A native of the Sierra Nevada.

**E. HARTWEGI** (Watson) is a species unknown in gardens in this country. It has mottled oblanceolate leaves, and solitary flowers borne two or three in an umbel, light yellow and orange. A native of the Sierra Nevada.

W. GOLDRING.

**A Ladies' Flower-growing Company** is talked of, the idea being that not only should ladies themselves cultivate the flowers in the country, but afterwards be the medium of selling them in London, thus providing for themselves a new field of usefulness and enterprise, besides supplying a want much felt. In the present day there is a positive craving in town for flowers from the country at a reasonable price, and nothing can be more inadequate than the supply. There is no greater snare and delusion than Covent Garden Market in this respect. I admit there are charming flowers and delicious fruit to be got there; but at what a price! One actually pays more than at a shop; and then there is the carriage or hire of a cab to be added. In its own way Covent Garden and the whole system governing the sale of fruit, vegetables, and flowers are quite as bad as Billingsgate as to fish, and it is notorious that fruit and vegetables are destroyed wholesale rather than that the trade prices should be lowered. Why should not kiosks for the sale of fruit and flowers be established in some of our squares or in Hyde Park itself, with ladies as the











saleswomen? As to this projected company, already a number of ladies of "light and leading" have agreed to take an active share in the concern; and several well-known gentlemen are to be affiliated with it, Mr. Oscar Wilde having for one announced his intention to grow "acres of Daffodils."

## THE FRUIT GARDEN.

### FRUIT GROWING MADE EASY.

**PLANTING.**—This should be performed as expeditiously and carefully as possible, as with a dry wind blowing, much injury may be done to the tender rootlets if allowed to be exposed for any length of time out of the ground. If the soil is frost-bound, planting should not be attempted at all. Roomy holes should be dug out, and the roots should be extended and covered with fine mould and manure (that from an old Cucumber bed being very suitable for the purpose) mixed in about equal proportions; the earth dug from the hole may be used for filling up, but large, hard lumps should not be thrown in near the roots. During planting, the ground should be pressed with the foot, care being taken where the soil is very stiff not to tread it so tightly as to cake it. As soon as convenient after planting, standards, half-standard, and pyramids should be staked with a good, strong, durable stake, firmly embedded in the earth, and sloping slightly towards the tree from the N.E. to S.W. (the most severe winds may be looked for from that quarter), and tied just below the crown. A piece of sacking or handful of soft straw should be twisted round the tree, to prevent the stake and the string from injuring it. Some use two stakes placed opposite each other, their tops being a few inches from the tree, which is kept in its place by means of Rye straw, for instance, twisted tightly round them and it. In winter, young trees—especially Apples—are subject to the ravages of game; therefore it is necessary to keep the stems well protected with a bundle of twigs tied round them, or wire netting placed a few inches from them, or by painting their stems with some preparation harmless to the trees, yet repulsive to their enemies, and this will require renewing from time to time, until the rind gets sufficiently thick and hard to resist their attacks.

**PRUNING.**—As the shape of the tree and its future capacity for bearing depends almost entirely upon the way in which it is pruned, it is of the highest importance that only experienced hands be employed for such work, and on this subject I can only state in general terms that sufficient shoots should be left, and of such length as shall ensure the due growth of a well-formed tree—not so long as to make it top-heavy, nor so short as to indefinitely retard its bearing fruit, whilst the removal of cross shoots and the spurring of others must not be overlooked as the tree grows.

**MANURING.**—Do not be afraid of well manuring the trees from year to year; liquid manure made from night-soil poured round them in winter helps them greatly. If they are not well manured the impoverishing effects of the intermediate crops, which may be grown for a few years after planting, will stint them in their growth, and prevent a plantation being raised with anything like despatch or credit. In a young orchard it is no uncommon thing to see horses at plough or harrow, resulting sometimes in great injury to the trees; so injured indeed are they in some instances, that they never recover, owing to the whiplike trees or billets knocking against and tearing the rind

from the stems, or the plough point disturbing or cutting their roots. I have in my mind's eye an orchard in Herts that pitifully exemplifies what I say, many of the trees being from this and other preventable causes only about half or even a third of the size they ought to be considering their age.

**WEEDY ORCHARDS.**—Be careful, too, not to let the ground get overrun with weeds; the difficulty and expense of getting it clean again only those know who have had an experience in the matter, "prevention better than cure" being particularly true as applied to this case. I shall never forget an observation made several years ago by one of our party when passing through a Cob Nut plantation, that was as much like a rough meadow underneath as could well be; he said, "This is what they all come to," or words to that effect, a remark not altogether devoid of truth. The practice of mowing orchards is a bad one, tending as it does to starve the trees; a more judicious plan is to feed them with pigs or fattening sheep, some protection being put round the trees for a few years to keep animals from rubbing against and otherwise injuring them. Let me add, in conclusion, that fruit growing may be made all the more easy by the removal of the unjust impost of extraordinary tithe.

AGRICOLA.

### COOL FRUIT HOUSES.

Our present forms of Vineries are not sufficiently simple; they entail too much attention on the part of the gardener, they are very apt to be infested with red spider, and the leaves to be scorched by a burning sun, and last of all, they will not ripen Grapes thoroughly in all seasons without fire-heat; these are four great disadvantages. I will now describe some houses I had constructed here ten years or more since, not only suited for carrying out all that is requisite in growing fruit, but suited for persons of small means, and as the Grapes merely require to be thinned, the superfluous shoots cut off occasionally, and the doors opened and shut at proper hours, a lad or a common labourer can do this, and if any one wishes to test what I say, let him come and see; the editor knows my address. As these houses were constructed merely for experiment, they are of small size, 25 ft. in length only; one is a Vinery containing 300 bunches of Grapes, Royal Muscadine; another a Peach house with two trees, on one of which I counted 300 fruits. The mode of construction is as follows: These houses run north and south; no other aspect will answer; they are 25 ft. in length; they are made somewhat like a wedge, 7 ft. wide on the floor and 3 ft. at the roof; the rafters run down to the ground, and they are 8 ft. in length; they are grooved, and the glass is slipped in; there is no putty or paint; but the wood requires to be brushed over when quite dry with petroleum, which penetrates the entire wood and preserves it. One coat of paint will produce a good effect, but it is not necessary; each square of glass is kept in its place by means of a thin piece of copper; there is a door at each end. A house of this size can be built for £10. 300 bunches of the Muscadine will sell in September in Covent Garden for more than £5. The doors are open from 8 a.m. until 1 p.m. to give firmness to the leaves; they are then shut, and a temperature of 100° is secured when the sun shines. In building a house of this shape the rays of the sun glance off, and we get no burning and no red spider. I presume a house of this shape might answer built 20 ft. in height if the proper angle for the rafters be preserved. The rafters are not of the common form, and to build a house of this shape

it would be necessary to send a small model rafter to any one requiring it.

PHILODENDRON.

### SUMMER PRUNING PEACHES AND NECTARINES.

In a general way the pruning of Peaches and Nectarines is left till the winter or spring, but if thinned out by removing all superfluous shoots directly the fruit is off, those remaining are benefited, as not only are they more exposed to the air and sun, which would very materially help them, but the energies of the trees are directed to fewer buds, which swell up the finer and faster, and healthy blossoms are the result. I would therefore advise all who can anyhow spare the time to do their pruning now, and not to leave any more wood than is absolutely required for laying or tying in to fill every portion of the trellis, and if the shoots are about 6 in. or so apart, that is quite near enough, as there is nothing gained by having them thicker. What is more important than anything else at this season in the case of Peaches and Nectarines is the keeping of the foliage clean and free from red spider, which can only be done by giving the trees the same attention as is generally afforded them when bearing a crop. One of the most frequent causes of red spider is dryness at the roots, and another, the hot arid state of the air of the house, under which adverse conditions the foliage soon becomes distressed and a prey to insects. If the lights cannot be taken entirely off, the house should be set wide open, the trees heavily syringed every evening, and the borders should have a thorough soaking with either clear water or liquid manure if they are thought weak enough to require the latter.

S. D.

**Fruit Trees as Ornaments.**—It is singular how persistently we cling to old notions, one of which is that the useful and the ornamental are rarely combined, and that when it is so, the useful character of a tree, shrub, or plant is sufficient to exclude it from being employed in an ornamental way. We are all acquainted with the beauty of fruit trees, which is quite equal, if not superior, to that of many ornamental trees grown wholly for their flowers. Yet how seldom do we find a fruit tree in our pleasure grounds, large or small, except behind a hedge or screen to shut it out of sight! Are we so much enslaved by prejudice or fashion as to blindly follow so absurd a practice—one that makes one-half the country barren when, by utilising fruit trees in both their useful and ornamental characters, we might increase our supplies of fruit threefold from the space now occupied by totally unproductive subjects? Fruit trees in spring, Peaches and Nectarines, with their cheery blossoms, and Cherries, Plums, Apples, and Pears, form such sheets of bloom as to be quite striking, and when covered with fruit I find them highly appreciated for purposes of decoration. Why, then, do we forbid their presence on lawns and in pleasure grounds? We talk of Kent as the garden of England; more than half its beauty is due to fruit trees being planted so indiscriminately, that the eye always catches the beautiful effect which they produce, according to the season of flowers or fruit.—J. G.

### SEASONABLE WORK.

**Peaches.**—As next year's crop depends in a great measure upon the treatment the trees receive after the fruit is gathered, see that the foliage is kept clean and healthy by means of a copious syringing and watering until the flower buds become prominent. Remove all breast-wood as it appears, and prune away every shoot that has borne fruit and is not likely to be of further service. This process will let in light, warmth, and air, the buds will ripen properly, and the roots being kept right there will be little danger of dropping in the spring when they ought to be bursting into flower. Abundant ventilation is of



course imperative, and trees that have been forced very early will derive great benefit from the full exposure of their leaves and roots to dew and rain, by the entire removal of the lights; but this should not be done until the wood is quite ripe, and they should be replaced before the borders get saturated with cold rain. If any of the borders require renovating, or lifting is thought advisable, the materials should be got ready in a dry state, and the work should be done before the leaves fall. Sound calcareous loam and old lime rubble will grow the best of Peaches, and manure should be used as a mulching in preference to mixing it with the soil. In the course of ten days new roots will begin to work, and forcing may be commenced at the usual time. Keep late houses well stopped and guard against crowding the young wood. Let the fruit be fully exposed to the sun, and discontinue syringing before it begins to soften for ripening. To catch the full flavour of a good Peach it should be gathered before it becomes dead ripe.

**Figs.**—Early pot trees, from which the second crop has been gathered, must be encouraged to ripen up their wood and go to rest. If the roof lights are portable they may be removed for a short time to give them the benefit of the cleansing influence of warm showers; but care must be taken that they do not become too wet at the roots, otherwise the young Figs, that should be the first to ripen next spring, will get too forward and fall off. Prolific kinds, like Brown Turkey, should not be allowed to ripen more than two crops, as any fruit that commences swelling after the second crop is gathered only weakens the trees and keeps them in a state of excitement when they ought to be going to rest. Late houses now ripening second crops will require a free circulation of air with gentle fire heat to prevent spotting or cracking. Syringing must be discontinued, and water, where the roots are inside, must be given sparingly on fine mornings in order to admit of the escape of moisture before nightfall.

**Strawberries.**—The potting of Strawberries will have been brought to a close, and the plants as days decrease in length will make rapid growth. Give them plenty of room to prevent elongation of the foliage, defer watering until the sun is off them, and guard against the ingress of worms by watering once or twice a week with clear diluted soot water. Remove runners as the plants become established, and encourage the ripening of the crowns of those intended for early forcing, by placing them on raised planks or shutters.

Eastnor Castle.

W. COLEMAN.

## THE BEST PEARS.

(Continued from p. 169.)

**Soldat Laboureur.**—*Synonyms*—De Soldat, Beurré de Blumenbach, Auguste Van Mons Soldat.

**DESCRIPTION OF THE TREE.**—Wood, very strong. Branches, numerous, erect at the top of the stem, spread out at the base, very long and very thick, very flexible, of a greyish-brown, with the lenticular markings excessively large, rather abundant, with the callosities very prominent. Eyes, very bulky, ovoid, pointed, spread out away from the wood. Leaves, rather large and numerous, oval or long oval, acuminate, irregularly indented and crenulated at the edges, with a long thick rigid stalk, provided with very highly developed stipules. Fertility, satisfactory and constant.

**CULTURE.**—This is a tree of somewhat uncommon vigour, growing admirably on a Quince stock; the graft develops quickly, and by the second year it begins to form pyramids, with which no fault can be found.

**DESCRIPTION OF THE FRUIT.**—Size, above the average. Form, pretty variable, most frequently irregularly turbinate, blunt, and knobbed or very globularly turbinate. Stalk, of medium length or short, well grown, bent, sometimes knotty,

oblique or vertically inserted in a cavity of no great depth, and usually wrinkled at the edges. Eye, large or medium, half closed or shut, slightly sunk. Skin, thin and more or less rough; the ground is golden yellow, thickly covered with dots, spots, and streaks of a reddish-brown and squamose, which gives it a speckled appearance like granite, especially on that side which is next the sun. Besides this it is spotted with fawn colour round the stalk. Flesh, white, half fine grained, melting or half melting, with a few gritty concretions towards the core. Juice, very abundant, very sugary, vinous, sub-acid, and deliciously fragrant. Season, towards the end of October, and lasting easily until December. Quality, first-rate.

**HISTORY.**—For a long time the Orpheline d'Enghien has been mistaken in France for the Soldat Laboureur variety, but during the last twenty years these two varieties have ceased to form a bone of contention amongst pomological writers. Major Esperen, the famous Belgian pomologist, who served with great distinction under Napoleon I., and at Malines in 1847, was the raiser of this Pear. He first obtained it between 1817 and 1820, and gave it the name it bears in allusion to the hard work which he had done as a soldier, as contrasted with the peaceful work he had in his rare furloughs, which he always devoted to growing seedlings (*Portefeuille des Horticulteurs*, 1848). It has also stated that this Pear was not introduced into French orchards until 1841. This date is entirely wrong, for the Horticultural Committee of Angers grafted it in its nursery as far back as 1838, and I myself can bear witness that it fruited for the first time in 1842, the Pears it produced on this occasion being eaten on December 3, while those of the following year were not eaten until three weeks after that date ("Archives of the Angers Committee—Tasters' Report").

**Souvenir du Congrès.**—*Synonym* Paire du Congrès Pomologique.

**DESCRIPTION OF THE TREE.**—Wood not very strong. Branches pretty numerous; spread out at the lower part of the stem, erect at the top, of medium thickness, very long indeed, kneed, light brown, tinged slightly with pink, with the lenticular markings distinct and well separated, the callosities being flattened. Eyes, small, wide, separated from the wood, often projecting in long spurs, and being badly joined together. Leaves small, oval, elongated, sometimes acuminate, deeply crenulated, borne on a short, thick stalk, and accompanied by well-developed stipulus. Fertility, great.

**CULTURE.**—This Pear tree, the vigour of which is nothing out of the common, grows as easily on the Quince as on the free stock. Its growth is no way exceptional, but the pyramids it forms are good looking enough.

**DESCRIPTION OF THE FRUIT.**—Size above the average. Shape, turbinate, very much rounded, and somewhat knobbed, especially at the top, which is generally mammellated. Stalk, pretty long, thin, bent back, and regularly inserted in the centre of a basin, which is rarely very deep. Eye, medium, open, well made, inserted in a basin, which is of varying size, and whose edges are irregular. Skin, rough, olive yellow, slightly dotted with brown, partly covered with veins and spots of fawn colour, more or less tinged with red on the side next the sun. Flesh, yellowish white, firm texture, melting, juicy, almost free from grit. Juice, abundant, sugary, acidulous, and with a musky fragrance, which is rendered delicious by its not being too pronounced. Season, from November well into December. Quality, first-rate.

**HISTORY.**—This Pear was first raised at Rouen in 1856, and was described in the following year by its discoverer, M. Boisbunel, a fruit grower of that locality, who then submitted it to the horticultural club of that city, and afterwards called it after the pomological congress held there.

**Passe Colmar.**—*Synonyms*—Passe Colmar Epineux, Passe Colmar Superfin, Colmar Preul,

Colmar Souverain, Regentine, Souverain d'Hiver, Passe Colmar Gris de Perce, d'Argenson, Beurré Argenson, Beurré Colmar, Gris, Chapman, Colmar Epineux, Passe Colmar Gris, Précel, Roi de Bavière, Ananas d'Hiver, Cellite, Colmar Doré, Colmar Gris, Colmar d'Hardenpont, Fondante de Mons, Gambier, Marotte Sucré Jaune, Present de Malines, Regentin, Passe Colmar Ordinaire, Impératrice, Passe Colmar Nouveau, Colmar de Silly, Pucelle Condesienne, Beurré Passe Colmar Doré, Passe Colmar Souverain, Passe Colmar Supreme, Bergintin, Double Passe Colmar, Passe Colmar d'Hardenpont, Passe Colmar de Vienne, Pressel, Supreme Gris, Passe Colmar Doré, Passe Colmar d'Hiver, Passe Colmar Rouse, Beurré Chapman, Colmar Bonnet, Passe Colmar Tardif, Passe Colmar Vineuse d'Hiver, Preul, Fondante de Paris, Gambrier, Passe Colmar Précel, Précel Bergintin, Précel Ragentin.

**DESCRIPTION OF THE TREE.**—Wood, rather weak. Branches, pretty numerous, slightly spread out, short, and of medium thickness, only slightly kneed, greenish-yellow, with very fine and distinctly marked lenticular markings, with callosities prominent. Eyes, thick, ovoid, blunt, and standing out from the wood, often forming a spur. Leaves, small, abundant, oval, generally acuminate, regularly serrated, borne on strong and rather long stalk. Fertility, great.

**CULTURE.**—The vigour of this Pear tree is moderate, and the growth of its graft very slow; it may be grafted either on the Quince or free stock; it forms pyramids, which although small are nevertheless rather handsome.

**DESCRIPTION OF THE FRUIT.**—Size, often above the average, and sometimes considerably so. Shape, variable, either irregularly turbinate, flattened, knobbed and contorted, or elongated, turbinate, regular, blunt, and much swollen in the whole of the lower part. Stalk, of average length, somewhat thin or well grown rarely much curved, generally swollen at the ends, especially where it is attached to the fruit, which sometimes forms a prominent boss, implanted obliquely or vertically, and always level with the surface. Eye, medium, open, placed in a large basin, the depth of which is rather variable, and the edges very much rounded. Skin, thick, golden yellow, speckled and faintly marbled with red, spotted with the same round the stalk and sometimes also in the cavity, tinged with vermilion on the sunny side. Flesh, melting or half brittle, yellowish-white, fine grained, juicy and fragrant, but very slightly granulated about the pips. Juice, exceedingly abundant, very sugary, and very vinous, possessing a perfume of rare delicacy. Season, from the end of November or beginning of December, and lasting sometimes until the month of March. Quality, first-class.

**HISTORY.**—The Passe Colmar is scarcely a century old, and yet during that period I find, without very great research, it has gone by no less than fifty-three synonyms—surely an excellent testimony to its value, and at the same time an exposure of the frauds and tricks of speculative growers. It was first obtained in 1758, by the Abbé d'Hardenpont, a grower well known as having raised several other excellent varieties. The abbé lived at Mons, in Belgium, where he planted in his garden near the Havre Gate of that ancient town a collection of fruit trees which included a large number of varieties. He first called this fruit Passe Colmar Epineux (thorny) and then set about propagating it. The Germans were the first to grow it outside Belgium, as we may learn from the *Deutscher Obstgartner*, published at Weimar in 1794. It was not introduced into France until many years after, but not as late, however, as 1825, as has been erroneously stated, for at this date Louis Noisette had cultivated it for some fifteen years, as will be proved by the following passage taken from one of the best known horticultural journals of Belgium: "The Passe Colmar," says M. Roze, "remained for a long time unknown in France. Noisette introduced it about 1806. He had a great deal of trouble to propagate it owing to its being frequently confounded with the old-fashioned Colmar or Manne Pear, a mistake which



would be impossible in these days owing to the relations which have been established between fruit growers of all nations (*Annales de Pomologie Belge et Etrangère*, 1834)."

REMARKS.—Fondante de Paniselle is not, as has been supposed, a synonym of the Passe Colmar, nor of the Délices d'Hardenpont d'Angers, the name belonging properly to the Archduke Charles, or to the Délices d'Hardenpont de Belgique. The Passe Colmar Musqué has also nothing to do with the Passe Colmar, but takes the rank of a distinct variety. In 1850, I received from the nurseries at Vilvorde-lez-Bruxelles, which were then in the hands of the late M. Laurent de Bavay, a certain Colmar de Silly, which figured in my catalogue for several years, but about 1860 I gave up growing it, having proved its identity with the Passe Colmar. In 1835 Van Mons made a wise recommendation on the subject of the Pear now being described. "We must," says he, "take great care not to allow this fruit to suffer from the effects of the early frosts, otherwise patches of moss will establish themselves on its skin and black specks in its flesh, which will become bitter."

**Nelis d'Hiver** (Poire Bonne de Malines).—*Synonyms*.—La Bonne Malinoise, Beurré de Malines, Etourneau, Malanaise Cuvelier, Bergamote Thouin, Colmar Nelis, Thouin Colmar d'Hiver.

**DESCRIPTION OF THE TREE.**—Wood, pretty strong. Branches, very numerous, erect at the top of the tree, spread out at the base, of average thickness, long, very much kneed, of a light greyish-brown, with large and closely-packed lenticular markings, the callosities being scarcely perceptible. Eyes, small or medium, pointed ovoid, separated from the wood, often projecting like a spur, and with the scales disjointed. Leaves, pretty small, abundant, oval lanceolate, regularly serrated, and borne on a long, well-grown stalk. Fertility, great.

**CULTURE.**—It may be grafted either on a Quince or Pear stock; it is vigorous of growth, but only begins to form a fine tree after the second year. It forms perfect pyramids well covered with foliage and well branched.

**DESCRIPTION OF THE FRUIT.**—Size, medium, or below the average. Shape, variable, generally between the blunt and swollen, turbinate, strongly knobbed, globular. Stalk, neither very long nor very thick, swollen at the base, curved, inserted obliquely at the surface. Eye, very open, sometimes twisted, the segments being very short, placed in a wide, deep, round basin, the edges of which are seldom irregular. Skin, thick, dull yellow, speckled with red, spotted with light brown, striped with the same in the cavity which holds the stalk, and much bronzed, especially on the side next the sun. Flesh, yellowish, fine in texture, excessively melting, juicy, and slightly granular near the pips. Juice, very abundant, sugary, vinous, acidulated, possessing a delicious perfume reminding one of the Rose. Season, from the beginning of November to the end of December, and sometimes into the month of January. Quality, first-class.

**HISTORY.**—This Pear belongs to Belgium, and was one of the results of a sowing made at Malines by the Councillor Jean Charles Nelis, a well-known horticultural amateur, who died in 1834. The exact date of its appearance is unknown. In 1849 M. Bivort, in his *Album de Pomologie*, thought that it probably dated from the last years of the first French Empire, an opinion which we are inclined to share, seeing that this Pear had already become known to the English growers before 1820, as is clearly proved by the passage quoted below from the Proceedings of the Horticultural Society of London: "Mr. John Turner, the assistant secretary, first introduced this Pear to the notice of the society in October, 1820, in a report presented by him on several varieties which he had recently received for us from M. Stoffels, of Malines, during the years 1818 and 1819. This Pear, grown in England, possesses the same good qualities as recommend it in the place of its birth." It was not grown in France until much

later; not, in fact, according to Professor Alphonse de Breuil in his *Cours d'Arboriculture*, until 1828. At first it was called by several different names, such as Nelis d'Hiver (Winter Nelis), Colmar Nelis, Bonne de Malines, &c., but the last seems to have stuck to it, and it is by this name that it is at present most generally known to French growers and sellers. Besides, although it has frequently been denied, this appellation was the one by which it was most generally known from the very first, as Dr. Lindley testifies in the following passage from his "Guide to the Orchard and Kitchen Garden," 1831: "Nelis d'Hiver.—This exquisite Pear was obtained as a seedling by M. Nelis, of Malines, and it was in honour of this well-known amateur that it received the above name, but long before it received this cognomen it was called in certain gardens Bonne de Malines."

REMARKS.—It was supposed some years since that the Dr. Nelis Pear was identical with the Bonne de Malines. This idea was without foundation, because the former of these fruits ripens fully two months before the latter. As for the Bergamote Thouin, which has also been said to be the same as the Bonne de Malines, it is only right to classify it amongst the synonyms of this Pear, which it resembles in every particular.

(To be continued.)

## THE INDOOR GARDEN.

**Echeverias for Winter Flowering.** Few plants present a more striking appearance than well-grown specimens of *E. metallica*. The foliage of this species is at all times handsome, but when surmounted by its quaint-looking flower-spikes, its beauty is very much enhanced. Although the individual blooms can scarcely be termed showy, they have a bright, cheerful appearance, and show up well when placed in the immediate neighbourhood of fine-foliaged plants. The chief beauty of this plant, however, lies in the flower stems, which exhibit a peculiar, but pleasing shade of colour, which may be best described as a bright coral-red. Taking the inflorescence as a whole, its curious wax-like appearance might easily induce the belief that it was moulded out of this material. When so placed in greenhouses or conservatories that the flower-stems issue from amongst a mass of verdure, the peculiar charm of the plant is fully displayed. In order to obtain good, well-flowered plants for winter work, some young healthy specimens should be shifted into fresh loam in early spring. Grow them in a light, well-ventilated structure, picking off all bloom until about the beginning of September, when the flower-stems may be allowed to develop. Flowers will then be produced continuously all through the winter, expanding in a temperature of 45° to 50°. If a portion of the stock is not allowed to throw up bloom until a latter period, a succession of flower all through the spring months will be secured. Old plants which have become leggy and top-heavy may be easily dwarfed by cutting off their heads about 4 in. below the leaves, and inserting them in pots of sandy soil, placing them where they are fully exposed to sun and air. If this operation be performed early in the summer, the pots will become well filled with fibre by the winter, and such plants will prove very ornamental, forming a massive rosette of broad, handsome leaves, and throwing up several strong spikes of bloom. *Echeveria retusa* is a species the merits of which are by no means so fully recognised as they deserve to be. In beauty of foliage it cannot compare with such kinds as *E. secunda glauca*, but it makes amends for this deficiency by flowering freely and profusely through the winter months, not needing to be assisted by artificial heat. This species is easily increased, as it throws off a number of off-shoots from the main stem, which strike with great freedom. This kind requires liberal treatment during the summer months. The plants should be shifted about the latter end of March, and after being kept rather close for a few weeks until quite re-

covered from the check, should be placed in a light airy greenhouse, fully exposed during the summer months to the sun. During the latter part of August and beginning of September they would be benefited by full exposure to the sun and air outdoors, after which time they should be placed in the greenhouse or conservatory; or a portion of the stock may be hastened into full bloom by placing them in a light position in an intermediate structure. A plant in a 4-in. pot should be furnished with three or four good rosettes of foliage, which, when surmounted by a mass of bright red cheerful-looking blooms, may be usefully employed in many kinds of floral decorations. J. C. B.

## THE DATE PALMS.

THE value of Palms for furnishing and other decorative purposes is well known, their rich green foliage and noble habit and their strong constitution, which enables them to bear with impunity a great amount of rough treatment, being characters especially valuable to the furnisher as well as to plant growers generally. It is therefore not surprising to find some of our enterprising trade horticulturists turning their attention to these useful plants, and I could point to several establishments where many of the beautiful members of this magnificent family, which up to the present one only met with in botanical collections or herbaria, are to be found in large numbers. There are numbers of valuable ornamental Palms yet to be introduced to our gardens, and it is to be hoped that now they have been taken in hand by some of our spirited nurserymen we may soon become acquainted with them. There is a great obstacle to the accomplishment of this in the impossibility of propagating the majority of Palms by any method other than that of raising them from seed, which of course must be imported, as very few even where space can be given are known to fruit in this country. The many difficulties that present themselves to the collector of these seeds may be instanced by the case of that prince of Palms, *Cocos Weddelliana*. This plant was long known to horticulturists before it was found possible to introduce it in any quantity, owing to the suspicion of the natives who were employed to collect seeds, and who (so it is said) either by boiling or some other method destroyed the germinating power of the seeds. Looking at the progressive strides that the various modes of civilisation are rapidly making in the countries where Palms abound, and the growing desire on the part of travellers, collectors, &c., for the introduction to our gardens of the riches of the tropical flora, it may not unreasonably be hoped that seeds in quantity of all those Palms whose presence in our gardens is desirable may be procurable.

THE GENUS *PHŒNIX* is one which, whether viewed from its economical value, its historical connections, or the decorative beauty of some of its members, is one of the most important and interesting. It is distributed over North, South-east, and West Africa, and tropical Asia, to which countries it is indigenous, and in South Europe, where it has been originally introduced. Constituting as it does one of the most important articles either of food, clothing, or commerce to the inhabitants of the countries where its various members are found, its cultivation and improvement is one of their chief pursuits. Of the Date Palm (*P. dactylifera*) especially may this be said, which besides the great value of its fruit as food, yields in its leaves material for the construction of huts, baskets, walking sticks, &c.; from the fibre surrounding the base of the leaves coarse cloth and ropes are made; houses are built of the wood, an intoxicating drink, "toddy," is made from the sap, and the Date stones are ground into food for camels. It is said that in Southern Europe thousands of acres of land are planted with this Palm to meet the great demand for its leaves on Palm Sunday. They are also used by the Jews for a similar purpose on the Feast of the Passover.



*P. SYLVESTRIS* is a species common all over India, and is supposed to be the wild parent of the Date Palm, to which species it bears a close resemblance. The juice of this plant is the "toddy" of the Indians, and Date sugar is obtained by boiling the juice.

*P. FARINIFERA*, a dwarf species, yields an inferior kind of Sago. There seems to have been some confusion with this plant, as by some authors I find it described as having a stem from 10 ft. to 20 ft. high, whereas the true *farinifera* is almost stemless. It is a most beautiful plant in a young state, and I believe rather rare. It is a native of Cochin China.

From the temperature, latitude, or high elevation at which most of the species of *Phoenix* are found, it may be seen that they are capable of being cultivated in a lower temperature than most Palms require. A warm greenhouse or conservatory, and in some cases a warm position on the lawn or by the side of a path in summer, will be found agreeable to them. In the latter position their graceful habit would render them very attractive. Good seeds soon germinate on a little bottom heat, and if potted in a light loamy soil and kept in a stove for a year or two, good useful plants will be formed. Of course it would not be advisable to place them outside until they have formed strong plants. Rich loam and a little good cow-manure form a compost suited to them. They like plenty of water, and not too much root room. It is surprising how well many Palms will do in small pots if plenty of water and a little stimulant are given them.

**SCALE.**—For destroying scale, to attacks from which all Palms are more or less subject, I use paraffin oil in the proportion of a wineglassful to a gallon of water. With this we syringe the plants, then rub the scales loose with a brush, which may easily be done after the mixture has touched them, and then syringe again. Never dip a plant in this mixture for reasons which will be obvious to those who understand its nature.

I shall not attempt to describe the known species of this genus, as they are so much alike in all important points, that unless one went into a lengthy and tedious description, any account I could give would be worthless as a help to distinguish them. And here let me point out how important it is that care should be taken not to name unknown Palms without complete material. Already great confusion has been caused by neglect of this most important rule. There are many quite distinct genera even of Palms, which in their habits and foliage are absolutely identical. Of the genus *Phoenix* there are about a dozen species, the best of those known being *P. rupicola*, *P. paludosa*, *P. farinifera*, *P. tenuis*, *P. reclinata*, and *P. sylvestris*. Z. B.

#### The Dutchman's Pipe (*Aristolochia Sipho*).

—I noticed a piece of wall the other day, about 200 square ft., covered with the magnificent foliage of this noble climber, very many of the leaves of which measured 1 ft. in length and 10 in. in breadth. The colour, a deep green, was very effective, and no other climbers were near to mar the massive grandeur of the leaves. There are two plants, and no care has been taken of them in the way of mulching or otherwise. They are planted in the natural soil, which is chiefly yellow sand, such as is often used by builders.—C. DENNIS, *Hopedene*.

#### Continuous Flowering Pelargoniums.

—These constitute quite a distinct class—one in which the blossoms are not half the size of those of the ordinary varieties, but they are intensely brilliant, and the plants continue to grow and flower the whole season as freely as the zonal varieties, thereby rendering them very useful for supplying cut flowers. These Pelargoniums have been in England now about ten years, but still are little known—certainly not to the extent their striking colours and free-flowering qualities entitle them to be. Two of the best are Hofgartner Kellermann, a very bright crimson flower, the lower petals of which have an

almost black blotch, and Madame Glevitzky, bright vermilion scarlet.—H. P.

**Pancratium illyricum.**—We had six bulbs of this sent from Holland last autumn. They were potted in turfy peat, with a slight admixture of loam and sand, and placed in an intermediate house. Two potfuls were made of the six bulbs. Only two of the bulbs have made top-growth; one has pushed up leaves about 6 in., and all have rooted well; indeed, the pots (9-in. ones) are well filled with roots; but still the plants do not succeed. Will some of your readers kindly tell me how I should manage them? A. D., *Botley*.

**Momordica balsamina.**—Fruit of this hanging from the roof of a stove in Messrs. Methven's nurseries, Edinburgh, where the plant is trained in wreaths spanning the arch of the roof, is peculiarly effective. It resembles a rough golden bell, furnished with two rows of deep red cherry-like seeds down each of its three divisions. When seven or eight fruit are ripe at the same time, as they were lately, the plant must be singularly attractive. If sown early in spring, the plants last till about December. The foliage is very pretty, but the small yellow flowers are hardly noticeable.—C. M. OWEN.

#### Zephyranthes tubispatha and rosea.

—Some potfuls of these are just now one mass of charming flowers, and for greenhouse decoration at this time of the year they are well adapted, the more so as they succeed without any especial treatment. My bulbs were potted in good soil composed of sandy loam and leaf mould twelve months last spring, and both last year and this they have flowered profusely without being since potted or in any way disturbed. After potting they were kept in a pit till all danger from frost was over; then they were placed out-of-doors till the flowers showed themselves, when they were moved under cover, and after flowering kept moderately dry underneath the stage till spring; then they were turned out as before, and the result has been in every way satisfactory.—H. P.

#### SEASONABLE WORK.

**Plants.**—Where the most forward Camellias, Azaleas, and other greenhouse plants have been placed out-of-doors, the houses should be got ready for their reception before they become drenched by September rains. Soft-wooded Heaths and Epacris hitherto grown in cool, shady situations will be the better for a period of exposure to sun and light before they are taken into their winter quarters. Keep them well supplied with soft water, as the pots will now be full of roots, and dew them over with the syringe after a hot day. Shake out and repot Pelargoniums that have been cut down, pot firmly in rich light soil, and keep them near the glass, where they will not become drawn. Water sparingly at first, and give an abundance of air when they have taken to the soil. Where the excellent system of propagating and planting out such things as Abutilons, Begonias, Haborhamnus, Eupatoriums, Salvias, and a host of other plants which submit so well to this treatment is followed up, preparations must soon be made for lifting and potting up before they are caught by frost. The beautiful Abutilons sent out by Mr. George do well through the summer in open pits, lift well, and flower profusely when taken under glass in the autumn. Cinerarias and Primulas recently placed in their blooming pots must be sparingly watered until they have taken to the new soil; keep them near the glass in pits and dew them over with the syringe on fine afternoons. Stake Chrysanthemums, keep the lower leaves well syringed, and give gentle stimulants when the bloom buds are formed. Tuberoses that have been kept in cold pits or out-of-doors will now enjoy a little warmth where they can have plenty of water and atmospheric moisture. Seeds of Cyclamens may now be sown in shallow pans which should be well drained and filled to within 1 in. of the surface with a mixture of peat, light loam, and sand. Place them in a close pit, and keep moist until they vegetate. At all times keep the young

plants near the glass and prick off as they become large enough to handle. Old bulbs that have been repotted should be kept in a light pit near the glass, and where the lower sides of the leaves can be reached with the syringe, as they are very subject to red spider. W. COLEMAN.

*Eastnor Castle.*

#### "MADE-UP" SPECIMENS.

I HAVE read Mr. H. James' remarks (p. 143) upon this subject, and quite agree with him as to the object of horticultural exhibitions being principally intended to promote and encourage good cultivation. But at the same time I may perhaps be allowed to say that in the case of some Orchids, as well as various other plants which increase laterally, it is exceedingly difficult to ascertain whether the specimens originally consisted of one plant or several, more particularly when such specimens are of considerable dimensions and well established in their pots or baskets. I quite recently saw a well-grown specimen of a fine variety of *Coleus* pulled to pieces, with the consent of its owner, in order to ascertain if it was originally composed of one plant or of several. The former, however, proved to be the case, though without such sacrifice the fact could not have been ascertained. If I may be allowed, however, to slightly deviate from this subject I would suggest to those about to form schedules of prizes that the same cannot be too clearly and explicitly expressed, and I may mention as an instance of deficiency in this respect a case which recently came under my observation. It was that of a provincial horticultural society offering, among other prizes, one for "four plants, fine-foliaged, excluding Ferns." Only two collections were staged, and one of them was exclusively composed of four plants of the almost ubiquitous genus *Coleus*. They were well grown, however, and distinct as to varieties, and to this the judges were necessarily compelled to give the second prize, although no doubt the framers of the schedule never for a moment contemplated that four varieties of one species would ever be likely to be shown for the prize in question. If the words "distinct species" had been inserted the judges would have then been in a position to disqualify the collection. The same society also offers prizes for the best "four stove or greenhouse plants in flower," as well as for collections of such plants as Fuchsias, Pelargoniums, Achimenes, Gloxinias, Ericas, Begonias, Caladiums, &c., so that the plants forming the collection of stove or greenhouse plants is not unusually partially or altogether composed of plants selected from the latter classes, such as the Fuchsia and the Pelargonium, &c., and this does not of course add in the least degree to the variety and general effect of the exhibition. Now, there could be little difficulty in selecting so small a number as four stove or greenhouse plants from species for which no special prizes were offered, and this, of course, might be enforced by adding to the words "four stove or greenhouse plants in flower" the following, viz., "excluding species or varieties for which special prizes are offered." P. GRIEVE.

**A Good Bit of Work.**—After a breach of 1600 years, the aqueduct built by the Emperor Augustus to supply Bologna with water was restored to use June 5. Nineteen hundred years ago the Roman engineers tapped the Setta near its junction with the Reno, about eleven miles from Bologna, and brought its water to the city through an underground passage. They followed the course of the Reno, tunnelling the hills, sinking their work beneath the beds of the precipitous torrents which rush from the mountains into the river, and bringing the waters to the gates of the city, where they were divided, one portion going to supply the public baths, and the other probably destined for the fountains of streets and public squares. The restoration of this important work is due chiefly to Count Gozzadini, who caused an accurate survey of the aqueduct to be made about twenty years ago, and in 1864 published the results of the investigation in an elaborate memoir. Since then the work of restoration has been going on with a thoroughness and skill calculated to make the new work as enduring as the old. The aqueduct was originally made of brick and stone cemented with lime and volcanic sand, and the unbroken portions remained as hard as granite.



# BOOKS.

## SELECT EXTRA-TROPICAL PLANTS.\*

THIS is an interesting book, in which an alphabetical list with sufficient description of each is given of the enormous number of plants that are useful for cultivation in countries somewhat warmer than our own. Dealing with a great country like Australia, in which vast areas are fitted for a class of vegetation which would not exist in our own country, or in Northern or Central Europe, Baron Mueller has very properly made a good selection of plants likely to succeed in such regions. That these regions will grow such plants as the hardier Palms does not make them any less able to grow the Hop or the Apple, at least in many cases; therefore it may be easily imagined how large are the sources upon which Baron Mueller can draw. Unhappily, the climatic conditions of our own country are too well defined to enable us to make much use of this book, but we have no doubt that a large number of persons in extra-tropical and temperate countries would find it a useful one to have on their shelves. The following extracts will show how the different subjects are treated:—

**CARYA OLIVÆFORMIS** (Nuttall).—The Pecanutt tree of North America. A handsome, lofty tree up to 70 ft. high, with a straight trunk. The most rapid-growing of all the Hickories (Meehan). Its wood is coarse-grained, heavy and compact, possessing great strength and durability; in strength and elasticity it surpasses even that of the White Ash (Harrison), and is quite as durable. The Nuts, which are usually abundant, are from 1 in. to 1½ in. long, and are the most delicious of all Walnuts; they form an object of commerce in the Southern States. The tree bears Nuts as far north as Philadelphia. It commences to bear Nuts in about eight years; they should be packed in dry Moss or sand for distant transmission. Although the wood of all the Hickories is not adapted for building purposes, as it is easily attacked by insects and soon decays if exposed to the weather, yet its great strength and elasticity render it extremely useful for implements, articles of furniture, hoops, and many minor uses, besides supplying locally the very best of fuel. Hickories, even when very young, do not well bear transplantation, except perhaps *C. amara*. *C. alba* and *C. glabra* would be particularly recommendable for the sake of their timber, and *C. oliviformis* on account of its fruit. The bark of all the Hickories contains yellow dye principles; by addition of copperas an olive colour is produced; by addition of alum a green colour. Hickory stems are known to attain 12 ft. in girth.

**CORYLUS COLUMNA** (Linné).—The Constantinople Nut tree, the tallest of Hazels, attaining 60 ft. in height, of rather quick growth. This, as well as the European Hazel (*Corylus Avellana*, L.) and the Japan Hazel (*C. heterophylla*, Fischer), might be grown for coppes in forest gullies for their Filberts.

**EMBOTHRUM COCCINEUM** (R. and G. Foster).—From Chili to Magellan's Straits. The Notra or Ciruelillo of Chili. A tree of exquisite beauty, but seldom extending to beyond 30 ft. in height. The wood is utilised for furniture. *E. Janceolatum* is merely a variety (Dr. Philippi). The equally gorgeous *E. emarginatum* of the Peruvian Andes and *E. Wickhami* from Mount Bellenden-Ker, of North Queensland, deserve, with the East Australian allied *Stenocarpus sinuatus*, a place in any sheltered gardens or parks of the warm temperate zone.

**EUCALYPTUS GUNNI** (J. Hooker).—Victoria, Tasmania, and New South Wales, ascending alpine elevations. In the lowland along fertile valleys

it attains a considerable size and supplies a strong useful timber. It is here mostly known as Swamp Gum tree, the mountain variety in Tasmania as Cider tree. Timber found by us here almost equal in strength to that of *E. macrorrhyncha*, *E. rostrata*, and *E. globulus*. The other very hardy Eucalypts comprise *E. pauciflora*, *E. alpina*, *E. urnigera*, *E. coccifera*, and *E. vernicosa*, which all reach heights covered with snow for several months in the year.

**NUPHAR MULTISEPALA** (Engelmann).—Western North America. This Water Lily produces nutritious seeds, which taste like Broom Corn, and are used locally for food, but are more particularly valuable for waterfowl. Various species of *Nymphæa* might be utilised in the same manner, irrespective of their value as decorative lake or pond plants.

**OPUNTIA COCCINELLIFERA** (Miller).—Mexico and West India. The Cochineal Cactus. On this and *O. Tuna*, *O. Hernandezi*, and perhaps a few others, subsists the Cochineal, which offers the costly cochineal dye. Three gatherings can be effected in the year. About 1200 tons used to be imported annually into Britain alone, and a good deal also to other countries, valued at about £400 for the ton. The precious carmine pigment is prepared from cochineal. Different Cochineal *Opuntias* occur also in Argentina. Some species of *Opuntia* will endure a temperature of 14° F. One even advances to 50° north latitude in Canada. Mr. Dickinson, of Port Arlington, Victoria, observes that many species are hardy in his neighbourhood, growing even in sand, overtopping by 10 ft. the *Leptospermum laevigatum* and breaking it down by their great weight within a few yards of the sea.

**PLATANUS OCCIDENTALIS** (Linné).—The true Plane tree of the east part of North America, also known as Buttonwood. More eligible as an avenue tree than as a timber tree. Height to 100 ft. Diameter of stem at times 14 ft. Wood dull red, light, not readily attacked by insects; used in the manufacture of pianofortes and harps; cuts into very good screws, also presses, dairy utensils, windlasses, wheels, and blocks. The young wood is silky white and often handsomely mottled (Robb). The tree likes alluvial river banks and has been successfully planted in morassy places, to cope with miasmatic effluvia.

**PLATANUS ORIENTALIS** (Linné).—The Plane tree of South Europe and Middle Asia. One of the grandest trees for lining roads and for street-planting, deciduous like the other Planes, rather quick of growth, and not requiring much water. Attains a height of 90 ft. It resists, in large towns such as London, the smoke better than any other tree, growing vigorously even under such disadvantage. It is of several centuries longevity. The wood is well adapted for furniture and other kinds of cabinet work.

**PLATANUS RACEMOSA** (Nuttall).—The Californian Plane tree. A good promenade tree, which, according to Prof. Bolander, grows more rapidly and more compact than *P. occidentalis*. Height to 100 ft. Wood harder and thus more durable than that of *P. occidentalis*, also less liable to warp. According to Dr. Gibbons, the tree attains a height of 100 ft. and a diameter of 8 ft.; the wood is very brittle; in use, however, by turners.

“WHERE TO FIND FERNS” is the question which Mr. F. G. Heath will answer in a little holiday pocket volume under that title, to be published shortly by Messrs. Sampson Low, Marston, & Co.

THE many friends of the late Miss Frances Hope will be glad to know that the various articles and notes which she wrote on horticultural matters are edited by Miss Ann J. Hope Johnstone, and published under the title of “Notes and Thoughts on Gardens and Woodlands,” by Macmillan. She was a thoroughly practical gardener, and to her many friends these souvenirs of her will be very welcome

## MONEY IN THE GARDEN.\*

QUINN'S “Money in the Garden” is a book mainly on vegetable culture as practised around New York, where it is very successfully carried out. Mr. Quinn is a good market gardener himself, and, therefore, well able to advise on this subject. The market gardening around New York is well carried out. Mr. Quinn informs us that the methods of labour are much more economical there than in the market gardens about London, and that the work actually done is far greater in amount. He has paid repeated visits to this country and taken notice of the labour done by each man. In America, from a variety of causes which we need not enumerate, there have been gradually growing up labour-saving machines and appliances in almost every department of human activity, and in the garden and farm largely also. With these appliances a habit of working very hard falls to the lot of the labourer who, paid by the piece or the day, is certainly expected to do a good deal more work than he does here. Whether this is desirable or not is another question, and we fancy the men in the London market gardens work as much as is good for them, but Mr. Quinn says they do not do nearly so much as their fellows do in those of New York. Mr. Quinn tells us, as an example of the great difference in the material for doing the work that the plough used here is more than three times as heavy as the one he finds perfectly fitted to do his heaviest work. To show the style in which the different subjects are treated we select that on

**Asparagus.**—The Asparagus is a hardy perennial, that, under proper management, when planted in the right kind of soil, will produce annual crops for an indefinite length of time. When well grown and carefully bunched it is sure to meet with a ready sale. The demand for it has always been good, even when other vegetables were dull and selling at low prices. From year to year one hears the same question asked by the consumers of Asparagus, Why is it that this vegetable is not more generally cultivated? The area devoted to its culture has been increased very much, but not enough to keep pace with the likewise growing demand. During the last twenty years I have been engaged, more or less each year, in raising vegetables for market, and at different times I have known each and every kind of vegetable, grown to any extent for market, become a “drug,” with the single exception of Asparagus, which, thus far, has always been in good demand, and that, too, at paying prices. There are few persons who have been engaged on an extensive scale in “trucking” who have not been compelled, in “bad seasons,” to sell a part or the whole of a crop for less money than it cost to produce it. This would apply to the whole list of vegetables, leaving out Asparagus, which, during such dull seasons and poor markets, is generally made use of by those who grow it to work off other kinds of vegetables—that is, in case a greengrocer wants two or more dozen of Asparagus; to get it he would be obliged to buy a portion of whatever the grower had in his waggon at the time. In this way the gardener who had an abundance of Asparagus would not lose as much in the sale of his crops in dull seasons as he who was not so situated. Within the past ten years more attention has been given to the culture of Asparagus. It is not rare now to find fields of from two to seven acres, in different sections, devoted to Asparagus for the New York and other large markets. Some of these new plantations have already begun to yield well, and yet prices are not in the least affected; on the contrary, they have advanced. Growers estimated the yield during the past season to have been above an average one, and still prices ranged higher than they have for many

\* “Select Extra-Tropical Plants,” readily eligible for industrial culture or naturalisation, by Baron Ferd. Von Mueller, K.C.M.G., M.D., Ph.D., F.R.S. Sydney: Thomas Richards, Government Printer.

\* “Money in the Garden.” By P. T. Quinn. New York Orange Judd Company, 245, Broadway.



years. This condition of matters is quite encouraging for those who have young beds, or are about to embark in this branch of gardening with a view to profit. To be successful in the culture of Asparagus for market there are a few essential points to be fully considered and carried out before any reasonable hopes of success can be entertained. The first is a selection of the most suitable soil and situation; the second, a thorough mechanical preparation of the soil before planting, and the third, heavy manuring. The location of the bed is highly important. When Asparagus first comes into market it sells briskly at from five to eight dollars per dozen bunches, and frequently as high as twelve dollars per dozen, if the heads are large and the bunches carefully made. From these prices it gradually falls, as the supply increases, until it reaches two dollars per dozen. Below this price it very seldom goes, although at one dollar and fifty cents per dozen Asparagus will pay a handsome profit. When the soil has only been indifferently prepared and poorly manured, earliness of the crop and large-sized heads cannot be expected, and, as a matter of course, under such circumstances, large profits are not realised by the producer.

**SOWING THE SEED.**—Asparagus seed should be sown in the spring in a bed made deep, mellow, and rich. When the surface of such a bed has been raked over, removing any stones or other obstructions, shallow drills should be opened, about 1 in. deep and 1 ft. apart. The seed must be strewn thinly, by hand, in these drills, and then covered by raking the bed with wooden rakes, drawing them in the direction of the drills. In favourable weather fresh seed will sprout in two weeks from the time of sowing. Seed older than one year will take longer to germinate, and, if more than three years old, it is unsafe to sow it; there is no prospect of its ever germinating. In case the seed is older than one year, soaking it in milk twenty-four hours before sowing will cause it to germinate sooner. It is a good plan to scatter some Radish seed in the drills at the time of sowing the Asparagus seed. The Radish will germinate and come up in a few days from the time of sowing, marking the lines of the rows. This will give a chance to run a scuffle-hoe between the rows, destroying any weeds that may have appeared, and keeping the surface loose until the Asparagus plants are well up. Then the spaces between the rows should be disturbed frequently, and no weeds or grass allowed to grow. Well-grown one-year-old plants will be strong enough for transplanting into the permanent bed. If the plants are weak, it is better to let them remain in the seed-bed another season. Plants older than two years should not be set out; it is more than probable they will fail to give satisfactory results. Those who want only a few hundred plants to make a family bed, will find it cheaper to buy them from some responsible person than to attempt to raise them from the seed. One pound of good fresh seed will sow a bed 20 x 100 ft., and give from 12,000 to 15,000 plants.

**PREPARING THE GROUND.**—Asparagus will succeed best on a deep, sandy loam that is rich and mellow. There should be no short-sighted economy practised in preparing the ground for an Asparagus-bed. All the outlay for labour and manure, judiciously laid out in making the bed, will be returned to the owner, with a high rate of interest within the next ten years. If the ground selected is naturally wet, or likely to become so, then by all means have it thoroughly underdrained. Asparagus can only be grown to the highest point of profit on soil that is free from stagnant water, thoroughly pulverised to a depth of at least 20 in. to 22 in., and then heavily manured. There will be more satisfaction from planting only a quarter of an acre on this thorough scale than in planting an acre under indifferent preparation and poor manuring. The ground should be thoroughly ploughed and sub-soiled both ways, and then plenty of well-rotted yard manure ploughed under. The more manure that is applied, the more productive the yield will be when the plants are fairly

established. Barn-yard manure, composted with the salt and lime, will be found an excellent manure for Asparagus. In garden-culture the ground selected should be forked over to the same depth, and plenty of manure added before planting. Ground in "good heart," with an application of from forty to fifty two-horse loads of manure to the acre, will produce paying crops. A dressing of fifteen or twenty bushels of salt to the acre, before setting the plants, will be found of service.

**PLANTING.**—It has long been a mooted question whether autumn or spring is the best time to plant an Asparagus bed. In most cases more will depend on the condition and tilth of the soil than on the time of setting out the roots. Where the soil is heavy and retentive of moisture, and the winters long and severe, undoubtedly the spring is the best time. But on sandy or clay loam, and as far south as Delaware or Virginia, autumn planting will do just as well, and often better than spring-planting, under similar circumstances. When the ground has been prepared by frequent ploughings and sub-soilings for field culture, or the garden spot thoroughly trenched with the spade or digging-fork, then open furrows 10 in. or 12 in. deep, 4 ft. apart one way and 2 ft. the other. When the bottoms of the furrows are levelled, they should not be more than 9 in. deep. A single plant is set at each intersection, care being taken that each root of the plant is drawn out horizontally to its full length. At this distance apart there will be about 5500 plants to an acre, and 200 plants will be abundant to supply a family of six persons. When set out in the spring, the crowns of the plants should not be covered more than 3 in. This light covering at first, or until the plants have started to grow, is the safest plan to follow. When the young shoots are 3 in. or 4 in. above the surface, run a cultivator between the rows; the loose earth will fall towards the plants, adding a few more inches of covering above the crowns, so that by the end of the first summer the surface will be quite level. When the Asparagus is planted in autumn, the plants will have to be covered full depth at once; if not, they will be in some danger from the snow and water settling over the crowns, and then freezing. In garden culture the second covering may be drawn over the roots by the hand-hoe any time during the summer. A cultivator should be kept going between the rows often enough to prevent the growth of weeds in the bed. This will be found the cheapest method of culture. When planted in autumn, the rows should have a light mulch of farm-yard manure put on in November and in the spring following, this mulch, with an additional quantity of manure, either guano, bone-dust, or superphosphate, should be turned under early in April, or as soon as the ground is dry enough to be worked. Annual dressings of common salt will improve the quality and increase the size of Asparagus. There need be no apprehension of danger from the application of salt. I have frequently put on as much as 2 in. in thickness on different parts of an Asparagus bed, and the young plants have come through this coating of salt without any apparent injury. A dressing of 25 bushels or 30 bushels of salt to the acre every second year will be quite enough, in connection with the annual covering of farm-yard manure or compost to be applied in autumn or spring, as circumstances may dictate. No Asparagus should be cut from the bed the first or second year. Some growers go so far as not to cut any until the fourth year from the time of planting. If the plants have grown vigorously, a crop may be cut without at all injuring the plantation the third year. The amount that may safely be taken off at this time depends altogether on the condition and vigour of the plants. In case they are weak, it would be poor policy to weaken them still more by cutting for market or home consumption too soon. In the autumn of the first year it is a good plan to throw shallow furrows from either side towards the rows, and then round them off with a hoe or rake. This slightly elevated ridge

will dry out sooner in the spring than a flat surface; and Asparagus, treated in this way, will often make a difference in earliness of five or six days, which is an important item to those who grow it for market. Early Asparagus always brings a much higher price than that which comes in late in the season. Therefore every advantage from location, character of soil and treatment, must be taken into consideration by those who cultivate for profit. When the plants are set so that they have about 9 in. of covering at the end of the third year from the time of planting, the crowns will be within 7 in. of the surface. At this depth the beds may be ploughed with a one-horse plough in the spring, and the spaces between the rows kept clean by a cultivator during the rest of the season. In garden culture the "crowns" need only be covered 4 in. or 5 in. This will save considerable in the labour of working an Asparagus bed over the old method of digging the whole surface every spring, and doing most of the work with the hand-hoe during the summer.

**VARIETIES.**—Until quite recently there were only two varieties generally cultivated for market purposes—the green and the purple-topped. The identity of these two has been frequently maintained by many intelligent gardeners, who attribute the differences in size and colour to location, soil, and heavy or light manuring. There is no doubt in my mind about these two being distinct varieties, and that they will show their peculiarities when grown on the same ground and under the same treatment. With heavy manuring the size can be increased very decidedly, but high culture does not change the colour of either. Two years ago Mr. Conover, of New York, introduced a new variety of Asparagus under the name of Conover's Colossal. For this variety Mr. Conover claimed superior qualities to either of the two varieties known and cultivated by market gardeners. The heads of this variety were said to be of extraordinary size, of tender and good quality when cooked, and for field or garden culture equally if not more productive than the green or purple-topped varieties. This claim had to be substantiated by practical growers before discarding old and tried kinds for new and untried ones. Many doubted its being any other than what was cultivated on Long Island and in other Asparagus-producing sections. I have for two years experimented with the Colossal, and I am fully convinced that it is a new variety here, possessing many characteristics that will make it a valuable acquisition to our list of vegetables. Plants only one year old will average larger than plants two years old, of the other varieties, when grown on the same soil and under the same treatment. Formerly, in making an Asparagus-bed, the plants were set too near together. With the Colossal, 4 ft. by 2 ft. will be found better than close planting. Even with the green or purple-top, 3 ft. by 2 ft. will be found, at the end of five years, to produce more to the acre than if set 9 in. in the row and 18 in. between the rows.

**CUTTING AND BUNCHING.** Cutting Asparagus intelligently is one of the nice jobs in gardening that cannot, without careful instructions, be delegated to Tom, Dick, or Harry. A careless use of the knife often spoils more stocks just under the surface than there are heads fit for use above. The time to cut is before the head of the Asparagus branches out and loses its compact form, when the heads are from 6 in. to 8 in. long. The knife must be kept sharp. It should be of a certain shape. The blade should be broad, and about 8 in. long; most of the cutting has to be done by the point of the knife. It should be run down, almost perpendicularly, alongside of the head, which should be obliquely about 2 in. below the surface. By this method very few, if any, of the young shoots are injured by the point of the knife. When the bed is three years old, or the third year from the time of planting, it may be cut regularly each year; not later, however, than the middle of June in the Northern States. After this date the heads should be allowed to run to seed. Where Asparagus is cultivated for market, bunching and



tying are another part of the business that requires skill and practice. The bunches, to look well, must be of uniform size and length. Sometimes a grower cannot send the Asparagus to market every day, but he is compelled to keep it for three or four days. By placing the bunches in pure cold water, and then covering them, they may be kept four or five days, and when taken out they will look as fresh as if just cut. Or if, when cut, before bunching, the heads are thrown on the cellar-floor, and, when bunched, placed in cold water for a few hours, each head will swell out and look fresh. A few years ago white Asparagus was in demand, but lately there has been little call for it. However, any one can have white Asparagus by keeping the light away from it while growing. This can be most cheaply done by covering the bed thickly, about the 1st of April, with a coating of salt hay or long manure, 8 in. or 9 in. deep. Before cutting the Asparagus the litter is moved one side and then replaced.

**PROFITS.**—The annual returns from an acre of Asparagus depend so much on the character of the soil and the treatment it receives, that it is difficult to state the exact amount. Some growers, favourably located, make from six to seven hundred dollars a year profit. This is much more than is realised by most growers. Taking one year with another, a well-kept Asparagus bed will yield four hundred and fifty dollars per acre profit. Since the close of the late war large plantations of Asparagus have been made in certain localities of the Southern States. This Asparagus will find its way to the Northern markets, and, owing to the natural advantages of climate, its early appearance will affect the profits of Northern growers. Asparagus can be shipped from Southern ports with but little risk of injury, even if several days should elapse before it reaches its destination. Open crates the same kind as those now used by Peach growers will answer for shipping Asparagus to Northern markets.

**INSECTS.**—Within the last ten years Asparagus growers have had serious cause for alarm, by the introduction of an insect from Europe. The *Crioceris asparagi* has been doing a great deal of damage on Long Island and in the Asparagus-producing districts of New Jersey. This insect made its appearance about 1860. Since that time it has multiplied so fast, that, unless some effectual means is discovered to check its ravages, Asparagus-growing will be rendered unprofitable in some localities where now it is grown on a large scale. The eggs of this insect are oblong. They are placed on the plant by one end, one egg being sometimes attached to the end of another. They hatch in about eight days. The larva is very slow in its movements, and feeds on Asparagus, eating holes through the bark; when disturbed it ejects a noisome liquid from its mouth, and does much injury to the plant. The pupæ are formed under fallen leaves and rubbish on the earth. The insect appears in about thirty days from the period of laying the egg; it hibernates under the bark of trees, Moss, Lichens, old rails, &c. The best remedy that is yet known is to dust the plants with fresh air-slaked lime on beds one and two years planted. On young beds the insects do most damage. With bearing-beds, by allowing the thin shoots to remain uncut, the larva collects on them and does not injure the larger saleable heads. By going through the bed once a day with a basin of hot water, thousands can be shaken into the water and destroyed. This will, in many cases, check their depredations. Fine bone-meal has been tried by some growers with satisfactory results. This dusting can only be done with young beds, or thin heads on old beds; for if put on heads intended for table-use, the Asparagus will taste of the lime or bone. The thin shoots can be cut off occasionally and burned, destroying what are collected on them.

**Asparagus Culture.**—This little book, which has long been out of print, is now ready.

It contains, in addition to the essay on Asparagus culture, as published in England and France, a translation of M. Lebeuf's article on Asparagus and particulars of the seven years' competition instituted for its improvement. It may be obtained at our office and through all booksellers.

#### BOOKS RECEIVED.

*Some Talk about Pears and Pear Trees.* By J. C. Barnham, being a paper read before the Highbury Horticultural Society.

*Illustrated British Bee-keeper's Guide Book.* By T. W. Cowan. Houlston & Sons, Paternoster Square.

*List of Madagascan Ferns.* By W. D. Cowan.

*Ireland in 1881.* By John Boyd Kinnear. Smith, Elder & Co.

### THE KITCHEN GARDEN.

#### AUTUMN SOWN CABBAGES.

In all large gardens the sowing of Cabbage seed in autumn is an operation of considerable importance, but in the gardens of many amateurs no Cabbage seeds are sown at this time, or if they are sown at all it is generally too early or too late; hence the reason of so much scarcity of Cabbage early in spring with the class to which I refer. Than well grown early Cabbage there is no better vegetable, and even many who object to eating Cabbage at the present time relish them greatly early in the spring. All who have to supply vegetables largely from March onwards will find nothing so useful as a good supply of Cabbage. Any kind which will do well as a general all-the-year-round Cabbage will do for sowing for early spring use. Early York is about the worst through its bolting to flower prematurely, while Redbraes, Pearson's Conqueror, and Carter's Heartwell are very long in doing this, and are consequently good sorts for sowing now. In all parts of the country a sowing of Cabbage seed may safely be made on some of the last days in July, and again about the middle of August. Seed sown before the first of these times will produce, as a rule, plants too forward to stand the winter well, and plants from a later sowing than the middle of August are almost certain to be too small to bear the winter well, and very late in becoming ready for use in spring. Medium-sized plants are the kind I like to see about the new year, as I have found from experience that they hardly ever fail to come right when wanted. In sowing I prefer the drill plan to the broad-cast system, as the plants, if the seed is sown thin, are not so much injured from overcrowding in drills as in the other way. The drills may be 5 in. or 6 in. apart and about 2 in. deep. If the soil is very dry, water thoroughly before sowing, and cover over with soil slightly moist. In August weather the plants appear quickly and grow fast, and care must be taken that they do not become long, drawn-up objects before the strongest and earliest of them are planted out, as it is chiefly in keeping them dwarf and robust that we can depend on them passing through the winter uninjured. As soon as the plants are seen 1 in. or 2 in. above the ground, fresh quarters should be got ready for them. In this respect they are not very particular. Any open piece of ground will grow them well if it is rich enough. Well manured land is that in which they delight and this and a well chosen sort sown at the right time are the main points to be adhered to in order to insure a perfect crop of the finest spring Cabbage. Without attending particularly to these three rules nothing but failure need be expected, and to one or all of the three causes may generally be assigned the failure of autumn-sown Cabbage. Heavy land and light land will both produce fine heads with the assistance of good manure. It depends a good deal on the weather when the plants in the seed bed will be ready for

**Transplanting.**—The early sown ones are generally large enough for this by the end of August or early in September, and this

is a good time to plant. I have not yet seen my way to plant autumn Cabbage on ground not prepared from the time the previous crop was removed. Some adopt the old-fashioned plan of digging the ground before planting, a plan which I would recommend. We often dig and plant as we go on, and this is an excellent way in dry weather, as the roots are placed in the soil before it dries after being turned up—a great help to them. In the seed bed they are generally grown too close together to admit of a trowel being used to lift them with a ball, but the roots can be eased up with a fork and the plants taken up with as much soil attached and the roots as entire as possible. Many look on Cabbage and other things as being too common to spend time on trying to save the roots or shifting them carefully; but this is a mistake, as they pay for such attention as well or better even than any other plants.

One ft., 15 in., and 18 in. are all distances at which they may be planted according to the variety used. In planting draw out small shallow drills, and in these the plants should be dibbled. In drills they receive a little protection from drought, wind, or any extremity of weather, and as they grow the soil will gradually settle about the stems and become firm. Further than this little or no more earthing up should be given until spring, when the soil may be firm and hard on the surface and may require forking up before earthing. In some seasons we have had spring Cabbage grow nearly all winter, and at other times they have never moved from the end of October until March, so that it cannot be predicted what the plants will be at mid-winter, but they should be showing well up with from eight to a dozen leaves in October. I have known growers much pleased with the large size of their autumn-sown Cabbages about Christmas, but by Easter a different impression was formed, as large, early plants are generally more affected by severe weather in February and March than small sturdy ones.

**In the Seed Beds** it will be observed that some of the plants grow much quicker than others, and while some are ready for planting in a remarkable short time after sowing, others remain quite small. In such cases the large ones should be drawn out from amongst the small ones, and the latter allowed to remain in the seed bed all the winter, when they will prove useful for planting out in spring both in making up blanks and in fresh quarters to succeed those planted in autumn. CAMBRIAN.

#### FINOCHIO.

IN THE GARDEN (p. 148) "Welshman" makes some enquiries about Fenchio, and as numbers of applications have been made at seed shops for it by those who have eaten it in Italy and France, a few remarks concerning it may not be out of place. It was formerly looked upon as a variety of the common Fennel, but it is now generally considered to be a distinct species. Though well known by writers on gardening in the early part of the present century, I have no recollection of ever seeing it offered in any English seed catalogue, but the seed may easily be procured through any respectable house in the trade at about 1s. per oz. There are three kinds of Fennel offered in most Continental catalogues, viz., *Fenouil amer* (*Feniculum vulgare*), *F. doux* (*F. officinale*), and *F. de Florence* (*F. dulce*), the last-named being the true Fenchio. Being an annual, it is easiest grown from seed, but shoots of it can also be planted in summer, and may be kept through the winter protected from frost. Such shoots are made strong by being cut back while growing. The seed may be sown in spring in light soil in drills, or thinly broadcast, and the seedlings transplanted about 1 ft. apart. When the stems swell to a fair thickness they should be



earthed up about 6 in. to blanch like Celery. Thus treated, in about a fortnight they will be tender and ready for use. By successive sowings or cutting down they may be had in use from early in autumn to Christmas. If allowed to run to seed the succulency and crispness will be very much deteriorated. In addition to the usual mode of cooking, Fenchio is eaten raw as salad, with oil and vinegar. Fenchio marino (*Crithmum maritimum*), the Samphire of our sea cliffs, is also much used in Italy. It forms an excellent pickle, and is often used as an ingredient in salads. Gobbo, another common article of diet in Italy, is the blanched footstalks of the lowermost leaves of the Globe Artichoke, and is more extensively used there than the head, which we only prize.

J. M.

237, High Holborn.

### LETTUCES.

EVERY one knows how difficult it is to keep up a supply of good crisp Lettuces during the summer months, as when the weather is hot and dry they "bolt," or if they do not do that they are often tough or bitter, the result of slow growth. What affects summer Lettuces injuriously more than anything else is the loss of the tap-root, caused by pulling up the plants and transplanting, which is a bad practice, as they are not only greatly checked at the time, but they are never able to provide and take care of themselves so well afterwards. Instead of sowing in beds, as is generally done, the best way is to draw shallow drills and sow in them, and when the plants are up, to thin out, leaving them about 10 in. or 1 ft. apart, when, if kept well watered or soaked occasionally with liquid manure, their progress will be rapid, and they will be found to form solid and firm hearts. To have them large and succulent, the ground must be rich and deeply dug; and as Lettuces like a little shade, it is a good plan at this season to sow on a north-east or west border, or between rows of Peas that are wide apart, but a little later on the best place for Lettuces is between Celery trenches, as there they are fully exposed to the air during the autumn, and the soil being deep, they always do well. The finest kind of Lettuce for summer and early autumn use is the Paris White Cos, which, though not so large as some others, is a sweet, good flavoured sort, and turns in of itself without any tying. For winter and spring there are none equal to the old Bath Cos and Hick's Hardy Green, both of which stand frost without injury, and make a fine salad. These last named may be sown on beds about the middle of August, and when up, the most forward plants should be planted in highly manured ground in a warm sunny spot, to grow for lifting to place in cold frames at the end of October or middle of November, and the next forward should be planted on a south border, and under the foot of walls having the same aspect, where they will stand the winter and come on for use very early in spring.

S. D.

**Pride of America Potato.**—We have received specimens of this new Potato from Mr. Gilbert, of Burghley, which, when cooked, proved to be floury and good. It is a cross between Eureka and White Peach Blow, and in general appearance closely resembles Snowflake.

**Cauliflowers in August.**—We have now plenty of Veitch's Autumn Giant as white and close as spring Cauliflowers, and they have never had a drop of water since they were planted last April. The seeds were sown in a box last December, and placed in a house where there was always a little warmth. They were moved on as required, always kept near the glass, and finally hardened off and planted on well-worked land, first drawing rather deep drills and planting therein. They have never been earthed up in the ordinary sense of the word, but hoeing down the sides of the drills has virtually covered up the lower part of the stem and given them a firmer grasp of the

soil without raising a ridge about them to throw off the passing showers.—E. H.

**Anglo-American Potatoes.**—The first genuine crosses of the new Anglo-American breed of Potatoes have been subjected to public trial at Chiswick this year and have come out remarkably well, so well in fact that they seem to distance all the other American and English kinds that have no cross breeding about them. The Messrs. Sutton & Sons, having secured several of Mr. Fenn's best new Anglo-Americans, sent up some of them for trial, and no doubt when the fruit committee next meet attention will be directed to them. The parentage of these kinds were chiefly Red Kidney Bountiful, American Late Rose, Snowflake, and Willard. The product was more white than coloured kinds, and though some beautiful coloured sorts have been selected, the most prominent are white rounds or flattish rounds, handsome, immense croppers, and of first class table quality. Mr. Fenn having given us some beautiful garden sorts, has now striven to

### SEASONABLE WORK.

**Kitchen Garden.**—Where the mulching of Peas, Beans, and other moisture-loving crops of vegetables was closely followed up through the dry weather, the fine rains we have recently had will have stimulated the roots to an extent that will keep them growing until the crops are matured. In many gardens where a plentiful supply of water is laid on mulching is sometimes neglected, but it is a great mistake, as a moderate covering of stable litter, at this season of little value for other purposes, gives off ammonia, keeps in moisture, and produces a vigorous growth that cannot be attained without it. If not already sown, the different kinds of Onions intended to stand the winter should be got in. Giant Rocca, Tripoli, and White Italian do best for this purpose, and the last named, which is very early, owing to its delicate colour, is always a great favourite in the kitchen. A rich warm border well dressed with soot and thin seeding are important points that should not be overlooked. Continue



The Double flowering Cherry.

obtain some that will have a reputation for market work, and these new kinds seem eminently suited for that purpose. Cosmopolitan, one of the kinds recently certificated at Chiswick, is an Anglo-American product of a cross between the American Success and Woodstock Kidney. It proved at Chiswick to be as early as the Ashleaf, a heavy cropper, and when cooked of the finest quality. Lord Mayor, a Regent-like round, which the committee regarded with much favour, is the product of a cross between the Early Rose and Early Market, so that the American parentage is making its mark. Several other fine kinds are yet in stock from these crosses, but will be well tested before being sent out. We have plenty of inferior Potatoes in commerce, and those new ones which now come need have reputations that time and trial will sustain. It is to be deplored that American sorts were not used for hybridising purposes much sooner. Had that been the case we should long since have possessed many superior kinds of Potatoes, as what is now being done testifies.—A. D.

**Pumpkins not Bearing.**—Two giant Pumpkins grow by the side of Vegetable Marrows on a heap of rotten manure and loam. The Marrows are bearing abundantly, but the Pumpkins, though making enormous growth, produce only male flowers, both on the main stem and laterals. Can anyone suggest a reason for this?—P.

to make thin sowings of the hardy kinds of Lettuce, including the old Bath Cos, to stand through the winter; also the broad-leaved kinds of Endive on any poor border for spring use. Take up Onions as they become fit, also early and second early Potatoes, and if not wanted for other crops sow the ground with Veitch's Red Globe Turnip for coming in after Christmas. Commence earthing the main crops of Celery before the moisture escapes from the trenches, and carefully observe to leave the surface level after each earthing. If slugs and worms are troublesome, a mixture of quicklime and soot dusted along the sides will keep them in check and stimulate the crop. On or about the 29th, the general stock of Cauliflowers should be sown for pricking out in frames and under walls. Cauliflowers, like all other vegetables, are becoming too numerous, and we sometimes meet with old friends under new names, but such kinds as Frogmore and Veitch's Early Forcing, Early London, and Walcheren are always reliable. In warm gardens it is usual to sow on a south border, but in cold localities a cold pit or spent Cucumber bed affords a more suitable seed bed. In all cases the seeds should be sown thin, and after they have germinated the lights should be thrown off until we have cold,



wet, or severe weather. By cool treatment the plants are kept dwarf and sturdy.

**Cucumbers.**—Two sowings of Cucumbers should be made this month—the first to succeed Melons now occupying the winter house, and the second to take up the succession. A two-light frame placed on a manure bed is the best place for raising stout, healthy plants for winter use, as they can be grown and properly treated with full exposure to light, and shifted on into large pots until their fruiting quarters are ready. Cuttings from a good clean strain make equally good and perhaps more fruitful plants, but they require a strong, moist bottom heat of at least 90° to strike them well. In either case the young plants should be grown in fresh virgin loam, to which crushed bones, lime rubble, or charcoal, in preference to animal manure, may be added. The leading shoots should be stopped until they have filled two-thirds of the trellis, and strict cleanliness should be insured by thoroughly cleansing and scalding the pits and lights before the plants are introduced. Old plants in manure frames may still be cut over, top-dressed with turfy loam and leaf mould, and kept close. The renovation of old linings and covering with mats at night will keep them in a healthy bearing state until the August seedlings come into use.

**Forcing Department.**—Make up Mushroom beds as manure can be obtained. Little and often is the best plan, where a steady family supply is required. Use plenty of dry fresh loam with the manure, beat very firm, and insert the spawn when the temperature descends to 80°. In old Mushroom houses, where woodlice and snails are troublesome their depredations may be prevented by placing a trellis, made of light laths, 4 in. above the bed and covering with mats instead of hay—a material which harbours the enemy and soon clogs the surface with filth. As pits and frames become vacant they should be cleared out and got ready for the reception of early autumn Lettuce, Endive, and Cauliflowers. A good sowing of French Beans in pots and plunged in a gentle bottom heat will come in useful after outdoor crops are cut off by frost. French Beans require plenty of light and air, hence the importance of sowing thin and keeping them near the glass. Tomatoes now swelling off crops of fruit should be divested of all lateral growths and a few of the old leaves where there is danger of damping. Give water early and keep up a circulation of dry warm air.

Eastnor Castle.

W. COLEMAN,

## TREES AND SHRUBS.

### ANCIENT YEW IN HAYLING ISLAND.

On the south side of Hayling Church, near the porch, an old Yew tree affords a curious example of the rejuvenating power which Yews possess beyond all other trees. According to a not uncommon, but quite unfair, method of measuring the circumference of trees, this ancient specimen is 33 ft.—that is, if you take in both old and new, measure the yawning gap in the trunk, include a portion of the bole which broke off some centuries ago and has since been replaced by a buttress of new wood, you will encircle altogether about 33 ft. But the actual measurement of this venerable tree at its prime was not so much, though it must have been very great. On entering the hollow trunk you find yourself half encircled by the rugged shell which alone remains of the original tree, and which is still furnished with sufficient living bark and young wood to feed and support a large and leafy head of branches. I have used the word “furnished” for want of a better, and in passing round the trunk and examining it closely you find that the dead shell is quite distinct from its outer coat. The dead part is seen in a few places only, and is generally quite encased in a covering of living

bark and wood, which seems altogether separate from the underneath part, bearing only the same relation to it that the coat does to the vest.

The power of the Yew in producing new bark and young wood, filming over a really rotten trunk and entirely rejuvenating an old tree, is greater even than in the case of the Oak or Apple. The new growth, commencing in some spot upon the trunk where life still remains, spreads from that nucleus and gradually extends itself, sometimes in the form of new bark, sometimes as a rougher covering, which envelops the trunk with thick spray. Old Yews could be mentioned which owe to this kind of renewal their aspect of youth, the spray upon their trunks hiding the gaps through which the ruin may be discovered. A separate stem of doubtful origin now springs from the centre of the hollow in the Hayling Yew, but whether it grew from a seed or from a sucker of the old tree, it would not be easy to decide. It is, to all appearance, the child of the old tree and the parent of the outer case of bark and wood which now envelops it, as just described. The young tree, entirely isolated at bottom and for many feet upwards, is united with the old Yew's living envelope at the crown, and forms one growth with it. The whole structure is that of a gigantic tree ruined once and dead, and now alive again, though the exact method of its rejuvenescence can hardly be traced.

The central and separate trunk has not only assisted the old tree as a prop, but it has conferred upon it much of its grandeur of appearance. It runs up about 50 ft. in height and carries several heavy branches, as well as limbs springing from the crown. The circumference of one great limb, which looks like a second trunk and carries a load of smaller branches, reaches 9 ft. The head of the tree is heavy with spray and leaf. The living branches spread over a diameter of 60 ft. The whole tree, new and old, shell and living substances, leans heavily, and must have always leaned from the south-west, like other sea-side trees in this locality, from the effect of the prevailing winds. It is a matter of regret that a tree so appropriate, so beautiful, so long-lived as the Yew should not be more frequently planted in churchyards, where there are few young trees coming on to replace the old ones, tottering dotards as they often are, and not likely to last “for ever,” though they have endured long. In this churchyard, however, there are at least a score of Yews. H. E.

### DOUBLE-FLOWERED CHERRIES.

Of the numerous trees and shrubs that adorn our gardens in spring and early summer by their blossoms, the double-flowered Cherry is one of the most valuable, for nothing could be more chastely beautiful than the long snowy white wreaths with which the tree is crowded from top to bottom. There are two or three kinds, but the best is the one of which the accompanying is an illustration. In the blossoms of this, the stamens are all changed into petals, which form a compact rosette. The semi-double variety, though less beautiful, possesses the advantage of flowering earlier than the true double kind. These ornamental varieties have sprung from *Cerasus vulgaris* the species from which most of the numerous varieties of the Cherry are derived. No lawn ought to be without a tree of the double kind, and beautiful groups might be made by planting a selection of the double-flowered Peach and Almond, scarlet Hawthorn, Amelanchier, and Chinese and other Crab trees, all of which flower in spring, and have a handsome habit of growth. W. G.

**Variegation.**—So the poor Hawthorn has been caught in a moment of weakness at last! A specimen is sent us by Messrs. Osborn, of Fulham, whose most interesting old nursery has been much encroached on by railways of late, and who, we hope, may find a congenial home in their new nursery at Sunbury. They also have a variegated Apple.

**The Smilax.** described in THE GARDEN of July 30 by “H. M.,” is doubtless *Smilax aspera*, the only European representative, I think, of the family to which most of the Sarsaparilla of commerce belongs, and as I have it growing in perfection, I should be happy if “H. M.” requires it to forward him a specimen. It is one of the most ornamental plants possible, and when in flower scents exquisitely, and in berry is most effective. Lindley's “Flora Medica” (p. 597) gives a full account of it. It is diocious, and I think it is only one sex that scents.—B. GIFFARD, *Hill House, Hemel Hempstead.*

**Oak Insects.**—I have a wood containing above 20 acres of Larch, Scotch Fir, and Oak about 40 years old. The whole of the Oak leaves are in the condition of those which I send. In an adjoining wood the leaves are quite healthy and vigorous. What can be the cause? I need scarcely say we are having a cold, sunless season here.—W. H. M. [Your Oaks are suffering from the attack of various insects, one of which is the caterpillar of a small moth, but as none are present and the leaves are much broken, I cannot state anything more definite. There are traces of fungi on the leaves, but the fungi are only finishing up the work of the larvæ, at this time turned into moths.—G. S. S.]

### Indigoferas and Desmodiums.

—Among small shrubs some of the *Indigoferas* and *Desmodiums* are beautifully in flower, especially where they have had the protection of a wall, but even where such was not afforded them and where the plants were cut to the ground during the winter, they have in many cases pushed up strongly, and the young growths are now blooming profusely. Of the *Indigoferas* mention may be made of *decora*, *Dosua*, and *floribunda*, while of the *Desmodiums*, *Dilleni* and *japonicum* are conspicuous. The beautiful penduliflorum does not flower till a much later period.—ALPHA.

### MARKET GARDEN NOTES.

SINCE the refreshing rains have fallen work has been very active in market gardens, especially in the direction of getting in all kinds of winter green crops. That these have had to be got out so much later than usual may perhaps lead to fewer complaints as to the difficulty of sale than happened last winter. Then there was far too much of green stuff of all kinds, with perhaps the exception of Turnips. Now we may hope to have an abundance of Turnips, and if fewer, yet plenty of greens for winter and spring use. As the rain has not been limited to a few showers (we have had quite a heavy fall), the ground is so thoroughly moist that growth is rapid, and the plants make much headway and are regaining lost ground. There are numerous fine breadths of Autumn Giant Cauliflower to be seen, got out early, and watered in. Even in the hottest weather with one good soaking, when the plants are put out, and soil drawn about the surfaces the roots soon get established, and the plants thrive beyond expectation. To have all such plants put out in broad drills is also an excellent plan, as what showers may fall are caught, and carried in bulk to the roots of the plants; and if these be followed by a liberal use of the horsehoe the growth which follows is quite remarkable. Brussels Sprouts, got out amongst wide-sown Scarlet Runners and early Potatoes, look very vigorous. Where early Peas were cleared off, the ground has been filled with Coleworts or sown with Turnips. The great work of the cultivator now will be to keep down weeds, as the heat has



promoted a goodly crop of seed, and this is now germinating freely. The more this can be now encouraged to grow and as quickly destroyed the cleaner will the soil be next year.

**Potatoes.**—Early kinds have yielded a moderate, but very clean crop; indeed it is doubtful whether a score of diseased tubers have yet been found. Heat and drought told upon the produce in dry soils, but in deep rich soils the produce has been excellent. Not too many growers store their seed with sufficient care during the winter or make the soil good enough in the spring for first early Potatoes. I heard but the other day of a successful grower of Ashleaf Kidneys who stored all his seed over 100 bushels—during the intense frosts of January in his parlour rather than let them remain to be almost certainly frozen in a large loft. He said, "I found the frost getting a bit too hard, and as all the Potatoes were in bushels, had them brought down and put into this room, and we kept a fire going to keep out the frost; then when I thought danger was past I had the seed taken up again into the loft and spread out thinly; that kept them from sweating and sprouting. And when they were planted they were all as firm and sound as could be." On soil that had been well manured and deeply worked, a subsoiler following the plough, this grower was lifting a splendid crop at the rate of 450 bushels per acre, and selling freely at 4s. per bushel. On the other hand, I have seen plenty of crops of Ashleaf lifted where the produce did not exceed 200 bushels per acre, and the sample none of the finest, and yet it was chiefly questions of good storing of seed and of good culture that made the difference. Having experience of the market prices, fewer American Rose Potatoes are being grown this year, but early Regents and Snowflakes are mostly grown in succession. The Snowflakes, which are promising to ripen earliest, do not seem to be influenced by the change of weather, and are ripening off their foliage. Regents seem to be pushing renewed growth, and there is no telling at present when they may be ready. The Early Shaw is moderately grown, but Fox's Seedling is a better kind, yet not much cultivated.

**Late Potatoes.**—These bid fair to earn this designation fully this year. Great breadths of Magnum Bonums, Champions, Victorias, and Regents are yet so full of growth and of flower, as to lead to the conclusion that should the disease spare the leaves they will not mature their crops before the end of October. As one result of this renewed growth it is found almost impossible to fill up between the rows with winter plants, for the top growth would soon choke them. For almost a month the crops seemed at a standstill, and it did but need another week or so of hot weather to have caused them to collapse. The tubers and plant tops became fairly set, and any additional growth could only be made in the form of fresh branches and new tubers. Roots of these late strong-growing sorts now lifted generally show a mass of rootlets; some push through the soil and make fresh foliage, others carrying tiny tubers, and some of the larger tubers are producing others; thus the late Potato crop seems likely to be a demoralised one, and of very uncertain character and quality.

**Runner Beans.**—Although the heat of past days caused the flowers of the Runner Beans to fall so much, that only a very small crop of pods resulted, the plants suffered little, and now are full of bloom and vigour and podding freely. Judging by the present appearance of the breadths, it looks as though they would bear heavily till frost came. There is perhaps no more profitable vegetable than Runner Beans, for seldom are there too many in the market, and the price is usually a paying one. Taking together, where of both there is a good plant, Runner Beans and Brussels Sprouts, it is doubtful whether any other crops could equal them for general usefulness or for profit; cleared off during the winter, Potatoes follow, then Turnips or Spinach, and Runners can succeed again.

**Onions.**—Owing to the ravages of the Onion maggot, the crop of these bulbs will not be a large one, but the bulbs will no doubt be of good size; not least, they should be firm and of good keeping quality. Picklers, though thin, did very well, and have been cleared off. Probably the majority of the bulbs are now in the salting tubs. One of the best features of the season, as far as the Onion is concerned, is the prospect of a good seed crop. This is badly wanted, as stocks are getting low, and samples have of late been indifferent. Although the unusual heat and drought have had to bear the blame of the attacks of the maggot, no doubt the fact that much of the seed was old and lacking vigour had much to do with its ravages. Good strong plants from plump, well matured seed will often grow away from dangers that are too strong for weakly ones.

**Miscellaneous.**—There are good breadths of winter Spinach sown, and that it should now be well up shows that it has ample time to get into strong leafage before the winter comes. Spinach seldom has justice done to it in market gardens, and one rarely ever sees such growth upon it there as may generally be found in good kitchen gardens. I have never heard a grower complain that his Spinach crop was too robust, or that he had too much of it. Turnips, too, are showing good plants, and the recent rains, whilst giving them a strong stimulus, will also keep the Turnip fly in check. Some breadths sown too early have suffered, but the second and third weeks of August present a capital time for sowing in good ground to secure a winter crop. Already the hoe is set at work, as the weeds are coming thickly also. Altogether the prospect as relates to a supply of market stuff for the autumn and winter is not at all bad, and with respect to some things is better than for the past two years. Growers only need to find customers, and of these, in spite of the enormous population, there does not appear to be too many for the interests of market gardening. A. D.

## LATE NOTES AND QUESTIONS.

**White Bedding Plant.**—Can any one recommend me a good white bedding plant, not a Pelargonium? Is there a good free flowering white Viola?—J. C. T.

**Vine Leaves.**—*Enquirer.*—Your Vine leaves seem to have been seriously scorched by the sun whilst wet; they are also badly attacked by the Oidium, one leaf being completely white and velvety with the fungus. Sulphur will destroy the Oidium.

**Charcoal Producing Trees.**—We have been asked whether the wood of any or all of the Eucalypti is suitable for making strong, durable charcoal, equal to that made from Oak, for example? Will some one acquainted with the matter kindly supply us with the information?—J. C.

**Climbers.**—Will some of your readers kindly advise me what to plant on each side of the mansion door to look well all the year round, and eventually form an arch around it? I should like to include the white Jessamine and a Rose of some sort.—*ENQUIRER.*

**Hedges.**—What is the best time and method of pruning and training Yew, Spruce, and Larch for the purpose of forming hedges for shelter? The place is in one of the islands on the west coast of Scotland, subject to strong winds, but not hard frosts. Should the current year's wood be cut or last year's?—J. S.

**Soil for Lapagerias.**—I have been interested in reading in THE GARDEN "J. B.'s" description of how to grow Lapagerias (page 163). Would you kindly ask him as to the matter of soil whether the "turf matter" which he recommends should be peat, or loam, or both? or whether, inasmuch as he has altogether omitted to refer to the kind of soil, he deems this a matter of indifference?—R. M.

**British Ferns.**—Kindly name the best eight British Ferns suitable for growing in a small greenhouse and for exhibition. *AMATEUR.* [The following are perhaps the best British Ferns for exhibition—viz., *Adiantum F. f. plumosum*, *A. Victoria*, *Laetia F. m. cristata angustata*, *L. F. m. grandiceps*, *Osmunda regalis*, *O. cristata*, *Polystichum ang. plumosum*, *Scelopendrium etc. crispum*. R.]

**Planting Vines.**—I am constructing some Vineries (span and lean-to), and when finished intend planting them. Thompson's "Gardener's Assistant" shows the Vines to be planted between the brickwork and the hot water pipes, which I cannot think right. I think the cold air ought to pass over the hot-water pipes before it reaches the Vines. I have planted many Vines, but never between the brickwork and the pipes. Will some one favour me with advice in the matter?—J. B.

**Insects.**—*J. B.*—It is the caterpillar of the Death's Head Moth.

**Names of Plants.**—*H. n.* S. W. *Aster pyrenaeus*.—*Mae.* 1. Solidago species; 2. *Sedum Fabarum*.—*M. A.* 1. *Monarda fistulosa purpurea*; 2. *M. didyma*; 3. *Potamogeton crispus* (Curly Pondweed).—*H. P.*—*Alnus incisa*.—*Anon.* *Sambucus racemosa* (Scarlet-berried Elder).—*Mrs. Bouvier.*—Blue, *Funkia ovata*; white, *F. grandiflora*; other, *Veratrum viride*.—*Mae.*—Too withered to identify. *R. T.* 1. *Euphorbia Lathyrus*.—*R. C.* 1. *Celsia cretica*; 2. *Abelia rufostriata*; 3. no flowers, apparently *Aschmannes*. *L. D.* 1. *Cattleya Trianae alba*; 2. *C. chocoensis*.—*E. E. C. C.*—*Veratrum nigrum*.—*J. M. B.* 1. *Trachelium caput-medusae*; 2. *Lactuca perennis*; 3. send when the seed is ripe; 4. *Eryngium Bourgatii*; 5. *Potentilla species*.—*W. M. B.* (*Mendocensis*).—*Erodium caruifolium*; apparently *Ononis arvensis* (poor specimen).—*R. G.* (*Boulogne*). 1. *Sedum reflexum*; 2. 3. spectabile; 3. apparently a species of *Phlox*; 4. *Sedum Anacampseros*; 5. *Sedum reflexum monstrosum*; 6. send in flower.—*Pelonia (Roadnight)*.—Good, but no better than many other varieties in commerce.—*J. Colthorpe*.—The *Veronica* you send is difficult to name, as there has been several hybrid varieties raised. No doubt Messrs. Henderson, St. John's Wood, N., could name it for you. —*M. de L.* *Fraxinus saphorolia*.—*T. Shaw.*—1. *Eryngium maritimum*; 2. *Felium vulgare*; 3. *Lysimachia vulgaris*.—*W.* (*Clapham Common*).—1. *Hibiscus syriacus*; 2. send when in flower.—*Robt. Fowler.*—*Nephrodium dilatatum* (Shield Fern).—*M. S. S.* *Anagallis arvensis* (variety).—*C. P.* (*Munster*).—*Claytonia perfoliata*; 2. we cannot name from leaves only.—*Lochner.*—*Alnus incisa*; *Spirea caua*; *Rivina humilis*.—*W. E. Cop-ping.*—1. *Castanea vesca*; 2. a variety of; 3. Common Ivy (*Hedera Helix*); 4. *Robinia Pseudacacia* (*Falsc Acacia*); 5. send better specimen flower if possible.—*G. W.*—1. *Aspidium Lonchitis*; 2. *Polypodium vulgare*; 3. *Athyrium Filix femina cristata*.—*J. B.*—1. *Epilobium hirsutum*; 2. cannot name; 3. *Agrimonia Eupatoriæ*; 4. *Agrostemma coronaria*.—*Anna.*—1. *Lythrum Salicaria*; 2. *Erythraea Centaureum*; 3. *Campanula urticifolia*; 4. *Scirpus lacustris*.—*B. V. E.* *Asclepias curassavica*.—*Enquirer.*—1. *Cattleya Forbesii*; Fern is *Pteris longifolia*.

**Names of Fruits.**—*J. T.* (*Subscriber*).—1. is too much withered to recognise; appears to be a good keeping sort; 2. apparently *Duchess of Oldenburg*.

**Books.**—*C. W.*—Miss Hassard on "Floral Decorations."

## Clouded Ivy and Purple Clematis.

One of the prettiest and most effective combinations that I have seen this summer consisted of the above. The Ivy covered some brick pillars, the Clematis issuing from it at irregular intervals, the rich purple hue of the flowers forming a most pleasing contrast to the white and green of the Ivy. One rarely sees any attempt made to associate in a permanent manner flowering plants with Ivy, and it must be owned that as regards the green forms there is some difficulty in the matter, owing to the fact that they are of such an extremely vigorous nature that few things can live with them. The Clouded Ivy is not, however, of such a wasteful nature; it grows freely enough, is by no means miffy, but there is but little danger of its overpowering any strong climber which may be associated with it.—J. CORNHILL.

**Staring Labels.**—I quite agree with the remarks of "G. M." as to white and garish labels. I have had long experience with labels, and made a considerable study of them, so to say, not only in my own place, but in other gardens, and I have come to the conclusion that no label, especially no large one, should ever be white. The proper colour for all important and lasting labels is black or brown for the ground, on which white letters should be printed. A garden full of white labels has the effect of an ugly graveyard on a small scale.—R. M.

**Wild Flowers at Exhibitions.** At the annual show of the Neath Horticultural Society which took place the other day, the mayor of that town gave some handsome prizes for collections of wild flowers, variety and arrangement being points for the consideration of the judges. Many fine collections were shown, but the finest came from the mayor's own daughter. These were arranged in a tall branching epergne, and those who think that ornaments of this kind can only be made beautiful by the use of the choice hothouse flowers should have seen this. Grasses, wild Ferns, Water Lilies, and dozens of wild flowers of other sorts furnished both variety of form and colour. Other collections shown were also highly interesting, but they were chiefly in baskets, and not seen to such advantage as in the glass.—J. MUIR.

**GRATUITOUS INSULT.**—Asking a bald-headed man to join the Society for the Preservation of Open Spaces.—*Punch.*



"This is an Art  
Which does mend Nature: change it rather; but  
THE ART ITSELF IS NATURE." *Shakespeare.*

## THE ENGLISH FLOWER GARDEN, OR FLOWERS OF THE OPEN AIR.\*

In the present state of flower gardening, and when so much attention is being directed to the plants useful for our flower gardens, it has seemed to us desirable that the whole of the material should be fairly estimated and treated of in one book.

One aim of these papers will be to state the true value of a plant in the garden, and if it possesses none, or is of doubtful quality, to say so. In dealing with the immense mass of material now offered errors occur every day, even in good gardens, owing to the selection of things either poor in themselves or unfitted for the special purpose they are sought for. To omit all mention of poor or doubtful plants did not seem the best way, because the names occur in catalogues, and daily mistakes are made in ordering and growing useless plants. This is not only an evil in itself, but has to be thought of in connection with the waste of space and means which might be devoted to beautiful plants. No one can hope to be perfectly just or right in giving the exact value of a family of plants, nor can he be sure that good ones may not sometimes be slighted, but it is better to face this difficulty in the interest of the many persons who want to know what to grow. Those who know many plants need no advice, and will try no fewer novelties because of our desire to help beginners.

These papers are printed in THE GARDEN in the hope that while they may be helpful to some readers, others may enable us to make the articles better. Our many readers who know and love the flowers dealt with will greatly oblige us by noting omissions, or ways of culture and arrangements which seem desirable to add. It is proposed to republish these papers when complete, and in the cheapest form possible, so that all interested in flower gardening may have a reference to what is worth having, how to grow it, and where to put it—a point of supreme importance which has never received sufficient attention in gardening books.

We propose to include all plants grown for their beauty in the open air—annual, biennial, perennial, alpine, or rock; popular flowers, usually called "florists' flowers;" half hardy plants, grown out-of-doors for a portion of the year; Ferns, which deserve to be rescued from the obscurity of the hardy Fernery and placed among their friends the flowers; ornamental Grasses; the fine-leaved plants, including the so-called sub-tropical, or the best of them; bulbs of all kinds, rare and popular, like the Gladiolus or Hyacinth—in a word, all of the materials with which the flower gardener can be called upon to deal.

W. R.

*Abobra viridiflora*, a fragile South American twiner, belonging to the Cucurbit family, occasionally grown in gardens, but

\* Any notes or corrections would be best sent as soon after the publication of the subjects suggesting them as possible.

of little value, easily raised from seed, and trails over a low trellis or against a low wall. It is graceful in habit, but does not seem to succeed in our climate. No doubt a warm south wall is best for it. It is dioecious, and therefore unless both sexes are raised no fruit is possible, and the interest of the plant depends considerably on its being more or less covered in autumn with its red berries.

**Abrobia** (*Sand Verbena*).—A small genus of Californian plants, numbering seven species of annual or perennial duration. They are all of a dwarf trailing habit, and bear showy blossoms in dense *Verbena*-like clusters. Four kinds are known in gardens, viz., *A. arenaria*, known also as *A. latifolia*, a perennial having procumbent trailing stems and dense clusters of lemon-yellow flowers, with a honey-like fragrance; *A. umbellata*, an annual also with succulent trailing stems and dense terminal clusters of rosy-purple and slightly fragrant flowers; *A. fragrans*, a perennial more or less erect in growth, forming large branching tufts from 1½ ft. to 2 ft. in height, and producing terminal and axillary umbels of pure white flowers which expand late in the afternoon, and then emit a delicate vanilla-like perfume; *A. Crux Malte*, a pretty species with white flowers and sweetly-scented. *A. arenaria* and *A. umbellata* succeed best in rather poor, light, and dry soil; in richer and moister ground they are apt to grow weedy, and the flowers become less conspicuous. The position best suited to them is one fully exposed—either an open, flat, but well drained border or rockwork. *A. fragrans* succeeds best in friable or light soil, but being of larger and taller growth than the others, should not be grown on a rockery, but in a well drained border. The propagation of all the species can only be effected by means of seed, which in favourable seasons may be obtained from *A. arenaria* and *A. umbellata*, but as *A. fragrans* does not ripen seed in this country, imported seeds of it must be procured. The roots of *A. arenaria* are very long and fleshy, penetrating deeply into the soil, and are said to be employed as food by some of the Indian tribes. The seeds both of this species and of *A. fragrans* frequently remain dormant some time before vegetating; those of *A. umbellata* germinate more readily. Mr. Thompson, of Ipswich, says: *A. Crux Malte* I know only by dried specimens sent me by Mr. J. S. Lemmon, and they had the flowers tinged with rose, but whether the result of drying or not I am unaware. *A. arenaria* has recently been published in Bot. Mag. under the name of *A. latifolia*. I believe that *A. arenaria* occurs both with pale purple and yellow flowers. I can aver that I raised a purple variety which was sent me as *A. arenaria* by Bolander, and which, so far as I can remember, was only distinguishable from the yellow variety by its colour.

**Abutilons**.—A genus of plants mostly requiring greenhouse temperature in winter, but which grow freely in ordinary garden soil out-of-doors in summer, and are a graceful aid in the flower garden. *A. Darwini* and its forms, as well as the varieties related to *A. striata*, under favourable conditions, grow from 4 ft. to 8 ft. in height. They can be stopped and made bushy according to the height required, and they flower and look better than they do in pots. They are useful among the taller and more graceful plants for the flower garden, and are easily raised from seed and cuttings. These varieties are now of various colours, and others are being raised every day. There are some splendid variegated kinds suitable also for out-door work. *A. vitifolia* is a very handsome wall plant in mild districts. *A. Sellowianum* mar-

moratum is a fine variety. Among the best in cultivation are the following, and new varieties are being continually raised: *Admiration*, *Anna Crozy*, *Buisson d'Or*, *Darwini robustum*, *Darwini majus*, *Elegantissima*, *Grandiflorum*, *Lemoinei*, *Lady of the Lake*, *Leo*, *Orange Perfection*, *Roule de Neige*, *Delicata*, *Lactole*.

**Acacia lophantha**.—This elegant plant, though not hardy, is one of those which grows freely in the open air in summer. It will prove more useful for the flower garden than it has ever been for the houses. The beauty of its leaves and its quick growth in the open air make it a boon to the flower gardener who wishes for graceful verdure amongst the brighter ornaments of his beds. It has a close and erect habit, which permits us to closely associate it with flowering plants without shading them or robbing them. By confining it to a single stem and using it in a young state, we get the fullest size and grace of which the leaves are capable. It may be raised from seed as easily as a common bedding plant. By sowing it early in the year it may be had fit for use by June 1; but plants a year old or so, stiff, strong, and well hardened off for planting out at the end of May are the best. It would be desirable to raise an annual stock, as it is almost as useful for room decoration as for the garden. New Holland.

**A. Julibrissin**.—A native of Persia, with large and elegant much-divided leaves, and flowers somewhat like short tinted brushes from the numerous purple stamens. By confining it to a single stem and using young plants, or plants that have been cut down every year, we get an erect stem covered with leaves more graceful than a Fern, and a pretty object amidst low-growing flowers. The leaves, like those of some other plants of the Pea tribe, are slightly sensitive. On fine sunny days they spread out fully and afford a pleasant shade; on dull ones the leaflets fall down. Seed of *A. Julibrissin*—or the Silk Rose, as it is called by the Persians, in consequence of its silky stamens—is readily obtained, and it is much better raised from seed, as we then get those single-stemmed and vigorous young plants which are to the flower garden what an elegant Fern is to the greenhouse. It may be protected at the root and cut down every year in spring, or strong young plants may be put out annually, in much the same way as those of *A. lophantha*.

**Acæna**.—This genus is wholly confined to the Southern Hemisphere, and though possessing no attractive features as regards the flowers, if we except those intensely crimson spines that give such a charm to the little New Zealand *A. microphylla*, the species have a neat habit of growth that renders them deserving of culture. When visiting a place in which a very extensive rockwork was formed a couple of years ago, we found an illustration of the adaptability of *Acæna pulchella* as a rock plant. It was growing on a ledge, above a mass of rock some 4 ft. high, and its branches, which were covered throughout their whole length with pretty bronzy leaves, were suspended in graceful festoons over the face of the stone, even down to the rocky pathway, over which many of them spread in wild profusion, and often measured as much as 7 ft. or 8 ft. in length, the result of but little more than one season's growth.

**A. microphylla** (*the Rosy-spined Acæna*) spreads into dense tufts no taller than a Moss, and in summer and autumn becomes thickly bestrewn with showy and singular globes of spines. It is quite easily increased by division, is perfectly hardy,



grows in ordinary soil, but thrives much the best in that of a fine sandy and somewhat moist character. Its home is on bare level parts of the rockwork, and it is also good as a border or even an edging plant in soils where it thrives. Occasionally it may be used with a singularly good effect to form a carpet beneath larger plants not thickly placed. It would form a good ground or protecting plant for choice hardy Orchids and Trilliums, or like plants in the bog bed.

**A. pulchella**, though in floral and fruiting characters, never at any time showy, is nevertheless a plant worthy a place. Any soil or situation will suit it, but the best position I ever saw it in was growing from interstices of stone by the steep side of a sunken rocky path. Its branches, rooting as they went, were covered throughout their entire length with pretty bronzy leaves, and suspended in graceful festoons over the face of the stone, even to the rocky path beneath, in wild profusion, often measuring as much as 7 ft. or 8 ft. in length, the result of little more than one year's growth. Its flowers are inconspicuous.

**A. millefolia** is much unlike either of the preceding. It has finely divided pale green foliage, and is a graceful plant for hanging down a bank. Its defect is its unsightly fruiting spikes (not heads, as in the others). Its points will adhere to anything they come in contact with, and the result is that seedlings of this species come up in the most unexpected spots. There are many other kinds in cultivation, such as *A. ovalifolia* and *A. sarmentosa*, but those that have been mentioned are distinct and characteristic enough, representing as much of the genus as may be admissible in a collection.

**Acantholimon** (*Prickly Thrift*).—An Eastern genus, extending from Syria and the east of Greece to Western Tibet, and having its head-quarters in Persia. The flowers resemble those of the *Statice* and *Armeria*, but the habit of the species of *Acantholimon* at once distinguishes it from either of these. The *Acantholimons* do, indeed, form branching, cushion-like tufts, somewhat after the style of *Thrift*; but the leaves, instead of being soft and Grass-like, are rigid and sharply pointed, or even spiny. As many as eighty-four species have been described by Bunge, while Boissier has only about half as many; it is probable that the higher number is capable of considerable reduction. The species much resemble one another.

**CULTURE AND POSITION**.—As known to us, they are dwarf evergreen rock garden and choice border plants. The following species we have had for years, but have not been very successful in propagating them, except *A. glumaceum*, which is the freest growing of the set; the others are very slow growing. Cuttings taken off in late summer and kept in a cold frame during winter make nice little plants in two years, but by layering one gets larger plants in less time. All are hardy and seem to prefer warm, sunny situations planted in sandy loam. Few would seem to have any idea of how much is lost by having many of our herbaceous and alpine plants in pots. There are three species in cultivation—*A. glumaceum*, *venustum*, and *androsaceum*, but the introduction of others is much to be desired. *A. Kotschy* is a handsome species, with long spikes rising well above the leaves and numerous white flowers; *A. melananthum* has short, very dense, capitate spikes, the limb of the calyx being bordered with dark violet or black; *A. Phrygium* is in the way of *A. venustum*, but is a more robust plant, with longer spikes.

**Acanthus** (*Ben's Brush*).—A long-neglected group of hardy plants, with singularly fine foliage and stately habit when well grown. The plants mostly come to us

from the countries round the Mediterranean, and are hardy. Though the foliage may suffer now and then, we have not remarked that the roots ever perish.

**CULTURE AND POSITION**.—The plants are not so showy for the mixed border as other perennials, but possess a peculiar grace when they flower, which more than compensates for this; but they are worth growing for the sake of their foliage alone. Their fine habit and foliage make them valuable for planting on the turf, either singly or in groups, best in groups. The grouping should be gracefully done, the plants not dotted about and in a geometrical manner, but irregularly, not too close together. On rocky banks, or about ruins, or on terrace gardens of the less formal kind, they look very well. They will live in shade; to flower well they should have full sun. The fine form of the leaves, and their leathery texture, have made the *Acanthus* much admired as a house plant, as it is easily grown in a window, in which position we have seen it flower. These plants only require to be planted in any kind of soil in order to grow freely, but attain fair stature and their best bloom on warm, deep soil—a free sandy loam, or any deep and open soil. Clay they do poorly on, not flowering freely or at all—we mean a bad clay like that in the northern suburbs of London. When placed singly or in groups on the lawn, the greatest care should be taken to give them deep, good soil. They are not difficult to increase by careful division of the roots in autumn or winter, and they may be raised from seed in a gentle hot-bed, or out of doors with other perennials.

The hardy species introduced are not numerous: *A. hirsutus*, S. Europe; *A. syriacus*, Syria; *A. mollis*, S. Europe; *A. spinosus*, Turkey; *A. longifolius*, Dalmatia; *A. spinosissimus*, S.E. Europe. The fine bold kind known as *A. latifolius* (syn., *lusitanicus*) is thought to be a variety of the oldest cultivated species, *A. mollis*, but as a garden plant it is wholly distinct from that in size and appearance, and the most valuable kind. The plants vary in height from 1½ ft. to 4 ft. according to the richness of the soil in which they are grown. When in flower in warm districts and on good soils, we have seen them attain to nearly 6 ft. in height, and in this state a good specimen is one of the handsomest of plants.

**Aceranthus diphyllus**.—Synonymous with *Epimedium diphyllum*, a Japanese species.

**Aceras** (*Man Orchis*).—A small genus of terrestrial Orchids of no garden value. *A. anthropophora*, the *Man Orchis*, has very singularly shaped greenish flowers.

**Achillea** (*Milfoil*, *Yarrow*).—A numerous family of hardy plants spread through Northern Asia, Italy, Greece, Turkey, Hungary, &c., but more in Southern Europe than in Central or Northern. In the Alps and Pyrenees numerous species are found. A careful selection is very useful for garden culture. The plants vary in height from 2 in. to 4 ft. Their flowers are pale lemon, yellow, and white, rarely pink or rose. *A. Millefolium rubra* is a fine plant when grown in poor soil; *A. tomentosa* is charming on dry gravelly soil. *A. Ptarmica* fl.-pl. (a double variety of the Sneezewort) is a handsome plant with snow-white flowers, but hard to keep within bounds. It should be lifted every year and replanted in clumps. Perhaps twenty of this large family are available as border plants. *A. Eupatorium* is a noble plant, bearing very large corymbs of yellow flowers. *A. aegyptiaca* is, perhaps, the most graceful of the family. *A. pectinata* is a pretty snow-white flowered plant, and one which should be treated as an alpine, and grown almost in gravel; it is a native of Hungary. *A. Clavennæ*, a silvery Austrian

species, is one of the most striking of the family. Its leaves are divided into club-shaped divisions. Planted with *Trifolium rubrum* or *Ajuga purpurea*, it has a charming effect.

**CULTURE AND POSITION**.—Of the easiest possible culture, growing freely and increasing even too freely in any soil, with the exception of the dwarf mountain species. Some of the large kinds are fine plants for the choicest borders or groups, as *A. Eupatorium*; the alpine species, such as *A. tomentosa* and *A. Aizoon*, are well suited for the rock garden, while the coarser, very pretty-growing white kinds, unfit for garden culture, are strikingly effective in flower when naturalised in rough shrubberies and like places.

**A. ageratoides**.—Originally introduced into the country under the name of *Anthemis Aizoon*. It is a dwarf, compact-growing, silvery plant, with narrow leaves arranged in dense rosettes, the margins exquisitely crimped. The flowers are produced singly on stalks about 6 in. or 8 in. high, pure white, and of large size. In many respects the gem of the genus. A rock garden plant. Greece.

**A. aurea**, a native of the Levant, is frequently confused with the foregoing species, but is quite distinct. Its habit of growth is tufted, not creeping. Its leaves are larger, and its flower-stems attain a height of at least 15 in. The flowers are a golden yellow, and are produced in the autumn as well as early summer. It is a somewhat tender plant, and is now rarely met with.

**A. aegyptiaca** may possibly be, as the name would indicate, an Egyptian plant, but we think it is more probably a native of the island of Crete. It has beautifully cut white silvery leaves, and is of compact growth; the flowers are bright yellow in colour, raised on stems about 15 in. high, and would be a desirable plant were it only for its foliage. It is hardy, and a good plant in the warm border.

**A. Clavennæ**.—A fine old plant with hoary leaves, deeply jagged as to the margins, of dwarf tufty habit of growth. Flowers white, in corymbs about 9 in. to 12 in. high. It is a native of Carinthia and the Austrian Alps. Under cultivation it loves dry sandy soil. In strong loam it rarely ever survives a winter without protection. A rock garden or edging plant, and also suited for beds.

**A. Eupatorium** (sometimes called *A. Filipendula*) is a tall-growing, vigorous, herbaceous plant, somewhat woody in the character of its lower growth. Its flowering corymbs are flat, bright yellow in colour, and elevated on stout stems at a height of 3 ft. to 4 ft.; they retain their beauty and freshness for at least two months. This is admirably adapted for a shrubbery border, where its brilliant yellow flowers and its erect habit of growth show to wonderful advantage amongst the evergreen foliage. It is a native of the shores of the Caspian Sea, and is one of the finest of perennial plants. It is very easily increased by division, and is worthy of good culture and a good position. It would go well with groups of the nobler hardy plants whether deserving the name for their foliage or flowers.

**A. Millefolium rosea** (*Rosy Yarrow*) is a lovely plant with rose-coloured flowers of so deep a tint as to come near crimson. It is a strong grower, height 2 ft., and blooming freely. It deserves a place in every herbaceous border. There are a number of species so closely related to the *Milfoil*, that it is needless to specify them. They may have a distinctive specific character, but for cultural purposes they may be taken as one.



**A. Ptarmica** (*Snowwort*) is fairly distributed through Britain as one of our upland woodland plants, somewhat meagre and scattered in its native habitat, but when introduced into garden culture becoming a very showy and vigorous border plant, of some 2 ft. in height, with pure white flowers in corymbs. The double variety (*A. Ptarmica fl.-pl.*) is one of the loveliest white flowers we possess, and as a border plant of free growth and perfect hardiness has few rivals. Worth a place among plants grown for cutting.

**A. rupestris** (*Rock Yarrow*).—Among the dwarfier species this is one of the best, forming low tufts covered with pretty pure white flowers. Capital for the rock garden or borders, growing well in poor sandy soil.

**A. serrata**.—A distinct species of dwarfish habit; height about 15 in.; leaves white, with adpressed hairs; flowers in corymbs, a good clear white. Alps of Central Europe. There is a double form, but it is not so good as the double *Snowwort*.

**A. tomentosa** stands first amongst those with yellow flowers. Of creeping habit, its flower-stems scarcely exceed a height of 9 inches, and its flowers are a bright yellow, produced in quantities in the month of June. Its foliage is much divided, and forms a dense carpet of bright green. Rock garden and borders; not in wet places.

**A. umbellata** is a dwarf compact grower of a tufty habit, scarcely exceeding 8 in. in height, the whole surface of leaf and stem being clothed with a dense covering of short hairs of silvery whiteness. This peculiarity has given it an introduction into the flower garden. A neat and attractive border or rock plant. The flowers are white, but, owing to the silvery character of the plant, they are inconspicuous. Greece.

**Achlys** (*Oregon May Apple*).—One species, *A. triphylla*, is the only one in cultivation. It is a North American plant, belonging to the Barberry family. It grows about 18 in. high, but as the flowers are small and inconspicuous, it is unimportant as a garden plant.

**Achyrachæna mollis**.—An annual Composite from California. It grows about 8 in. high, and has rather inconspicuous flowers. Of little value for the garden.

**Achyrocline**.—The only species, *A. Saundersoni*, is a small shrubby plant of the Composite family, having small leaves covered with a cottony material. It is of doubtful hardiness and merit.

**Acis**.—A small genus of bulbous natives of South Europe, of which some three or four species are in cultivation. The best known and prettiest is *A. autumnalis*, a very slender-leaved little bulb, with stems rising 3 in. or 4 in. high, and bearing a couple of flowers that may be described as delicate pink *Snowdrops*, drooping elegantly on short reddish footstalks, of a deep red colour round the seed-vessel, and blooming in autumn before the leaves appear. It is a true gem for the rockwork, where it should be planted in a warm soil and sunny position, sheltered with a few stones, and on which it would look very well springing from a carpet of delicate, feeble-rooting *Sedum* or other dwarf plant. The other kinds are *A. trichophylla*, *rosea*, and *hyemalis*, all of which will thrive where the soil is of a fine sandy nature, but as yet so rare as to be worthy of the best position and care.

**Aconite** (*Aconitum*).

**Aconite, Winter** (*Eranthis hyemalis*).

**Aconitum** (*Monkshood*).—An important though dangerous family of plants, from the poisonous nature of their roots. There are too many names—not so many species—and

judiciously placed they are of much value for our gardens.

**CULTURE AND POSITION**.—Position here is important, and few would care to risk their being planted anywhere the roots could be by any chance dug up by mistake for edible roots, as they are so poisonous. Nevertheless, some of the kinds are so handsome and stately when in bloom, that they are worthy of a place beside the finest hardy plants; as, for example, the blue and white *A. versicolor*, which is a beautiful object in the good soil and partial shade of many a cottage garden. Almost all the kinds may be easily naturalised in copses or shrubberies away from the garden proper, or beside streamlets, or in openings in rich bottoms.

The best kinds are *A. Napellus* and its forms, *versicolor*, and others; *A. chinense*, *A. autumnale*, *A. japonicum*, and *A. tauricum*; *A. Lycotomum* is a yellow-flowered and vigorous species. All tall plants, from 3 ft. to 5 ft. high.

**Acorus** (*Sweet Flag*).—A small family of water-side or marsh plants, occasionally cultivated, and of wide distribution in nature. The *Sweet Flag* is fond of rather stiff moist soil, and may be planted either on the margins of pieces of water, or in the water itself. Easily multiplied, like the *Iris*, by division. *A. Calamus* (*Sweet Flag*) is a marsh or water-side plant, now naturalised in most parts of Europe. A variety has gold-striped leaves, and has been called *A. japonicus folis aureo-striatis*. *A. gramineus* (*Grass-leaved Acorus*) is a species with a slender creeping rhizome covered with numerous Grass-like leaves, which are from 4 in. to 6 in. in length. A native of China and Japan. A variety with white-streaked leaves (*A. g. variegatus*). This plant is often seen in the little bronze trays of water plants seen in Japanese gardens and houses. The plants look pretty on the margins of fountain-basins.

**Acroclinium**.—A roseum, the only species, is a pretty half-hardy annual from Western Australia. It grows over 1 ft. high and bears pretty rosy-pink flowers, which, owing to their chaffiness, are used as "everlasting" flowers. Seeds should be sown in frames in March, and the seedlings planted at the end of April or early in May in a warm border, or the seeds may be sown in the open ground at the end of April in fine rich soil. If the flowers are desired for preservation as everlastings it will be well to gather them when fresh and young, some scarcely out of the bud state. It does best in a warm, sunny border, in good open and well enriched soil. This annual might be made graceful use of in mixed beds.

**Actæa** (*Baneberry, Herb Christopher*).—A small genus and not very important for gardens. Plants rather tall, 3 ft. to 6 ft., thriving in free soil; spikes, white and long, with showy berries where they fruit freely. The white *Baneberry* has white berries with red footstalks. The var. *rubra* of *A. spicata* has showy fruit; the plants are best suited for the wild garden in rich bottoms, as the foliage and habit are good. The flower is somewhat short-lived in the ordinary border, and they are somewhat coarse in habit. *A. spicata* (common *Baneberry*), *A. racemosa* (*Black Snakeroot*), *A. alba* (white *Baneberry*), having white berries with red stalks, and one or two American forms of the common *Baneberry* are the kinds in cultivation.

**Actinella**.—A small genus of North American Composite plants of which there are three kinds in gardens. They are all dwarf-growing plants with yellow flowers. The finest is *A. grandiflora*, a native of Colorado; it is a dwarf alpine plant with flower-heads 3 in. in diameter. The plant is

more or less branched, and grows from 6 in. to 9 in. high. The other species, *A. Brandegi* and *A. scaposa*, are somewhat similar. They are all perennial, and thrive in an open, warm border of light soil.

**Actinomeris**. Coarse growing North American plants of the Composite family. *A. squarrosa* and *A. helianthoides* are the two kinds known in gardens.

**Adam's Needle** (*Yucca*).

**Adamsia** (*Puschkinia*).

**Adder's Tongue** (*Ophioglossum*).

**Adenophora** (*Gland Bellflower*).—

Elegant plants of the Campanula Order, not many of which are in cultivation. Mostly from Siberia and Dahuria, and generally blue in colour. Some of the most distinct species are *A. communis*, *A. coronata*, *A. liliifolia*, *A. Lamarcki*, *A. stylosa*, and *A. pereskiaefolia*. In these there occur slight variations in colour and size of flower, and also in the form of the radical leaves. The thick fleshy roots of the *Adenophora* revel in a strong rich loam, and like a moderately damp sub-soil; they are impatient of removal, and should not be increased by division. Unlike the *Platycodons*, they produce their seeds freely, and the seedlings reproduce very constantly the specific characteristics of the parent. They vary in height from 18 in. to over 3 ft., and are well suited for the mixed border, flowering in summer.

**Adenostylis**.—Small growing composite plants of little garden interest. Three kinds are in cultivation—*A. Petasites*, *pyrenaica*, and *alpina*, all natives of Europe.

**Adiantum** (*Maiden-hair Fern*).—Some of the species of this lovely genus of Ferns are quite hardy in this country. The soil best adapted for their growth is rough fibry peat, mixed rather liberally with sand and lumps of broken stone or brick. *A. pedatum*, the fine American kind, might be usefully employed for forming a carpet for other shade-loving plants. It is also excellent for association with the more beautiful wood flowers in the wild garden, *Trillium*, *Hepatica*, blue *Anemone*, and the like. The fronds of this Fern rise from a creeping rhizome, therefore care must be taken to plant it in positions in which it is likely to be little disturbed. Like all the *Adiantums*, it is fond of moisture while growing, care being taken, however, to always provide plenty of drainage; stagnant moisture around its roots would speedily prove fatal. *A. Capillus-veneris*, the British *Maiden-hair Fern*, succeeds best in a very sheltered, warm position, as, for instance, in a little nook at the foot of a shady wall, associated with some equally moisture-loving hardy plants. In such a position it ought to thrive well, and so placed, it would be easy and advisable to protect it with some kind of portable covering during severe winters. Its native habitat is amongst the sheltered rocks of Cornwall, Devon, and Wales, and in various parts of Ireland; therefore some idea may be formed of the sort of climate in which it luxuriates. This Fern has a great predilection for damp, warm walls, which it speedily covers with a carpet of beautiful verdure. There are several varieties or forms of this *Maiden-hair*, amongst which *A. Capillus-veneris incisum* is a distinct kind, found in Ireland. In this the pinnules are much more divided than in the type. *A. Capillus-veneris rotundatum*, found in the Isle of Man, is also a beautiful variety, though very variable. The fronds are narrower and rounder than in the type. *A. Capillus-veneris Footi*, a large form, which sometimes grows upwards of 1 ft. in height, has fronds beautifully cut and divided. The Cornwall variety (*cornubiense*) is a fine plant and very distinct from the others, but is as yet somewhat rare.



**Adlumia** (*Climbing Ranunculus*).—One species only (*A. cirrhosa*) is known of this genus. It is a rapid grower, and soon covers the object against which it is placed. Its Maiden-hair Fern-like leaves are borne in profusion on the slender, twining stems, and the blossoms, which are white and about  $\frac{1}{2}$  in. long, are also borne very freely. There is a variety of it with purple flowers (*A. cirrhosa purpurea*), which, if grown with the type, forms a pleasing contrast. It is strictly a biennial; that is, it makes growth one year, flowers the next, and then dies, but it bears seed so profusely—which comes up year after year without being sown—that it may well claim to be a perennial. It is a native of North America, and was formerly known under the name of *Corydalis fungosa*. It requires a warm good soil to make it worth having, and its place is trailing over a shrub or twiggy branch, placed either against a wall or in the open.

**Adonis.** Plants belonging to the Ranunculus or Buttercup family. They are chiefly natives of corn-fields in Southern Europe and Western Asia, and are dwarf in stature, with finely-divided leaves, and red, straw-coloured, or yellow flowers. There are about fifteen or sixteen species, most of which are annuals, and not very striking or ornamental in appearance; consequently, with the exception of two or three fine kinds, they are seldom seen in gardens.

**A. autumnalis** (*Pheasant's-eye*).—A British annual which grows 1 ft. or more high and blooms in the end of summer or early in autumn. The flowers are of a bright scarlet colour. Individually, the plants are not very effective, as they are rather straggling in growth, but when grown in masses in borders or flower beds along with other autumn-flowering annuals, they are pretty, though the plant is not popular in gardens. May be sown in the open ground in autumn or in spring.

**A. vernalis** forms dense tufts 8 in. to 15 in. high of finely-divided leaves in whorls along the stems. It flowers in spring, when the tufts are covered with numerous large, brilliant yellow, Anemone-like flowers 3 in. in diameter, a single flower being produced at the end of each stem. Of *A. vernalis* there are several varieties, the chief of which is *A. v. sibirica*, which differs from the type only in having larger flowers. *A. apennina* is a later blooming form. *A. pyrenaica*.—This is a fine and closely allied kind from the Eastern Pyrenees with large deep yellow flowers, resembling those of *A. vernalis*, but with broader petals. It flowers in April and May, and may be grown in the same way as the last-named species. Free, sandy, moist loam, and not often disturbed, robbed, or shaded by coarser plants. A choice border of rock plants or the rock garden suits the handsome perennial kinds well, and if the soil is poor it may be enriched with leaf-mould or any other decayed manure. They are increased by careful division or by seed sown as soon as gathered.

**Ægilops.**—A small genus of Grasses allied to Triticum (the Wheat Grasses); of little garden value.

**Ægopodium Podagraria** (*Gout Weed*).—A troublesome, indigenous weed common in many gardens. It is very difficult to eradicate, and there is no more effectual way than constantly digging out the roots. There is a rather pretty variegated-leaved variety of it, which, however, soon turns green again in gardens, and this circumstance partly accounts for the species being so widely spread in cultivation. No pains should be spared to root it out.

**Æthionema.**—This is a beautiful genus of the Arabis family, but differs from the greater number of the Crucifers in light,

elegant habit and wiry stems, and usually glaucous leaves. They are mostly found on the sunny mountains near the Mediterranean, particularly eastward, and are especially valuable for gardens, forming stronger and more free-flowering tufts in them than in a wild state. These little plants will grow freely enough in borders of well-drained sandy loam, but their true home is in the rock garden. The tall *Æ. grandiflorum* forms a spreading bush about 1 ft. high, from which spring numerous racemes of pink and lilac flowers. It, too, grows well in borders in ordinary soil; seems to be a true perennial, and when in flower in summer, is among the loveliest of alpine half-shrubby plants. It succeeds perfectly well on the front margin of the mixed border; and though rockwork is not required, it will certainly be a gain where the highest health of the plants is sought. In consequence of the prostrate spreading habit of the stems, a pleasing effect will be produced by planting these in positions where the roots may descend into deep earth, and the stems fall over the face of rocks at about the level of the eye. The species are easily raised from seed, and thrive well in sandy loam. There are many species, but there are but few in gardens. All the cultivated kinds are dwarf, and may be grouped with alpine or rock plants. The best known kinds are *A. coridifolium*, *pulchellum*, and *grandiflorum*.

**African Lily** (*Agapanthus*).

**Agapanthus** (*African Lily*).—Beautiful plants from the Cape, with blue or white flowers in umbels on stems 18 in. to 4 ft. high. *A. umbellatus*, the old kind, is hardy in some mild seashore districts, and a fine plant in some rich beds or borders, but the better for protection of leaves or Cocoa fibre round the root in winter. Everywhere well worth growing for the flower garden and vases in summer, protecting it in winter by storing under stages, or in sheds or cellars. The fleshy roots may be so stored without potting. Enjoys plenty of water during period of growth out-of-doors, and is easily increased by division. Various new kinds have been introduced, but their value out-of-doors has not been so well tested as the favourite old African Lily. Of the best known kind, *A. umbellatus*, there are several varieties; major and maximus are both larger than the type, and of the latter there is a white-flowered variety. There is also another with white flowers, but smaller, and one with double flowers (*flore-pleno*). The variegated-leaved kinds, *fol. albo vittatus* and *fol. aureo vittatus*, are likewise desirable for the sake of variety. These are variegated forms of *A. umbellatus pallidus*. *Saundersianus* is a distinct variety with deeper-coloured flowers than the type.

The largest of all is the new *A. u. giganteus*, the flower-spikes of which attain a height of from 3 ft. to 4 ft., with the umbels of flowers proportionately large, bearing from 150 to 200 flowers. The colour is a pure gentian blue, while the buds are of a still deeper hue. If it proves as hardy as the other species, this will be a very valuable plant. *Agapanthus umbellatus candidus*, pure white, seems a variety, as the seedlings will not come true from seed, about 70 per cent. only being true. *A. u. pallidus* is a good pale porcelain blue, a short-leaved variety. *A. u. minor* is a dwarf variety. Of *A. umbellatus* there is a true double-flowered variety, a very distinct and good plant. There is, moreover, *A. u. atro cœruleus*, a dark shaded violet variety. *A. u. maximus* is a variety with flower-stalks 4 ft. long, and bears very full heads of flowers, one set opening while a second is rising to fill up the truss as the first crop fades. In size and colour the flowers are the same as those of *A. umbellatus*. *A. u. Mooreanus* is a neat dwarf species, flowering very

freely in 4-in. pots; it grows from 12 in. to 18 in. high, and has neat narrow leaves, and comes true from seed. There is likewise a pure white kind that is deciduous, the leaves turning yellow in autumn and dying off. It forms a stout root-crown. This is called *A. u. albiflorus*.

**Agathæa cœlestis.**—A tender Daisy-like plant, with blue flowers, used for the margins of beds. There is also a pretty golden variegated form of *cœlestis*. Single plants, groups, or carpets of this are pretty if not very showy. Easily propagated by cuttings in spring or autumn on slight heat; may be raised from seed also.

**Agave americana.**—This and its variegated varieties are useful for placing out of doors in summer in vases, tubs, or pots plunged in the ground, and also for the conservatory or large hall in winter. When the plant flowers, which it does only once, and after several years' growth, it sends up a flowering stem, from 26 ft. to nearly 40 ft. high. The flowers are of a yellowish-green colour, and are very numerous on the ends of the chandelier-like branches. It will grow in any moderately dry greenhouse or conservatory in winter, or even in a large hall, and may be placed out of doors at the end of May and brought in in October. Large plants in tubs have a fine effect out of doors in summer. This old plant was so used long before sub-tropical gardening was known in the land. All the varieties are easily increased from suckers. North America.

About four species of this genus, natives of North America, have lately come into cultivation, which are supposed to be hardy in this country, in which case they will be interesting subjects for the rock garden. These are *A. Deserti*, *utahensis*, *cœrulescens*, and *Shawi*.

**Ageratum.**—Tender plants, but much used for the flower garden, varying in height from 6 in. to 24 in., with pale blue, lavender, or white blossoms, easily propagated from cuttings in spring or autumn raised on a slight hotbed. The dwarf *Ageratums* are among the best of summer flower-garden plants, their blue or lavender coloured blossoms being very attractive when seen in contrast with *Pelargoniums*. The varieties should be increased by means of cuttings, as seedlings usually grow rank and are uneven in height. But the tall old kinds are as well deserving of culture as the dwarfs which have been raised from them.

**Agrimonia** (*Agrimony*).—A genus of the Rose family, most of which are of little garden value.

**Agrostemma coronaria** (*Rose Campion*).—A beautiful old garden flower, and one of the most precious we have; hardy and free in most places, but perhaps most at home in chalky and dry soils, where it seems to establish itself without care. It is a woolly herb, generally about 2 ft. high, covered with rosy crimson flowers and always a bright and welcome object, flowering in summer and autumn, easily raised from seed. Excellent for borders, beds, and naturalisation on banks. It is biennial or frequently perishes on some soils. There is a white and a double red variety; the last uncommon. The generic name is sometimes given to the annual *Viscaria*. *A. Githago* is a large annual plant occasionally grown in botanic gardens.

**Agrostis** (*Cloud Grass*).—A large family of Grasses, but few of which are of importance in the garden. The most desirable are the annual kinds so useful when dried and for preservation with "ever-lasting" flowers. There are some half-a-dozen annual species grown, but the best is *A. nebulosa*, which forms delicate tufts about 1 ft. or 15 in. in height, terminated when in



flower by graceful panicles of spikelets. Valuable for bouquets, vases, baskets, room and table decoration. If cut shortly before the seed ripens, and dried in the shade, it will keep for a long time. Dyed in various colours it is much used by makers of artificial flowers. It may be sown either in September or in April or May. In the former case it will flower from May to July, in the latter from July to September. The seed, being very fine, should be only slightly covered. *A. Steveni*, multiflora, plumosa, and pulchella require the same treatment. *A. Spicaventi* is very graceful, especially if it is grown as well as in the cornfields, *i.e.*, from self or autumn-sown plants.

**Ailantus** (*Tree of Heaven*).—A well-known hardy tree, young plants of which cut down every year give a fine effect in the flower garden, and can be depended upon to do this in all seasons. The *Ailantus* should be kept in a young state, with a single stem clothed with its superb pinnate leaves; it can readily be kept in this form by cutting down annually, taking care to prevent it from breaking into an irregular head. Vigorous young plants and suckers in good soil will produce handsome arching, elegantly divided leaves 5 ft. to 6 ft. long, not surpassed by those of any stove plant. Propagated easily by cuttings of the roots. China and Japan.

**Ajuga** (*Bugle*).—A small family of dwarf plants, flowering mostly in spring and early summer, and having blue flowers. They are inhabitants of pastures, either mountain or lowland, and are easily cultivated in any position, and readily increased by division. *A. genevensis* is distinguished from the Common Bugle (*A. reptans*) by the absence of creeping shoots. The flower-stems are erect, from 6 in. to 9 in. high; the flowers deep blue, arranged in dense whorls along fully half the length of the stem, forming a close pyramidal spike. It is suitable for the front of mixed borders or on the margin of shrubberies, and also for naturalising in rough rocky places, where it will establish itself in the fissures if the necessary soil, moisture, and shade can be secured. *A. reptans*, called *A. alpina*, is an indigenous plant, flowering in early summer. The flowers are blue, but there is a white variety of it, and there is also a form with variegated leaves and one with purplish ones, sometimes used in the flower garden.

**Alecost = Costmary** (*Balsamita vulgaris*).

**Alehoof**, an English name for the ground Ivy (*Nepeta Glechoma*).

**Alexandrian Laurel** (*Ruscus racemosus*).

**Alfredia**.—*A. cernua* is the best known kind. It is a Thistle-like perennial herb 4 ft. to 7 ft. high, but only suitable for planting among rampant perennials where those of a Thistle-like and giant character are grown in groups or otherwise in the picturesque garden. In large places a bed or group of such plants fittingly placed in a quiet nook would have a certain charm for those who love bold form in plants. Division or seeds. Siberia.

**Alisma** (*Water Plantain*).—This genus consists of a few water plants, of which two are desirable for growing with other hardy aquatic plants. *A. Plantago*, a common and indigenous waterside plant, is rather stately in habit, having broad foliage and tall panicles of pretty pink flowers. When once planted it sows itself freely, and is no further trouble except that it is apt to become too plentiful. As the leaves are poisonous to animals, due regard should be taken as to where it is planted. The other kind is *A. ranunculoides*, which grows a few inches high and bears in summer an abund-

ance of rosy blossoms. Both adapted for wet ditches, margins of pools and lakes. *A. natans* is a small floating species, a pretty British plant for collections of hardy water plants.

**Alkanet** (*Anchusa tinctoria*).

**Alkekengi** (*Physalis Alkekengi*).—The winter Cherry.

**Allium**.—Not an important garden family, and somewhat objectionable from the odour of the stems and foliage of many species when crushed; but to growers of collections, there are among the great number of known species some interesting kinds, of which a few like neapolitanum, ciliatum, pedemontanum, and the American rose-coloured kinds, have some claims for their beauty. One or two of the above-mentioned kinds are worth growing for cutting, as their white, starry flowers are in great request in spring. The others are mostly for the curious border or bulb garden, and of easy culture in ordinary soil, the bulbs increasing rapidly. Some kinds give off little bulblets, which in certain situations might make them too free in growth. The following are among the known kinds that are worthy of culture: *A. neapolitanum*, *paradoxum*, *ciliatum*, *subhirsutum*, *Clusianum*, *triquetrum*, all with white flowers, *azureum* and *coeruleum*, both blue, *pedemontanum* (mauve), *Moly* and *flavum* (yellow), *fragrans* (sweet-scented), *oreophyllum* (crimson), *descendens* (deep crimson), *narcissiflorum* (purplish), *Murrayanum*, *acuminatum*, and *Macnabianum* (deep rose). These mostly grow from 1 ft. to 18 in. high, some attaining 2 ft. or 3 ft., but these are not among the species best worth growing for ornament.

**Alsophila excelsa**.—A tree Fern, native of Norfolk Island, where it attains a height of 40 ft., with a crest of fine fronds. It stands well in the open air in this country in shady, moist, and thoroughly well sheltered places. It should be put out at the end of May, and taken indoors at the end of September or early in October, and receive warm greenhouse or temperate house treatment in winter. The same remarks apply to *A. australis*, and probably others of the family will be found to do in the open air where they can be spared that position.

**Alstroemeria** (*Peruvian Lily*).—A distinct and fine genus which does not seem to have found a home in our gardens to the extent that might be expected. Probably this arose from trying kinds not really hardy. One or two kinds, however, are hardy and charming as any flowers on warm soil. *A. aurantiaca*, a charming plant, is so free that it is quite easily naturalised in any loose sandy soils, or even in those of a heavier nature which have been thrown up into banks. Few things are prettier than a colony of it thus grown. *A. Pelegrina* comes nearest to this in freedom, so far as our experience goes, enduring for years in favourable soils.

As regards the culture of the hybrid kinds, and the planting in beds of all the hardy or half-hardy sorts, it is useless attempting their cultivation unless the border intended for them is drained, so as to add to the warmth of the soil, and prevent the tuberous roots suffering from an excess of moisture. The best place in which to grow them is a south border, or along the front of a wall having a warm aspect, where, if the soil is not light and dry, it should be made so. Thoroughly prepare a spot for them at the outset. Dig out the soil to the depth of 3 ft., and 6 in. or so of brick rubbish should be spread over the bottom of the border. Shake over the drainage a coating of half-rotten leaves or short littery manure, so as to prevent the soil from running among the interstices of the bricks,

and thus stopping up the drainage. If the natural soil is stiff, a portion of it should be wheeled away, and an equal quantity of leaf soil, or other light vegetable mould, substituted; to this a barrow-load of sand should be added together, mixing well. The plants should be procured in pots, as they rarely succeed from divisions; and once planted, they should never be interfered with. In planting they should be placed in rows about 18 in. apart, and 1 ft. from plant to plant. If planted during the winter, they should be placed from 6 in. to 9 in. deep, so as to keep them from frost; and a few inches of half-rotten leaves should be shaken over the surface of the soil. Should there be any difficulty in obtaining established plants in pots to start with, seed may be had; and this should be sown in beds where the plants are to remain. The seeds being nearly as large as those of Peas, they may be sown 2 inches or 3 inches deep; and, in order to ensure a regular plant, three or four seeds should be placed in a patch. If well treated, they will begin to bloom at a year old, and will continue increasing in strength and beauty every season, provided they are not disturbed. When grown in masses in this way they are strikingly beautiful, as every stem furnishes a large number of flowers, and as they vary much in their colour markings they make a gorgeous display. While growing and blooming they should have an occasional watering, as, on account of the liberal drainage required to keep their roots in a healthy state during winter, they would otherwise become too dry, and ripen off prematurely. A good mulching of old Mushroom dung or leaf soil is of great assistance to them while in bloom. When going out of flower the seed-heads should be carefully removed, otherwise the plants are apt to become exhausted, as almost every flower sets, and therefore such a load of seed should not be permitted to ripen. In removing the pods, care should be taken not to shorten the stems or reduce the leaves in any way; all are needed to ripen the tubers and form fresh crowns for the following year. The stems should, therefore, not be cut down, but should die away naturally. Anyone having deep light sandy soil resting on a dry bottom may grow these beautiful flowering plants without any artificial preparation, all that is necessary in that case being to pick out a well sheltered spot, and to give the surface a slight mulching on the approach of severe weather. No trouble is involved in staking and tying, as with most plants, for the stems of these are quite strong enough to support themselves, unless in very exposed situations. Independently of the handsome bloom which they make when growing, they are quite worth cultivating for supplying cut flowers, and they last long when cut.

The species in cultivation are

**A. aurantiaca** (*A. aurea*), a vigorous growing kind, from 2 ft. to 4 ft. high, flowering in summer and autumn. The blossoms are large, orange yellow, streaked with red, produced in umbels of from 10 to 15 blooms terminating the stems. A native of Chili and island of Chiloe.

**A. Pelegrina**.—Not so tall or robust as the last; the flowers are larger, whitish, beautifully streaked and veined with purple. There are several varieties of this species, including a white variety.

**A. psittacina** (*A. brasiliensis*).—This kind grows about 1½ ft. high, each stem being terminated by an umbel of from seven to nine flowers, which are smaller than either of the preceding, and green and deep red in colour.

Besides these species, the following may be met with in some gardens, though but seldom: *A. ligta*, *versicolor*, *chilensis*, *oculata*, and *peruviana*.



## MUSHROOMS FOR WINTER.

Mushrooms from the fields appear in the market to-day, but not in any great abundance, a fact which reminds me that the Mushroom is one of the most desirable esculents for winter use, and that now is a good time to begin preparing for its winter culture, at least on our plan, which is as follows: In the month of August a sufficient quantity of friable yellow maiden loam is laid up to last throughout the winter, stored in an airy shed to keep it dry, and a portion is stored in the Mushroom house itself for the first beds. The fibrous part of the soil is not used for the Mushroom, because it is more valuable for other garden purposes; only the first spit under the sod is taken, to which allusion will be made presently.

**Mushroom House.**—The construction of this deserves consideration, for I think for winter culture in our climate it is much more satisfactory to grow Mushrooms in a heated and properly constructed house than to depend on beds in the open air or in open sheds, although the latter are to be recommended as auxiliaries. A Mushroom house may be built anywhere and to any aspect for winter. The roof should be thatched, or if slated it should have a lath and plaster ceiling, or be padded underneath with straw. A dry cellar makes an excellent Mushroom house, or a space under a loft or granary, such as a stable, any place where an equable temperature can be maintained at from 50° to 65°. I prefer shelves to beds on the floor, because on my plan a greater quantity of Mushrooms can be grown from a given quantity of manure than if the beds were placed on the floor and against the walls, as is usual. The shelves also should not be substantial shelves of brick and mortar or strong plank to last a generation, for the securing of a crop is the main object, the appearances secondary. The shelves, then, should be of rough rails or any sort of open trellis work. The bottom and sides should be open, and deep enough to contain about 7 in. of the prepared manure. The reason for this style of shelf is that Mushrooms will not only grow on the surface of the beds, but between the side rails and on the bottom also. This hint I took from having read many years ago, in a well-known book on French gardening, that clever Mushroom growers across the Channel did not make Mushroom beds, but drills, as we do for Potatoes, the Mushrooms growing on the sides as well as on the top, and, moreover, the drills could not have the benefit of the great heating to which English-made beds are as a rule subjected. I have a lively remembrance of my early essays and failures at Mushroom-growing after great and conscientious care in the preparation of the manure and making of the beds, all because the manure got exhausted, the beds were damp, stuffy, and unventilated, or rather un-aerated. How different such things are done in France, and with what result may be seen in Covent Garden.

**Saving Manure.**—I think it a great mistake to throw manure up in a heap to heat, as is or was usually done, for thereby a great deal of the valuable feeding property of the manure is dispelled. I prefer spreading it out in a shed after coming from the stable to dry somewhat, for there is really very little drying effected in winter, nor is much drying necessary if the manure is fresh and has not been exposed to rain. The rougher portions of the straw should be removed, for although too much stress may not be laid on the compact bed, still over much coarse litter must be avoided. When a sufficient quantity of manure is collected to make a bed, I mix it with a proportion of the dry loam above described, and throw the whole up in a heap and wait a day or more until it

gets warm, not hot; I then remove it to the Mushroom house for the purpose of making up the bed. If then I think the manure is not sufficiently dry, I still further mix with it a portion of the soil which has been stored in the Mushroom house, and which has become warmed to the temperature of the house, and then proceed to make the beds. Our shelves being open trellis-work, some of the roughest of the manure is spread over the bottom, and the shelf is filled up and trodden in the usual way. Here it should be said that we would not make up our beds at once with manure fresh from the stable, even if a sufficient quantity were at once available, but always prefer to have it aerated for a time in an open shed. I never made a Mushroom bed with manure fresh from the stable, and therefore cannot say how it would answer, but if my memory serves me rightly the French do so.

**Spawning the Beds.**—First obtain genuine good spawn, which is easily comeatable in the market from some tradesman who is known to have a large sale of the article. Our beds being about 9 in. thick never get over-heated, so that spawning may be performed at once, that is, a day or two after making up, inserting bits the size of small hen's eggs half-way into the thickness of the bed. The surface of the bed we always have soiled in the usual way, but, as has been already stated, the Mushrooms grow out of the parts which are destitute of soil indifferently. Much of the after culture depends on the equable moist temperature which is maintained in the house; if draughts and changes of temperature be avoided, covering the beds is not necessary. A single 4-in. pipe round a house will be sufficient, and care must be taken that fire-heat is scarcely detectable; a mild, natural heat like that of a summer's evening is what should be aimed at. No doubt much of the success attending the French culture of the Mushroom in the Catacombs of Paris is attributable to the mild equable temperature not artificially communicated.

HIBERNIAN.

## RELATIVE HARDINESS OF NEW VARIETIES OF PAMPAS GRASS.

SOME three years ago I obtained from Messrs. Rougier-Chauvière, of Paris, six new varieties of *Gynerium* selected by them from a large number of seedlings raised by growers in their neighbourhood, and said to be distinct the one from the other and very beautiful. The last two extraordinarily severe winters have inflicted severe punishment on these *Gyneria*, completely killing those named respectively *Gloire du Museum*, *Louise Carrière*, and *Enfant Chéri*; the one named *Chapeau Chinois* suffered much, but is now recovering; the one named *Elise Carrière* suffered much less, and has now a fine vigorous circle of young growth all round the plant (this seems the most vigorous grower of the lot), while elegans is almost altogether uninjured, and is now showing well for bloom. This, then, may be considered the only entirely hardy variety of the lot; it is also a very early bloomer, and its inflorescence is pure silvery white and very beautiful. The other varieties all bloomed with me last autumn, but not till so late in the season that the inclemency of the weather prevented the full development of their heads of bloom, and hindered me from forming any accurate opinion of their respective merits or beauties. I have since added three more varieties, also of French origin, to my collection, which have been highly recommended to me by those who have seen them as most distinct and beautiful, but they have not yet bloomed with me; they

are named—*Soyeux*, which seems fairly hardy, and is now showing flower; *Marabout*, which has suffered more than the last-named; and *Roi des Roses*, which was all but killed, but is now recovering. I may add that the beautiful golden variegated-leaved variety, whose inflorescence is of a beautiful feathery white and very graceful, has proved here to be quite one of the hardiest of the whole family, being almost uninjured and now showing well for bloom. My strong tuft of the beautiful and most distinct *G. jubatum*, from Chimborazo, though almost killed, has recovered wonderfully, quickly, and more completely than I had ventured to hope for, and is now showing several bloom heads.

W. E. GUMBLETON.

## PLANT LABELS.

At the recent exhibition I showed my labels in the hope that at least I should have the benefit of the opinion of the committee as to whether I could have a better or cheaper label than I use and have used for several years. My hopes, however, are baulked. I should have been content if they had reported which one was the best, and which one was the cheapest, for though I do not at present see that the label I use in any particular comes short of the requirements desired, yet I should like if possible to get a cheaper one. Simple wooden labels, however, treated with paint, paraffin, or other preparations seem to fail, from the manner in which they become weathered, and also lifted out of their places by frost. The latter failing is serious when they are used for species nearly alike, and which for obvious reasons amateurs like to grow side by side. In such a case, after a thaw, to find two or more labels blown several feet from where they ought to be is most galling. Doubtless such results have suggested the methods of adopting stems or supports made of wire and iron. The committee suggest wooden labels treated with paraffin, at which, I must say, I am surprised; at the same time they state objections to such labels which in themselves are sufficient reasons for discarding them for permanent use. Further, such a label would have to be stout and long to keep it in the ground in winter; and, again, how many things do we know, such, for instance, as *Rhododendron*, *Chamæcistus*, *Soldanellas*, alpine *Gentians*, and hardy *Orchids*, that would be poisoned by paraffined timber at their roots? We should indeed make our gardens like graveyards if we kill the plants to secure what even then will be questionably good labels. Ordinary wooden labels are useful in frames and during summer and the autumn transplantings, but as soon as the shortening days drive us out of our gardens, the longer evenings (before winter sets in) should be spent in preparing more reliable ones to replace the temporary wooden ones.

**Zinc labels** written as described by Mr. Fraser (p. 176) are as clear now as when I wrote them, nearly four years ago. I, too, found that the ink (bichloride of platinum) did its work better when used strong; indeed, I use mine even stronger than Mr. Fraser's, but that is, perhaps, unnecessary. A quicker way of preparing the zinc than rubbing with emery paper is to rub it with a rough cloth dipped in ammonia. I use the labels suspended from an "eye" in wire and in grip-slided supports, so that they are always clean, and the prongs of the supports are useful for indicating the size and position of dormant bulbs or other roots.

I am somewhat puzzled as to how we are to get at the ideal label of those who ask for a clear and legible label to be easily read without stooping, and not conspicuous. I will say no more about that, only that I for one will give



it up. Zinc labels may easily have the writing ground off them on a grindstone, such as is used by cutlery grinders; they should then for a moment be put on the revolving stop. This may seem tedious, but it is done as quickly as a gardener trims an old wooden tally for second use, though the machine is not so handy as the knife. My plan is to send them to a grinder who makes them equal to new, at a trifling cost.

Kirkstall.

JOHN WOOD.

## EDITOR'S TABLE.

THE SCARLET WINDFLOWER (*Anemone fulgens*) comes to us in flower, small, but very vivid and fine in colour.

TWO LARGE EVENING PRIMROSES.—*Oenothera taraxifolia*, of a delicate pink colour, very beautiful. *O. macrocarpa*, of a fine sulphur; both good flowers of the season.

VERONICA LONGIFOLIA SUBSESSILIS.—This beautiful Speedwell comes to us under another name—*A. Hendersoni* as well. It is the best of the family, and should be in every garden.

THE WHITE SCOTCH HEATHER.—A beautiful pure white Heath, of which excellent use might be made on the rock garden, or heathy wilderness. From Llandegai.

THE GOLDEN HEATHER.—Not a variegated, but a yellowish form, which promises well. Mr. Edwin Jackson says its hue is constant and good. The mossy Heather is also very pretty.

DIPLOPAPPUS CHRYSOPHYLLUS.—A shrub with golden buds and leaves and shoots comes from North Wales. Mr. E. Jackson says it has been beautifully golden throughout the season.

DOUBLE OLEANDERS from Paris remind us of things we seldom see done well here. They like a blazing sun, but neat plants in pots should not be impossible in a warm, well lighted house.

DOUBLE HEATHER.—A double form of the common Ling or Heather we should not expect to be pretty, but it certainly is so, judging by one spray from Mr. E. Jackson. It also looks as if the effect of the plant would be good. The unopened buds are charming.

A PURPLE-LEAVED PLUM (*Prunus Pissardi*).—A very interesting claret-coloured Plum comes from Messrs. Hooper, of Covent Garden, a shrub distinct and well coloured. What its effect in the mass will be one cannot say, as we only judge from one healthy shoot.

MONTBRETIA CROCOSMEFLORA.—A very promising plant with orange and red flowers, very bright, but somewhat withered owing to its journey from Nancy without the protection of the oiled paper or other material friendly to travelling flowers. From M. Lemoine.

AUTUMN-FLOWERING GENTIANAS.—Amongst these are *G. Andrewsii* and *G. affinis*: the white (*G. asclepiadea alba*) perhaps the best. These autumn Gentians should have a fair chance in a good soil, and, to produce a good effect, not be shaded by other things. From the Hale Farm Nurseries.

THE MARSH OX-EYE DAISY (*Chrysanthemum lacustre*).—This large Ox-eye Daisy, which was nearly lost a few years ago, is now more plentiful and comes to us from Glasnevin. It is a bold, strong plant, but not so fine in habit as the later and very tall *Pyrethrum serotinum*.

CLETHRA ALNIFOLIA.—A quiet flowering bush for moist nooks near water, and for peat soil anywhere, flowering late when shrub flowers are scarce. It is an old shrub of easy culture, but not often seen. Would grow freely about moist ditch banks. From Messrs. Osborn.

ALPORT'S HEATHER comes in fresh and bright flower from North Wales—a lovely form of our native Ling, excellent for various purposes; and even outside the garden in many places one might establish a colony of it where young plants are to spare. The colour is so deep that it would tell well among the common Heather.

HEDYCHUM GARDNERIANUM in the open air and in sturdy handsome bloom comes from Mr. J. Wilkinson, of White Hart Lane, Tottenham, in whose garden it has bloomed well in a bed of fine-leaved plants. A valuable plant in the border of a cool house, but a greater novelty in the warm, sheltered flower garden.

FOUR KINDS OF COREOPSIS.—Three of these are plants of remarkable merit, but very like each other. *C. tripteris*, another with the petals not imbricated, is the less desirable. The colour of *C. tenuifolia*, *C. auriculata*, and *C. lanceolata* is of a deep golden yellow—the last the best of the set, and a good border perennial. From Mr. Ware, Tottenham.

LOBELIA FUELLI.—This noble hardy plant (also known as *Tupa*) comes from Glasnevin. We have never seen it really well grown out of the Dublin Gardens. It was superb as a plant at the College Gardens there some years ago. Would be desirable to raise from seed in the hope of improving the flower. It perishes in severe winters.

MRS. BATEMAN'S LILY (*L. Batemanæ*).—A handsome head of flowers of a light orange-red; a very distinct flower. With this also Wallace's Lily (*L. Wallacei*), nearly the same in colour, but spotted towards the base of the petals and smaller. Mrs. Bateman's Lily is a great aid to those who use it well. From Mr. Ware.

GRASS OF PARNASSUS.—Now dotted freely over the hill meadows of much of Central Europe, this plant comes to us from a London nursery (Mr. Ware's). There should be no difficulty in establishing it in any moist place where the vegetation is not luxuriant. It is now generally grown in the artificial bog.

A NOBLE ORCHID.—*Odontoglossum vexillarium* from Dr. Patterson, Bridge of Allan, with darker flowers than usual, and a branched spike. A remarkable Orchid. In some parts of Scotland, I am told, some of our familiar garden flowers will not open their blossoms, but Scotland certainly has all that is needed for perfect Orchid culture.

THE WHITE MEDITERRANEAN HEATH.—A great number of pretty silvery spikes of various white Heaths have recently come to cheer us, but this from Glasnevin is the tallest and best. A shrub well worth a good place from many with gardens in mild districts where it may escape severe frosts. The various beautiful hardy Heaths now in flower offer much good, but little used material for cut flowers.

TROPEOLUM PENTAPHYLLUM.—Now-a-days when some other colours are thought more worthy of notice than the mere staring contrasts which were the rule in our gardens some years ago, this old *Tropeolum*, with its quaint

marking and curious association of quiet and bright colours, will probably be seen again. We remember its being beautifully grown and placed by the late Mr. Robert Fish at Putteridge Bury.

THE VENETIAN SUMACH, or Smoke Bush, from Straffan is a very welcome addition to our table "flowers." It seem to thrive in Ireland. An excellent shrub well placed, and not lost in the weariness of the common shrubbery.

COSTUS SPECIOSUS.—A fine stove plant of the Gingerwort Order, which Mr. Moore grows in the Victoria house, Glasnevin, where it is much admired. Delicate and singular in colour of flower and bud, and a good plant where grown into bold and free plants.

THE MEADOW BEAUTY (*Rhexia virginica*).—This bright and singular little northern member of a warm region tribe of plants comes from Messrs. Osborn, of Fulham, whose nursery is the only place about London in which we remember seeing it grown really well in any quantity. It likes peaty soil in open spots. How would it get on in a wild bog? It is an interesting little plant when grown and seen in a good group.

MR. JAMES SMITH, of Darley Dale Nurseries, near Matlock, has a fine collection of varieties of the common Heather. Some of the very dwarf and pigmy varieties are useful for the rock garden, but the most valuable forms are neither the dwarf nor those with any kind of variegation or deformity. The strong white kinds—an excellent one called *alba minor*, Hammond's form and *tenuis*; the bolder and stronger forms will in the future be most beautiful because they lend themselves so well to picturesque gardening. The common Heather seems to vary more than any, but the Scotch Heath is good in any stage.

DISAS AT STRAFFAN, KILDARE.—Noble flowers of the two best varieties of *Disa grandiflora*, *D. g. superba* and *D. g. Barrelli*, grown by Mr. Bedford, at Straffan, Kildare. Straffan is, Mr. Burbidge says, a most interesting garden for fruit trees, rockery, and Orchids. Plants hardy and tender of all kinds have there a place and tender care. The Hon. Mrs. Barton is a great collector, and many a Pyrenean beauty has opened its flowers at Straffan for the first time under an Irish sky. These *Disas*, large pans of them, are now in vigorous health, and are flowering in a cold house. The pan of *Barrelli* is superb, and as seen in the mass even more distinct than the individual flowers would seem to show. The contrast between the colours of the two varieties of the same plant is beautiful. We should like to show these noble forms in colour.

THE COMMON HEATHER AND ITS FORMS.—Those who improve, or add to the varieties of, our hardy native plants are doing good work for gardens. A most interesting series of varieties of the common Heather show how a plant, generally uniform in its aspect and stature, throughout the country varies, and how easily its more valuable forms may be secured for gardens. These beautiful Heaths are frequently planted in places where they have not the slightest chance of doing well or looking well as edgings to beds of tall shrubs, but properly placed in open spots where they could grow freely and contend with the vegetation, they would be worth attention. To grow them in beds by themselves or on a certain part of the rock garden is also desirable, but the bed of Heaths generally ends in being a stiff, poor



business. A good way would be to use them as "ground" shrubs, taking a hint which is often given us where they grow wild. Indeed, we remember that Mr. James Backhouse surfaced one of his shrubberies in this way. In many cases where it is desirable to keep choice shrubs or young trees open they might well start from a carpet of Heath. In Surrey we often see tall Pines thick above a beautiful garden of Heather. There are untold "capacities" in this plant if people will only find them out, but the dotty, labelling business will never do!

**SHRIVELLED FLOWERS.**—Half the pretty things sent me come shrivelled up from the want of a bit of oiled paper, or lead paper, or any other simple plan to keep their moisture about them. Even a bit of wet blot-sheet and of wet moss within it keeps the life in the flowers for considerable distances.

#### NOTES FROM NORFOLK.

**Lombardy Poplars.**—It is surprising how few examples of this tree have withstood the winter; I have had an opportunity of witnessing its results in Cornwall, Devon, Somerset, Cambridge, Essex, Herts, Suffolk, and Norfolk, and everywhere the trees are, I think, more or less killed. In Somerset, however, they are less injured than anywhere else; there it appears as if only half the tree is killed, the other half being full of life and leaf. Not far from Dersingham there stands a very old tree of this Poplar quite dead.

**The Mountain Ash.**—This, when fully in fruit, is really a very ornamental tree, and one which I rarely saw in Cornwall. It is, however, common here; there are two in the plantation to the right and immediately opposite the entrance to Sandringham House; there is also another not far from here in a cottage garden, a lovely sight, the tree being beautifully symmetrical and evenly balanced.

**Herbaceous borders in Victoria Park.**—Perhaps it may not be generally known, but it is nevertheless a fact, that a "Special Reporter," hard up for something to write about, wandered to the Victoria Park a few days ago to see what was to be seen and to criticise what he knew nothing about. I will give the paragraph *in extenso*: it would be spoilt if condensed, viz., "At this point commences a herbaceous border three-quarters of a mile long, which, strangely enough, I do not remember to have seen mentioned before, notwithstanding that the collection was formed in contradistinction to the carpeting and other styles of bedding adopted in the park. I was curious enough to scrutinise this border minutely, and to compare the effects such plants yielded, occupying as they do an elevated sloping situation where what beauty (and I could discern little) they possess is seen to the best advantage. However, there they are, a huge mass of plants selected with a view to having flowers in season every month in the year, and but for the sprinkling of annuals in flower amongst them, the display would not have been startling, and this to say the least of it is a charitable description." What a remarkably charitable reporter! He does not name any of the herbaceous plants, but he goes into ecstasies over a bed of *Pelargonium* "edged with a dense, deep band of *LOBELIA pumila magnifica*." He also admires the Prince of Wales's Feather bed, and even "spectacle" shaped beds. Now it is impossible for a herbaceous border of the extent spoken of to look anything but magnificent if dealt with in a fair and proper manner. To my mind there is nothing less natural than carpet bedding and its kindred systems, and nothing more interesting or enjoyable than a ramble through a garden in which Nature is allowed to have her own way.

**Naturally-grown v. wall-trained Plums.**—I know of a Plum tree which, until last year, had been growing against a wall, and

which, remarkably enough, failed to bear fruit. Last autumn it was planted out in the open, and now it is perfectly laden with fruit. I cannot understand why people are so fond of growing fruit trees against walls when six times the quantity of fruit might be obtained from them if grown naturally. Another detestable sight is to see a garden walk edged with espalier Apple and Pear trees cramped and confined into a miserable existence.

**Gypsophila paniculata.**—This is rarely met with in gardens. It is described in "Hardy Flowers" (p. 137) very accurately, but it does not flower as early as there mentioned, viz., from midsummer to August. It is only now flowering in the Lily Nursery near here. It is quite surprising how little of this is grown in England; while for bouquet making it is grown around Berlin by the acre.

**Ailantus glandulosa** (Tree of Heaven) is certainly a questionable name for this tree, but it is nevertheless strikingly beautiful, and a tree which will bear the severity of even a Norfolk winter. It is now flowering in the nursery just named, its dense racemes of a curious reddish hue being very pleasing, especially when backed up as they are with light green foliage. W. R. Dersingham.

#### NOTES FROM DUBLIN.

**Flame or Smoke Tree** (*Rhus Cotinus*).—One of the finest of all the many interesting outdoor objects in the gardens at Glasnevin just now is a specimen of this Flame or Smoke Bush 10 ft. in height, and about 15 ft. in diameter. No doubt there are larger specimens in the country, but the charm of this one is its perfect garniture of cloud-like spray. Each plume is most delicate and fairy-like, rosy in front, shading to yellow behind. A lady to whom I showed the lovely spray given me by Mr. Moore exclaimed, "Whatever is it? It is like Marabout Feathers! I send a few clusters of spray, but they but poorly show the glow of rose colour afforded by the bush itself and the surrounding greenery. The well-worn turf around the plant attests the interest afforded by it to visitors to the gardens."

**Gladiolus purpureo-auratus hybridus.**—This showy plant is now flowering here, from a bulb given to me by Mr. Gumbleton; it grows nearly 5 ft. in height, and bears a stout branched spike of lemon-yellow flowers, slightly curved and bell-shaped (the segments imbricating closely). The crimson blotches on the lower segments give brightness and interest to the flower. The habit reminds one of *G. purpureo-auratus*, which is also in flower, but the hybrid form is by far the more vigorous and showy, being, indeed, but very little, if at all, inferior to M. Lemoine's beautiful hybrids. It was figured some time ago in THE GARDEN. The crimson spikes of *E. brengleensis* interspersed amid a clump of *Lilium auratum* are now brilliant, the whiteness of the big Lily flowers being of course much enhanced in purity by the vivid contrast thus afforded.

**Flowers for vases.**—Mr. D. T. Fish represents the height of the vase to which I alluded. I clearly stated it to be 1 ft. in height, and Mr. Fish states it to be 6 in. high only. "I protest most earnestly against a man's opinion of that which he hath not seen," says an old writer; and so also do I. What would be thought of a critic who criticised a picture, a poem, or a play of which he had only seen a meagre description? I have heard much of Mr. Fish's garden at Bury St. Edmunds, but would it be fair or just to offer criticism on it having never seen it? No, no, Mr. Fish; come and see the vase and its contents and then you shall criticise it to thy heart's desire.

**Cattleya culture.**—The question whether *Cattleyas* are best grown in pots or on blocks has again cropped up, and the weight of opinion amongst growers is that they do best in pots. The whole thing seems to rest pretty much on the temperature of the house in which the plants are

grown, and the attention as to watering which can be given to them. No *Cattleya* will succeed long on a block if the house be cool and airy, but in a warm close house they will succeed on blocks as well as when grown under any other style of treatment. I do, indeed, know two or three collections of *Cattleyas* and *Lælias* that were fairly and thoroughly ruined by being torn out of pots and placed on blocks and the forks of tree trunks. This is not a fair trial of the question, however. In growing Orchids on any fresh plan I would never start with existing specimens, but with newly imported plants. This is the only safe way in trying fresh methods, either as applied to pots *versus* blocks, or to warm *versus* cool treatment. F. W. B.

#### FERNS IN A SMALL TOWN GARDEN.

It would not be easy to find a better instance of successful Fern culture in a small space than is to be seen in a plot of ground in front of one of the model buildings in the outskirts of Edinburgh. Three cold frames are partly sunk in the ground, and a small tub is also sunk to the brim, and covered with a thick sheet of glass, lightly painted to give further shade, as are also the glass covers of the frames. In one of the frames are two fine specimens of *Todea superba*, each 45 in. through. A plant of *Todea pellucida*, with fronds about 22 in. in length, has thirteen this year's fronds. This is a peculiarly good specimen, not so much from its size, as from the colour and freshness of its fronds and the graceful way in which they droop, which is shown all the better, as the plant is seen from above. These *Todeas* are grown in heavy turfy loam, with charcoal and bits of sandstone and brick to keep it open; they are watered once a day in summer, but not in winter. Amongst other filmy Ferns grown here are *Trichomanes reniforme*, with fronds 3 in. across; *T. radicans*, 2½ ft. through; *T. radicans Andrewsii*, *Hymenophyllum dilatatum*, *H. angustatum*, and *H. demissum*, the latter fully 2 ft. through. These are grown in pans filled with sandstone and crocks, with very little soil. For most of the following Ferns, loam, leaf-mould, and sand are used, and their luxuriance proves that the treatment they receive thoroughly suits them. They are grown in pots in a cold frame. *Asplenium fontanum* has fronds some of which are 7 in. long growing as thickly as possible, and 14 in. through; *Asplenium germanicum*, and *A. germanicum acuti-dentatum*, *A. lanceolatum microdon*, about 20 in. through, with some fronds 1 ft. long; and *A. septentrionale*, nearly 1 ft. through. Three other beautiful *Aspleniums* are *Trichomanes incisum*, and *incisum lobatum*, and *Trichomanes confluent*, the fronds of which are nearly 1 ft. long. *A. Trichomanes Moulii* is well grown; also *Lomaria spicant crassicaule* and *L. spicant cristatum*, *Cystopteris montana*, and *Polypodium vulgare elegantissimum*, a very pretty variety; but amongst the best grown of all these Ferns are *Woodia hyperborea*, with fronds 6 in. long, and *W. ilvensis*, some of the fronds of which are 9 in. long, and the plant 17 in. through. These measurements will give some idea of the vigorous way in which these Ferns grow, and prove what care can do, with the simplest appliances, and in even the smallest town garden. C. M. OWEN.

**Athyrium Filix-femina Victoriae.**—From the account given by Mr. Saddler, in the Edinburgh Botanical Society's Transactions, of the discovery of the Victoria variety of this Fern, it is evident that it was not found near Montrose, as lately stated in THE GARDEN. The original plant, still grown in the Edinburgh Botanic Gardens, was found in 1862 by Mr. James Cosh, growing wild by a roadside in Stirlingshire, near Loch Lomond.—C. M. O.



SELWOOD COTTAGE, NEAR FROME.

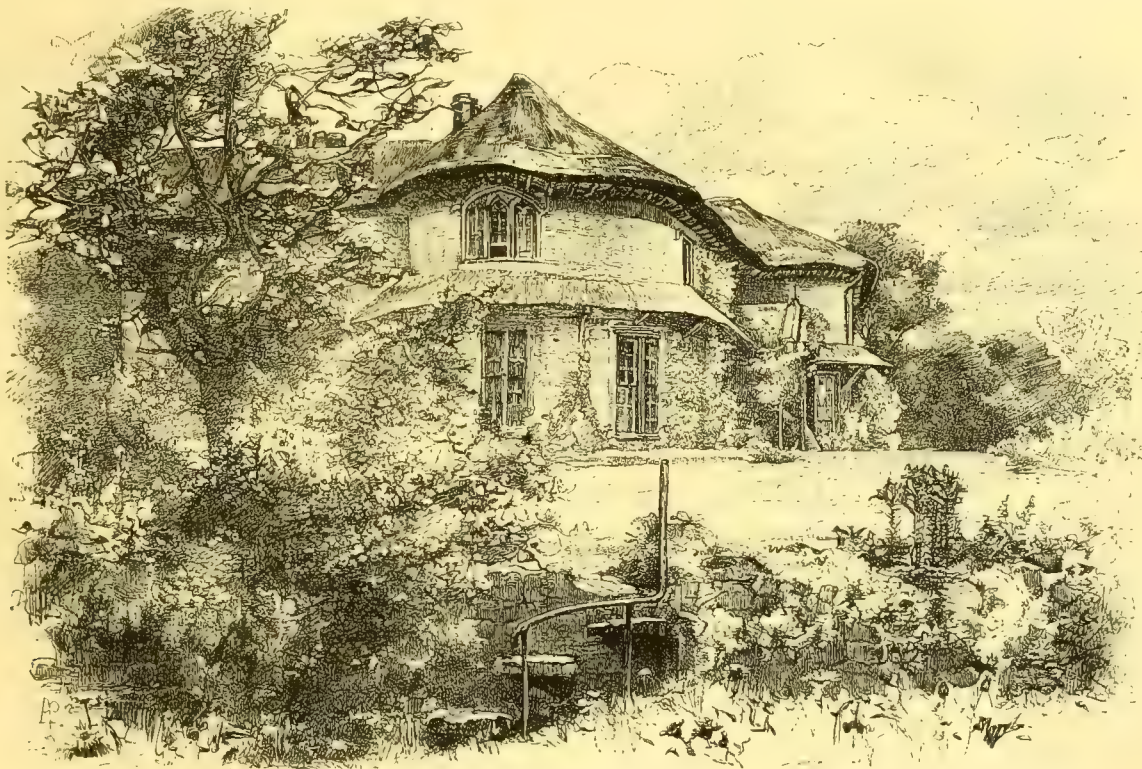
THIS pleasant country house, the residence of Mr. T. B. Sheppard, is placed on the brow of a hill overlooking a pastoral Somersetshire valley. The trees by which it is protected from the north winds form an effective background to the thatched roof and verandah, and from many points of view it forms one of the most pleasing features in the peaceful landscape, with which it is entirely in harmony. The garden has long been well cared for; it is planted with hardy flowers which, coming up year after year in the well-known spot, become as much a part of the home as the house itself. While the collections of hardy perennials had disappeared in most of our nurseries, they were still cultivated by the late Mr. Wheeler, of Warminster, and from his garden

found its way into the branches and concealed its bare ugliness with a mass of yellow blossoms. This garden shows how much individuality and interest may be displayed in quite a small space when thought and loving care are bestowed upon it. A. P.

MELBOURNE BOTANIC GARDEN.

MELBOURNE, the capital of Victoria, possesses large public gardens, parks, and reserves; these, however, are not confined to Melbourne and its suburbs, for in nearly all the towns and provinces of Victoria extensive reservations of land have been made from time to time by the various governments for the purposes of laying out gardens and recreation grounds for the use of the public. In and around Melbourne, however, are to be seen the finest of our public

suburb of South Yarra by Anderson Street. The area of the garden is nearly one hundred acres, being as large as the botanic gardens of Sydney, Adelaide, and Brisbane combined. During the past eight years it has been under the care of Mr. Guilfoyle, who may be said to have remodelled the garden — this was found necessary in order to make it both attractive and useful as a scientific institution, and visitors now do not fail to appreciate very heartily the transformation. This is evidenced by the thousands of people who throng thither on Sundays, holidays, and during ordinary week days. Straight, narrow, rough walks have been obliterated; old bluestone edgings lining the pathways have been removed; small rectangular-shaped beds dispensed with; and dense masses of wild vegetation cleared away in order to make way for a higher class of landscape gardening. The principal features of the garden now are long, wide, sweeping, red-gravelled walks; extensive



Selwood Cottage, near Frome.

they were introduced into many of those in the neighbourhood. In that at Selwood Cottage are several plants which, until the recent revival in favour of hardy flowers, were almost unknown. The small but well arranged hardy Fernery is very good, and a line of stones overgrown with Ferns and yellow Welsh Poppy (*Meconopsis cambrica*) makes a very beautiful edging to the shrubbery. The garden is protected by a ha-ha, the wall of which has become beautiful with a luxuriant growth of rock plants; this, backed by a border of Lilies and such like flowers, forms the foreground in the sketch; the projecting stones and iron hand-rail make a convenient and picturesque stairway to the fields beyond. When last there I noticed an *Araucaria*, hideous and stunted as an *Araucaria* sometimes is, quite glorified by a healthy plant of Canary flower, which had

gardens. We have close to the city the Treasury and Fitzroy Gardens, covering together an area of about 70 acres, nicely laid out, and planted with avenues of both evergreen and deciduous trees. On the north side of the city we have the Carlton Gardens, covering an area of 66 acres, and in which stands the International Exhibition buildings. These gardens have been specially cared for of late, and have been a great source of attraction to the public generally. We have, too, the Flagstaff Gardens in West Melbourne, as well as other gardens and numerous parks at very short distances from the city. The principal garden of Victoria, however, is the Melbourne Botanic Garden, situated about a mile from the city, and on the south side of the river Yarra. The northern boundary is formed by the river; on the west and south sides the garden is bounded by the Government House grounds and domain; whilst on the eastern side it is divided from the

green turfy undulating lawns; picturesque views to be had at almost every step, owing to the effective grouping and planting of trees and shrubs; the lake, with its islands ornamentally planted with tropical vegetation, rustic bridges, rockeries, &c.; and a thorough system of scientific nomenclature, classification, and arrangement of plants. Entering the garden on the west—the side nearest to St. Kilda Road—we come upon what is known as the Western Lawn. On this lawn, which is several acres in extent, and near the pathways skirting it, have been grouped in variously shaped beds no fewer than 21 Natural Orders of plants. In addition to these groups, which contain some very fine specimens, there is arranged on this lawn, in an ornamental bed, a collection of Australian small flowering plants, as well as several groups of ornamental and coloured foliage plants. The whole of the groups in this locality, as well as those on the other lawns, have been so arranged



as to harmonise with and increase the picturesqueness of the place and the landscape views to be had from other parts of the grounds. At one end of the Western Lawn has been arranged a Camellia ground, which contains a large collection of these handsome flowering shrubs. Near the western entrance are the enclosed grounds around the director's house. These have been tastefully laid out in ornamental groups and lawns. Advantage is taken of this enclosure to grow any choice or rare plants until they are either sufficiently large to be transplanted to the general grounds, or to be propagated from. Fine specimens of various Palms, such as *Chamerops*, *Phoenix*, and *Braheas*, may be seen on the small lawns here growing luxuriantly, as well as some large specimens of our native *Eucalypti*. Near the Western Lawn, too, is the laboratory, where from time to time various experiments are carried on in order to test the use and products of plants, as well as the making of preparations and obtaining extracts from them. The usefulness and necessity for such an establishment in connection with a botanic garden were to be seen in the large collection of samples of woods, fibres, tows, oils, resins, papers, and other preparations and extracts forwarded to our late International Exhibition, and for nearly all of which first-class certificates have been awarded. Close to the Western Lawn is a large triangular-shaped flower bed, in which throughout the year a succession of bloom is kept up. Along the margins of this bed are planted the dwarfier flowering plants, while large collections of Dahlias, Roses, Chrysanthemums, and similar plants occupy the more central portions. Although there is always a fair show of flowers, this bed at times is one mass of gorgeous colours. On the western side of the lake a large collection of the *Eucalypti* of this and the adjacent colonies has been planted on the hill; also a collection of the various Conifers—*Araucarias*, *Cryptomerias*, *Cupressus*, *Junipers*, &c. Near the large flower bed just alluded to is a conservatory filled with an extensive collection of succulents, such as Cacti and the like. This house is close to the original class grounds, in which are grouped in small beds the Orders of plants according to the Natural system, but which is so overcrowded now that it will be necessary to remodel it.

**The Buffalo Lawn**, so called on account of the beautiful Grass of that name (*Stenotaphrum glabrum*) of which it is composed, is near the Cactus house. This lawn,  $7\frac{1}{2}$  acres in extent, undulates in a slope to the edge of the lake. Here are arranged a number of ornamental groups of trees and shrubs, including some fine specimens of *Coryphas*, *Livistonas*, *Enccephalartos*, and other highly ornamental and coloured-foilage plants, while dotted about here and there are some fine examples of *Eucalypti*, *Acacias*, and *Casuarinas*. The Grass of which this lawn is entirely composed is one of the most suitable for the climate, as it requires very little water during the summer, and at all times of the year presents a beautiful green appearance, while walking upon it may be likened to treading on a piled carpet. Running into the waters of the lake and close to the Buffalo Lawn is

**The Fern Gully**, which Mr. Guilfoyle has so greatly beautified. The length of the gully proper is about 300 ft., the average width of the Fern ground on either side being about 50 ft. A meandering pathway some 900 ft. in length crosses and recrosses the gully every here and there. Along this narrow pathway one passes under the beautiful green fronds of our native tree Ferns, *Dicksonia antarctica*, *Alsophila australis*, &c., the trunks of which stand like so many columns on either side. A large number of these and other tree Ferns of various heights, from 1 ft. to 15 ft., many of which are indigenous to New Zealand and Norfolk Island, are planted along the watercourse as well as promiscuously over the whole of the Fern ground. On the trunks of the tree Ferns, and also in the forks and on the stems of most of the large umbrageous trees which have been placed about in order to provide shade for and protection from undue

exposure of the Ferns, have been fixed hundreds of the Queensland and New South Wales epiphytall Ferns, *Platycerium grande* and *alcicornis* (the Elk's-horn and Stag's-horn Ferns), and *Asplenium nidus* (the Bird's-nest Fern); while all over the gully some thousands of hardy outdoor Ferns, including *Lomarias*, *Aspleniums*, *Aspidiums*, *Blechnums*, *Doodias*, *Polypodiums*, *Pteris*, &c., have been planted extensively as an undergrowth. A perforated pipe is placed all around the edge of the Fern ground, by which the place is conveniently watered by the mere turning on of taps. At almost any point along the narrow meandering pathway beautiful vistas may be had, while from either of the large walks which pass across the gully, charming views of the Ferns, with glimpses of the lake and rustic bridges in the distance, serve to make some of the most beautiful natural pictures one could desire to look upon.

**The Victoria regia** (Royal Water Lily) house is close to the head of the Fern gully, and proves a source of attraction to thousands of visitors when the plant is in flower, for although the house is not nearly large enough for this rare and most beautiful of all aquatic plants, still some fine large leaves and fair sized flowers are at times to be seen. Near this aquarium Mr. Guilfoyle has had a triangular shaped group formed, containing a vast collection of hardy, variegated, and coloured foliage plants.

**The Lake**, into which the water of the Fern gully flows, covers some 10 acres. Several islands stand out in bold relief in it in various places. These are planted with *Melaleuca* (the native Tea tree), *Pampas Grass*, *Cordylines*, *Bamboos*, and other handsome foliaged plants. In one portion of the lake some large plants of English Water Lily (*Nymphaea alba*) are growing very luxuriantly, and when in flower during summer have a pretty effect. The water of the lake is mainly supplied from the Yarra through water gates, which as necessity requires may be opened or closed for the ingress and egress of water. A long embankment, about 500 yds. in length, formed some ten years ago, skirts the northern boundary of the lake between it and the Yarra, protecting the garden from the periodical floods of the river. Several promontories have been formed around the margin, and planted with ornamental trees and shrubs, while surrounding a large portion of it is a rockery furnished with numerous suitable plants. Two very pretty rustic bridges, joining the east and west promontories, may be seen from various parts of the garden, and help with the groups of fine foliaged plants on either side of them to increase the picturesqueness of many of the views. On the southern edge of the lake is one of three rustic summer-houses, which, as well as the bridges, we hear, were designed and built under the direction of Mr. Guilfoyle. The houses are all octagonal in shape; the floors consist of round sawn blocks of wood sunk perpendicularly in the ground. The outsides are built up of short pieces of Acacia wood fixed on diamond-shaped panels to the uprights. Around the sides of each house at short intervals are gable-shaped openings, while the roofs are composed of thatch. The inside is lined with boards, the openings being ornamented around in a rustic fashion. Against the wall a seat capable of accommodating some 40 or 50 persons is fixed. The kiosks afford a pleasant retreat during summer, and serves as a shelter during rainy weather. Near the rustic house on the edge of the lake is the

**Central Lawn**, the last laid out by the director. Some of the largest and most interesting of the Natural Orders are grouped here, viz., *Myrtaceae*, *Leguminosae*, *Iridaceae*, *Liliaceae*, and *Caprifoliaceae*. The first includes our *Melaleucas* and *Eucalypti*, the second the *Acacias*, some large specimens of which and also of the *Eucalypti* may be seen about the garden everywhere. This so-called central lawn is situated on a hill gently sloping towards the lake, and on the opposite side to the Buffalo Lawn. In addition to the groups of Orders, there is a well-designed group containing ornamental and coloured foliaged and small

flowering plants. Between this and the lake a gigantic and extensive rockery has been rebuilt, in the construction of which some very heavy boulders were used. Large specimens of variegated Agaves, Aloes, *Fourcroyas*, and other species similar to these have been placed at prominent points, while all about the rockery a large collection of rare kinds of the Cactus tribe has been distributed. By the effective and judicious arrangement of foliage, Mr. Guilfoyle has made this to form a massive, imposing, and effective scene. Close by is the propagating department, in which are three long glasshouses (all artificially heated), numerous plant frames, and nursery and potting sheds. Here are raised and grown the various exotic and other plants for the stocking and keeping up of a successive floral display in the conservatories (which are daily open to the public), as well as thousands of trees and shrubs, &c., for distribution about the grounds and to other public gardens and similar institutions in various parts of the world. Bordering on the central is

**The Eastern Lawn**, occupying about 10 acres. I might here state that the whole of the lawns are kept in order by means of a one-horse mowing machine, *Shank's Patent*, and that during the whole of the year, and more especially in summer, they present a beautiful and refreshing appearance. Grouped in several beds here (cut out in the Grass), is a collection of trees and shrubs, &c., of Queensland and New South Wales, among which are some fine examples of the vegetation of these colonies, as seen in the form of the various *Ficuses*, *Macadamias*, *Araucarias*, *Sterculias*, *Eugenias*, and other plants. In close proximity to these groups the two Natural Orders of Palms and Cycads are arranged, and in each of which are some good specimens of those graceful plants, both Australian and exotic. The Orders *Melastomaceae* and *Amaryllidaceae*, too, are grouped on this eastern lawn. In the latter amongst others, are some large plants of *Fourcroyas*, *Doryanthi*, *Crinum*s, *Agaves*, &c. Near here is the orchestra, while higher up on the same lawn, cut out of the turf, are some neat ornamental beds forming one entire circle; each of these beds contain either dwarf flowering or dwarf coloured foliage plants, and contrast beautifully with the green sward surrounding them. Near the eastern extremity of this lawn are arranged in Natural Orders *Myoporineae*, *Acanthaceae*, *Verbenaceae*, *Scrophularineae*, *Bignoniaceae*, and *Tasminae*, which are all well represented. These are situated close to the reservoir, which occupies the highest position in the gardens. The reservoir itself is built of blue stone, with a wide embankment of earth all around to the height of about 20 ft., and planted with Buffalo Grass, which serves as a good binding material. In order to relieve the unsightly appearance of this mound Mr. Guilfoyle has had planted on it a number of *Mesembryanthemums*, which grow here so luxuriantly, principally the yellow, scarlet, pink, and crimson varieties. These, when in flower, present a brilliant and striking appearance. From the reservoir, which is calculated to contain some 300,000 gallons of water, the whole of the gardens, Government House grounds, and domain are supplied. The water is pumped into it by a large 20 horse-power engine from the river Yarra. Close to the reservoir are the

**Two large Conservatories**, one of which has but recently been built, and is but a section of a large building, the designs for which were prepared two or three years ago, but, owing to want of funds, although it is a very desirable national requisite, the Government have objected so far to proceed beyond the finishing of this one portion. It has lately been stocked with some of the choicest plants from the older conservatory, and contains some beautifully marked and coloured *Cordylines*, *Crotons*, *Begonias*, and choice Palms, together with a valuable collection of rare and unique plants from various parts of the globe. The old conservatory has been converted into a Fern house, and contains the largest and best collection of Ferns in the colony, numbering



several hundreds of species. A small portion of this house is allotted for tropical plants of economic and commercial value. Here may be seen growing varieties of the Cinnamon tree, the Cocoa-nut Palm, Coffee, Sugar Cane, the Chocolate tree, Mango, Breadfruit, Bananas, &c. Both of the conservatories prove a great source of attraction to visitors.

**Plant Labelling.**—Each of the plants in the groups containing the various Natural Orders has a large iron label placed before it, on which is given the botanical name, authority, common name, habitat, &c., while in front of the large specimen plants on the lawns and elsewhere is placed a tablet giving similar information, and throughout the whole of the grounds a thorough system of labelling is carried out, thus affording visitors and students of botany and horticulture every facility for acquiring a knowledge of plants.

P. F.

## THE ROSE GARDEN.

### PROPAGATION BY LAYERS.

PLANTS are either layered in a state of dormancy or of active and somewhat advanced growth. For Roses the best season has been found to be June or July. If layered in winter but little approach to rooting is made till the following spring or summer. Occasionally, too, the wood bleeds instead of callusing; but layers made during summer set about rooting almost immediately, and though different Roses vary considerably in their time of rooting, the majority of them will have rooted before the end of the growing season. Layers are generally formed of one or more year old wood. But perhaps the best mode of layering Roses so as to make the plants as much like cuttings as may be is to make layers of the current year's wood, but this will hardly be practicable before July. If pieces with a heel can be chosen, and part of the heel be cut off so as to form a portion of the base of the layer, rooting will be all the sooner effected. But any part of the shoot will answer for a layer provided the wood is sufficiently firm. Many also layer not only old wood, but branches—the larger the layer the larger the plant formed by it. But it should also be added that the longer as a rule will be in rooting, and the greater also the risk that it may not root at all. However, layers with from 6 in. to 1 ft. of wood beyond the portion buried in the earth are, on the whole, the best. Any of the more common modes of making the layer may be adopted, such as slitting or tonguing, or the removal of a ring of bark from the layer immediately below a bud. Very few Roses will root by being simply laid in the earth, in the mode most common for Gooseberries and Currants. But by cutting the shoot half through, immediately under a bud, and running a knife up the pith for an inch or two, thus dividing the shoot in half, a very good layer is formed. A small peg of wood or a pebble should be placed in the slit to keep the two sides asunder. The removal of a cylinder of bark or the tying of a tight ligature round the part layered answers a similar purpose, though the result is not quite so good a layer. The object is to arrest sufficient sap at the point operated upon to form roots while permitting sufficient to pass into the layer to support it until it is furnished with sufficient roots to support itself.

**Mode of Burying the Layer.**—A good deal depends on this. The soil should be dug or pointed over, so as to be light and porous. A slit should be made with a spade or trowel, and unless the soil is sufficiently light, place a little sand or light compost on the bottom of the slit. Then place the tongued or barked part of the layer into the slit, twisting or bending it so as that the detached portion shall penetrate the soil as much as possible and be nearly separated from the growing stem. Press the earth firmly down upon it, and if necessary make the whole immovable with a strong peg near the Rose or root end of the layer

and a stake at the growing point. In filling in see that every part of the wound made in layering is closely compacted around with soil, so that everywhere a hard surface may be presented for the roots to strike root into. Should very dry weather ensue, or any of the layers from overcutting or other causes show any signs of flagging, overhead sprinkling, root watering, and even shading may be useful for a time; but if the layers are properly made and treated, and with ordinary weather, neither will be needful. The layers may be removed in November. It will, however, be well to make sure that they are rooted before cutting the branch through that connects them with the parent plant. Planted in rich soil, and cut back in February or March to, say, four or five eyes, layers make capital dwarf Roses. They have rather a greater tendency to produce suckers than Roses raised from cuttings, but the suckers being all Rose, this matters but little. Some of the latter, in fact, come so strong and vigorous that it is a good plan to allow them to take the place of the original layers. So sure and certain is this primitive mode of propagation, that to all who have had difficulties in increasing their Roses sufficiently fast by other methods I would give this advice with confidence—try layers.

D. T. FISH.

**Pegged-down Roses.**—These would doubtless be far more common but for the plague of rabbits, which are very fond of such sweet morsels as real live Roses. The bark of Briers is somewhat hard and dry eating for them, but they revel among Roses where they abound, and make short work of pegged beds. There is, however, no better way of treating Roses to make the beds effective, as well as obtain an abundant bloom, than that so vividly described by your correspondent Mr. J. C. Clarke. Though his selections of Roses might easily be extended, it could not well be bettered. In planting Roses for this mode of furnishing they should all be chosen of, as far as may be, uniform habit and character of growth. Weak ones have literally no chance among the stronger growers; and, above all, as Mr. Clarke insists, the Roses must be on their roots. Not only is the plague of suckers thus stayed, but the suckers are welcomed as a veritable resurrection of new and better Rose shoots. Surely Mr. Clarke, however, advocates planting rather too closely. Two feet apart on strong rich soils would result in a thicket rather than such well-clothed beds as Mr. Clarke describes furnished with shoots 3 ft. long and 9 in. apart. In all other respects Mr. Clarke's instructions seem as perfect as it is hoped they may be useful in leading to the introduction of more beds of pegged-down Roses on the lawn and in the garden.—D. T. FISH.

**Rose Thomas Gerrard.**—This new Rose originated with Mr. George C. Garnett, an enthusiastic rosarian, residing near Dublin, and Messrs. Keynes, of Salisbury, will have the privilege of distributing it. Its history is as follows: In July, 1878, a dwarf standard of Letty Coles—Letty herself, by the way, a sport—was budded with Niphetos; the bud did not push that season, but remained dormant during the winter. In the spring of 1879 it swelled and produced a shoot, which ultimately dwindled and died away. The bush, however, showed unusual vigour of foliage and bloom, but the blooms of that and following season, 1880, were those of Letty Coles, very fine, but otherwise true to colour and character. Nothing further occurred to attract observation or attention until April of the present year, 1881, when a strong shoot appeared, producing two flower-buds, which, when fully developed, were both parti-coloured or piebald, the colours white and salmon rose. After Mr. Garnett had cut away the wood to forward for propagation to the Messrs. Keynes, a second sport of three blooms appeared, all rose-coloured, and only one showing the colour and perfection of the first sport. Thomas Gerrard will be the name of this new Irish Rose, and under no more worthy name could it be sent out

than that of the deservedly popular owner of Gibbstown and Boyne Hill. Some of the most noteworthy Roses in cultivation have resulted from inter or cross-budding, and as we are on the subject we will conclude by selecting two or three well-known and popular varieties as examples. First, then, let us take Maréchal Niel, which, it is said, originated in this way. One or more buds of Cloth of Gold were inserted on wood of the American Rose Isabella Gray, the result of the union being the Rose of Roses. Then, again, we have that lovely Rose Mabel Morrison, resulting from bud variation produced by the inoculation of Baroness Rothschild and Niphetos. Belle Lyonnaise is the outcome of Gloire de Dijon budded with Celine Forestier; and lastly, Letty Coles is a sport from Madame Willermoz, but by what variety influenced the writer is at present unable to say.—*Irish Farmer's Gazette.*

## ORCHIDS.

### MAKING UP SPECIMEN ORCHIDS.

I HAVE read with some interest the recent articles published in THE GARDEN respecting specimen Orchids and the modern system of making them up just previous to taking them to an exhibition. As a rule, it is best to give exhibitors as much freedom as possible, but at the same time it must be admitted that the making up of Orchids has been the subject of an annual verbal controversy for some years. I do not quite understand the drift of Mr. James' remarks (p. 143). Inever said that the prizes should be given to those who had been growing Orchids the longest, especially if their plants had foliage "not fit to look at." If Orchids were in that condition a good judge would not give them a prize at all. What I do say is this, that if a person grows certain Orchids, Cattleyas, or any others, say from 10 to 20 years, and exhibits them in good condition after that time, he has more claim to the name of Orchid grower than he who exhibits a bundle of imported Orchids consisting of quite small pieces, however large the bundle might be. I may be wrong and am open to correction, but I fancy that the great Whitsuntide exhibitions at Manchester have been the original cause of making up Orchids. The making-up system has flourished there to a considerable extent, and it was reported that at one of these exhibitions, what was termed an Orchid plant was not a plant at all, but a series of plants placed together in large square boxes; hence the origin of the term bedded out as applied to Orchids at exhibitions. I do not know whether anyone is to blame for this state of things. Certainly the promoters of exhibitions are not. In one sense they are more likely to approve of it, as tending, by the much greater display made, to especially serve their interests. We must therefore look to the judges to place matters on a better basis. For instance, in the case of two competing collections, if these were of nearly equal merit, and it became a matter of some difficulty to decide which should be placed first, then I would award the prize to the exhibitor who had the least number of made-up specimens. This is a matter upon which there is, no doubt, room for difference of opinion, but I fancy that in this I would be supported by all good judges.

There are some species of Orchids that always have been and always will be made up of a number of plants. A single plant of *Cypripedium barbatum*, for example, would not make much display at an exhibition; it naturally becomes a mass, and ought to be shown as such. Masdevallias, too, have a tendency to develop themselves in this way. I exhibited a good sized mass of *M. Harryana* last summer, and some one pointed it out to me as being a large specimen that had been made up; and certainly any one who was not acquainted with the plant would have been of the same opinion, as it bore flowers of two distinct shades of colour. As a matter of fact the plant in question was purchased very shortly after the



first batch was imported, and before the species had flowered in Europe. It was a small bit with about three leaves, and had been grown on since that time without being divided; two or three plants had been taken from it, nothing had been added to it, and the two distinct shades of colour were characteristic of the variety. No good Orchid grower needs to be told that it is easier to grow a number of Masdevallias in small pots, and then place them together in a large one just before an exhibition, than to grow one good plant. The large specimen alluded to above lost most of its leaves when it came home from the exhibition. I at once divided it into a number of pieces and potted them in three or four small pots; this was done as a matter of expediency, as being the best way to treat the plant under the circumstances. In a case of this kind I ought to be allowed to place them together again for the purposes of exhibition.

The *Oncidium unifolium* alluded to is a case in point. It was really and truly a specimen Orchid, and was shown in the pot in which it had been grown. Then in the case of some specimen Cattleyas, I have attended exhibitions long enough to remember specimen Cattleyas exhibited by Mr. Thomas Baines several years in succession which contained more than one variety of Cattleya Mossiae. They had been placed together to start with, and that was also a fair example of a specimen Orchid. I have a photograph of it before me as I write, taken of the plant as it was exhibited at Bath, and very great credit is due to Mr. Baines for growing the plant to such a large size. I think it is in a 20-in. or 24-in. pot. Personally, I do not care whether the schedules are altered, or not. Mr. James and I have entered the lists as competitors in friendly rivalry in the past. I have beaten him and he has beaten me, and I am sure not one unpleasant word has passed between us at any time; still I fancy in the matter of "making up" he has the advantage over me, as he has over any other amateur. He has a large nursery collection to draw from, and can show "bundles" of Orchids when an amateur cannot. However, if I have a chance I will try my best to beat him next year. Let us agree in this, even if we differ as regards other matters.

I thank Mr. James and Mr. Catt both for their remarks on *Oncidium curtum*. As shown at Regent's Park, it is a distinct and beautiful species; it has not been introduced very long, and is not so well known as it ought to be. I am rather glad that established plants have a tendency to flower so late in the season. Newly imported plants are sometimes erratic in their time of flowering until they have become well established.

J. DOUGLAS.

#### ONCIDIUMS AT HOME.

*O. luridum*.—This grand Orchid is now (middle of July) in flower in the woods here. Though common and numerous as are the flowers on the long-branched scapes, it does not readily attract the eye, but when once seen it is, snake-like, fascinating. The flowers of some are very much lighter coloured than those of others. The leaves also vary very much; some are short and channelled, while others are long and flattened; the latter are usually found in deep shade, the former in dry, exposed positions. I have counted as many as 200 plants, old and young, on one tree, and naturally longed to see them all in flower. I have seen a plant, not very large, with a scape 14 ft. long, and another had ten scapes averaging 5 ft., thus equal to 50 ft. of branched inflorescence. The species is found from 200 ft. to 3000 ft. above sea level, but it is perhaps most common at about 1200 ft. in shady woods, where rain showers are infrequent, but where, as a rule, the night dew is heavy, and where the thermometer would probably register 80° to 82° at night, up to 90° during the daytime.

*O. pulchellum*.—I had exquisite pleasure lately in finding this beautiful *Oncid* plentifully in flower. Possibly I might not have been able to distinguish it from some other small-leaved

congeners, co-associates of the woods, if it had not been in flower. But having seen the delicately white blossom, with its violet-tinted column wings, there was no mistaking it. Some of the plants, not all, have deliciously-scented flowers. The species grows on the trunks and branches of small trees, not more than 6 in. in diameter, in virgin forest at an elevation of between 3000 ft. and 4000 ft. above sea level, and where if it does not rain every day, it is cloudy and damp, and where the thermometer seldom indicates more than 75°. The species under such conditions lasts a long time in blossom, and is well worthy of cultivation. It will probably grow best on small blocks of wood, or, better still, on Cocoa-nut husks that have been split through the middle. In the damp region which it inhabits its roots are often slightly covered with Moss and Lichen, and it might be well for cultivators of this plant to thus imitate Nature.

GEORGE SYME.

Castleton Botanic Gardens, Jamaica.

**Fine Variety of *Oncidium Lanceanum*.**—Among the more noteworthy of the Orchids now in flower at Kew is a wonderfully fine variety of *Oncidium Lanceanum*, finer than we have hitherto seen, and very distinct withal. The flowers are not so remarkable for large size as for their colour; the lip, which is broad, is pure white in the lower half, rich purple in the upper; the sepals are copiously spotted with a deep chocolate brown over a lighter ground—colours which render the flowers extremely attractive. As yet this variety is not distinguished by any distinctive name, though it well deserves one.—W. G.

## THE FLOWER GARDEN

### DWARF PINKS.

THAN Pinks and Carnations no flowers are more popular. In this respect they may be classed with even the Rose itself. They are bright and pleasing either growing or cut, and for the latter purpose their usefulness is beyond all calculation. As grown in pots for early spring and late autumn blooming they are most attractive, but for all that their culture under this system is not by any means so easily carried on as to give me confidence to recommend it for general adoption, nor do I think it necessary to do this, as Pinks and Carnations, like many others of our sweetest and best flowers, do not require to be seen in a pot or frame to fully realise their attractions. These are so prominently displayed in our mixed borders and in beds wholly devoted to them, that it is this mode of culture I wish to recommend, but before proceeding further I must say that on this occasion I only intend to refer to the Pink, which of the two is the most useful. My reasons for thus giving Pinks precedence are these: Pinks are hardiest and most easily propagated and cultivated, earliest and freest to bloom, and last to give up flowering. Years ago all these qualities were well set forth in the old class of Pinks, but lately they have been brought out most prominently by Messrs. Dicksons & Co., of Edinburgh, whose new class of selected seedling Pinks is superior to any I have hitherto been able to obtain. They have a remarkably dwarf habit of growth, many of the blooms being only about 9 in. from the ground, and none of them over 1 ft. This is a point worth observing, as their dwarfness is not the least of their recommendations, their low growing character giving them an excellent effect either in small beds by themselves or as margins to other hardy flower beds. The kinds with which I am best pleased are odorata, carnea, Beauty, delicatus, spicatus, roseus, White Queen, and Fragrance. The colours to be found amongst these are most varied and charming, some of them being pure white, others mottled, spotted, blotched, and fringed. Their free blooming qualities have astonished all who have seen them. For many weeks they have been literally masses of bloom.

The cultural details connected with the Pink are few and simple. They may be increased from layers or divisions, either in autumn or spring, or they may be allowed to grow until they assume large masses, and this they will continue doing for years without any attention. In the flower garden, where everything may be regulated weekly at this season with the shears and knife, it may be thought necessary to subject Pinks to the same ordeal, but in the herbaceous border proper, and in odd corners of our gardens, huge masses of them are delightful.

M.

### WILD V. HIGHLY KEPT GARDENS.

THE interesting "Garden Thoughts" of "S. R. H." (p. 151) suggest a few reflections on the part of practical gardeners, who would, I am sure, gladly welcome a compromise between wild v. "tame" gardens. It is more the rule than the exception, under the present system, for the harvest of weeds to be abundant, and the labourers at command to be but few, and if owners would only sanction the wild-garden theory, there are plenty who would carry it out. But the difficulty is that there is no available example for us to follow—no public park or garden to guide us, for they, alas, are closer shaven and shorn than even private gardens. Both the owner of the lovely gardens of Lamorran and the writer of "Garden Thoughts," as well as many other advocates of a more natural style of gardening, have been here this year, but from none of them have I obtained a feasible solution of the difficulty as to how we are to keep gardens in order and dispense with mowing, raking, and rolling. I have read and re-read every paragraph relating to this subject, have listened to the owner of Lamorran's discourse against scythes and brooms in gardens, but imperative orders to keep the gardens in good order, viz., the walks free from weeds and the lawns cut moderately short (we do not shave them), have necessitated my having the majority of our men performing the very operation which is so strongly condemned. I feel something akin to envy in reading our worthy Canon's description of gardens from the Land's End to the most northern limit of Yorkshire, for, in common with practical gardeners in general, I find little time for rambling, and cannot view the charms of Lamorran except through the pages of THE GARDEN. It is out of the track of gardeners, and I know of no example like it in the midlands where we could form a garden party to discuss the merits on the spot of the various phases of flower gardening, now on their trial. In the meantime we are following the example of the children of Israel, and have hung the barbarous shears as they did their harps on the Willow trees, and are hopefully longing for the order to put up our scythes and brooms, for we do not keep up perpetual motion with them from choice, but from stern necessity. Some progress, however, may be recorded, for we do not now clip and deform trees and shrubs into all sorts of fantastic shapes for the purpose of making work. No; we have enough of that already, and will thankfully hail any suggestions for reducing it to a minimum. Nevertheless, give us poor gardeners our due, for between two fires we are likely to get more than our fair share of blame. It is easy enough for those who are owners of gardens to determine what they will have done—whether they will have "wild" or "tame" gardens.

J. GROOM.

#### Linton.

[There is really no need for perplexity in the case of so good a flower gardener as Mr. Groom. No one has ever advised wild gardening under the windows, but in every large place there are many wholly neglected spaces with ample room for the gardener's energies. Any part of a garden may be made more picturesque and informal without in the least depriving its owners of the pleasant short turf or the needful order, but to potter with the true wild garden in the flower garden proper is to show that we do not even understand what a wild garden is. In writing and thinking of it we selected specially the places where no gardening of any kind was attempted.



As to Mr. Groom's request for a model garden, it cannot be. The pride and the special privilege of wild gardening is that it may be varied as the clouds vary. Indeed it must be; no two can be alike; soils, and conditions, and plants settle that. No doubt a beautiful wild garden will do good in its neighbourhood, but those who have it should say. This is only one or two leaves out of a large book. The beauty of the system is that, carried out well, the plants are adapted to the site, climate, and trees or other permanent vegetation. A less formal style in the garden proper is a separate question.—ED.]

### GAULTHERIAS.

THESE pretty trailing shrubs—one of them at least—are well known where American plants are grown, the largest, *G. Shallon*, being a very vigorous and dense grower. We have seen them used with fair effect in the rough rock garden on poor soil, and even on a rough rock wall, through which they rooted into a bank of sand. There is a fine hardy freedom about *G. Shallon* which makes it useful anywhere. The little procumbent species *G. procumbens* is a plant of a totally different character—a fragile rock shrublet, and yet particularly free and



*Gaultheria procumbens.*

hardy when grown in a fully exposed position. Such a tiny shrub looks well on the rock or near a rock, but grown with the greatest ease on any level soil, and bears pretty little Lily-of-the-Valley-like bells, succeeded by bright berries and foliage always of a glossy hue, but changing colour with the seasons.

**Hyacinths the Second Year.**—In 1880 I had some Hyacinths planted singly in small pots in a mixture as given in *THE GARDEN* (Vol. X., p. 410), consisting of six parts loam and one cow manure, dry, with a little sand, and placed in a house. They were not planted till January, in order to obtain them in March and April. In 1881 they were placed for their second year in a border, only open to the south-west; here they did splendidly, having finer and more numerous spikes than the previous year when grown in the greenhouse.—P. B., *Harlow*.

**Canterbury Bells.**—How splendid these were during part of the months of June and July! My garden was a mass of Foxgloves, crimson and white, and of Canterbury Bells of many different shades, pure white (of which, however, there are many different varieties), dark blue, violet, mauve, pale lilac, and pink; they were lovely, but they barely lasted three weeks. They faded and died in the fierce heat of July. We luckily thought of cutting off all the dead flowers before the seed ripened, and now we are rewarded by seeing the plants covered with fresh buds and leaves. Many of them are again in full bloom.—W. N.

**Matricaria inodora.**—This hardy late summer and early autumn flowering plant is worthy a place in every garden where cut flowers are in demand. It is very floriferous, requires liberal treatment, and plenty of room, say from 3 ft. to 4 ft. for each plant if well grown. It seems to delight in abundance of water. Its well-formed, double, pure white flowers are admirably adapted for cutting, and it is surprising the immense quantity of flowers ten or a dozen good plants of it will produce.—J. E.

**Pentstemon barbatus.**—I want to put down *Chelone barbata*. Why is every other *Pentstemon* to be known as such, and *Chelone barbata* to be singled out as if belonging to another genus when everyone knows that it is a true *Pentstemon*? A new generation is rising which might as well start right as not. I introduced P. b. *Torreyi* to commerce, and I may shortly offer another very distinct one. Why should the correct name under which it will be sold be altered to *Chelone* because once upon a time the original type got a wrong name?—W. T.

**The Wolfs-bane** (*Aconitum Lycocotum*).—This not often met with yellow-flowered Monkshood having again bloomed and seeded freely with me this year, see Vol. XVIII. of *THE GARDEN* (p. 180), I shall be happy to send seed of it on receipt of an addressed and stamped envelope to any of the readers of this paper to whom I was unable to send it last year, the demand then having far exceeded the supply.—J. T. POE, *Riverston, Nenagh, Ireland*. [Is it worth growing in a garden? We think not.]

**Bignonia grandiflora Out-of-doors.**—Only a day or two before I received the last number of *THE GARDEN* I was surprised to see a magnificent plant of this covering a large portion of a dwelling house in Bury St. Edmunds. The position is a warm and sheltered one, surrounded with buildings and high brick walls. The plant is in vigorous health and flowering profusely, and was growing side by side and partially intermixed with the common white Jasmine, and was from 10 ft. to 15 ft. high. The contrast was very striking, and the effect singularly rich and satisfactory.—D. T. FISH.

**Prophet Flower** (*Arnebia echioides*).—The rapid growth of this curious and interesting hardy plant, figured in Vol. XVIII. of *THE GARDEN* (p. 204), is deserving of comment, and may be interesting to those wishing to possess it. I procured a small plant of it, apparently a single crown, from one of the Continental nurseries last spring, and planted it out in April in a border of hardy plants, where it flowered in June. It has since then increased so much in size and strength as to produce seven more heads of bloom, several of which are still fresh and opening their curiously-spotted blossoms, so soon to become spotless.—J. T. POE.

**Propagating Violets.**—Now is the time to strike cuttings of these. The runners, which are often too freely produced, strike readily in a close cold frame. Those which show a tendency to form a terminal bud should be selected in preference to runners having a tendency to increase in length. Autumn-struck cuttings if put in about 3 in. apart, and within a few inches of the glass, produce an immense quantity of bloom in the late winter and early spring months. They can easily be accelerated or retarded by keeping on the lights or exposing them freely to the weather as circumstances demand. Of the single sorts, I prefer odoratissima, and of the double-flowered kinds Marie Louise, a grand Violet, and the old Neapolitan.—J. E.

**Peruvian Daffodil** (*Ismene Amancaes*).—Having read in *THE GARDEN* (p. 153) of the blooms of this Peruvian bulb from the open ground at Colchester, and the suggestion that a warm moist temperature would perhaps be more suitable for the cultivation of it, I shall briefly describe my success in blooming it this year. I potted the bulbs in a manner similar to that employed for *Amaryllis*, and in the same compost,

and then placed them on a shelf in an intermediate house used for cuttings after being potted. There they remained until the bloom was open, when they were moved to another house. They were slow to start into growth, and required to be kept in that difficult state of neither wet nor dry until growth was made, which is so necessary for such bulbs. The blooms resemble somewhat those of *Pancratium macrostephana*, figured in Vol. XVIII. of *THE GARDEN*, except that the petals are not so long. The colour is a good yellow, and the perfume like that of the white garden Lily.—J. T. POE.

**Marie Louise Violet.**—This is a real gem. With us it has been flowering freely on a north border since the beginning of August, and will doubtless continue blooming till the end of autumn, and, weather permitting, far on into the winter. Some growers I know prefer the old Neapolitan, but for size and bloom and earliness of flowering the Neapolitan cannot compare with Marie Louise; still it is too old a favourite to be discarded in favour of any new-comer, however great its charms. Both kinds seem to delight in a free soil plentifully enriched with well-rotted leaf mould and old Mushroom manure. I find the best result is obtained by growing strong single clumps and allowing them plenty of room, say 12 in. each way. Cuttings struck now will make nice plants next year and very strong ones the year following.—J. E.

**The Wood Vetch** (*Vicia sylvatica*) is well worthy of a place in the garden. It is a very rare plant in this district—N. R. Yorkshire, 9 miles east of Barnard Castle. I have only found it once growing on the rocky bank of the Tees, covering the rocks, and climbing about 5 ft. amongst bushes. Sir Walter Scott, in "Rokeby," mentions it as growing in Thorsgill, beside Eggleston Abbey.

Where profuse the Wood Vetch clings  
Round Ash and Elm in verdant tings,  
Its pale and azure-pencill'd flower  
Should canopy Titania's bower.

Its flowers are more abundant than those of any other Vetch that I know, and I can only describe them as delicately lovely. This Vetch would be most suitable for a rockery or shrubbery. I intend to save a quantity of seed when ripe. Would any reader of *THE GARDEN* kindly inform me whether the Wood Vetch is plentiful in the south or not?—MARGARET B.

**Dressing Flowers.**—"Girofle's" reasons for dressing flowers will, I think, find but little favour with gardeners or the public in general. Regulating the petals of a flower with "tweezers and gum" is anything but pleasing to any one except "A Florist," who discards everything that does not come under his arbitrary rule, now happily becoming obsolete. I can assure "Girofle" that the adverse opinions expressed respecting paper collars for Picotees and Carnations by the pair he cites would, if put to the vote, be pretty unanimously maintained. I hear ladies often say the only objection they have to Camellias is their stiff formality—their even petals looking as if cut from Turnips. They admire the single Dahlia because it breaks into irregular petals in place of an almost circular ball; and any number of instances could be cited to show that "dressing" flowers is considered anything but an improvement.—J. G., *Linton*.

**Sedum spectabile.**—This is now making a grand display, owing to its abundance of heads of large rosy blossoms. It is excellent for planting in hot, dry positions, where plants of a more tender character would dry up in a season like the present; in fact, it succeeds best in full exposure to the sunlight, and seems to enjoy drought. We have it planted in shallow soil at the foot of a wall facing south, and here it comes far deeper in colour and is more floriferous than when it is partially shaded and in rich deep soil. We also find it succeed well on root or rockwork in full exposure to sunshine, where it is difficult to get moisture-loving plants to exist; and the fact of its flowering when the usual occupants of such



situations are destitute of flowers, makes it all the more valuable. For forming large masses, or as single specimens in succulent beds, it is invaluable; it is easily increased in spring by division of the roots, and it thrives in ordinary soil.—J. GROOM, *Linton*.

**Milla biflora.**—I have this with five flowers in the scape—a most unusual thing, I should say. Unfortunately only one bloom is out at once, or it would be beautiful.—A. RAWSON, *The Vicarage, Bromley Common, Kent*.

—This has just flowered in very great perfection in my garden, after exposure on the open border to the severe cold of the last three winters. With me it blooms only in alternate years; and it has never increased by offsets.—J. H. ARCHER-HIND, *South Devon*.

**Double Sneezewort** (*Achillea Ptarmica fl.-pl.*).—As is often the case with plants which require little care, this hardy perennial is but seldom met with in gardens, notwithstanding its flowering nearly the whole summer through and being very valuable for bouquets. This beautiful perennial deserves to be more generally grown than it is.—A. M. C. JONGKINDT CONINCK, *Dedemsvaart*.

**The Tuberose** (*Polianthes tuberosa*). If any experimentalist will take the Tuberose in hand and tell amateurs how it can be successfully grown by those having limited appliances, I will gladly furnish them with a few roots, as I am sure with a very little trouble this plant might be enjoyed by all. Raise them under glass in March and plunge the pots out-of-doors about the middle of June; when the flower buds are expanding bring them indoors. I only suggest this from what I have seen, but do not recommend the plan until I have had it tested.—P. B. M.

**Clove Carnations.**—Referring to the remarks on these given in THE GARDEN (p. 177), I am reminded of a grand stand of another white kind, which was shown at the recent meeting of the Southampton Horticultural Society by Mr. W. J. Cross, of Canal Nursery, Salisbury. The variety was named The Governor. It is a very large flower, in colour bluish white, and it has large flat petals of perfect form and substance. Mr. Cross states that the plant is a vigorous grower, and flowers as freely as any variety he knows. As shown at Southampton, no one could help admiring it, and the judges showed their appreciation of its merits by awarding it a first-class certificate.—W. H.

**Uses of Short Grass.**—Where garden lawns are extensive and lawn mowing costly, it is well for those connected with gardening to know that in the cut Grass they have a valuable and handy material for mulching crops in dry weather, and one that is readily applied. It is one of the very best things for that purpose that can be employed, as a thin layer of it will almost completely arrest evaporation from the soil, and thus save much labour and expense in watering. Among some crops that were mulched some weeks ago with a layer of short Grass the soil is as cool and moist as the day after it was watered, when the Grass was put on. The expense of watering would have been a heavy item without its assistance. Put on early between rows of Strawberries, about 2 in. thick, it ensures the swelling of the fruit, and a good healthy growth should no rain fall afterwards for three months, providing the ground was well soaked previous to mulching. This year our early Cauliflowers and Potatoes were drooping in the strong sunshine, the soil being dry; but Celery that had not been watered for five weeks grew visibly every day through the effects of a good mulching of short Grass. For such things as Raspberries, which like a cool rooting medium, it is excellent. Unlike rotten leaves, or manures which are commonly used for mulching purposes, the Grass does not get pulled about by birds in search of worms and moist food. It settles close to the soil, and they do not seem to meddle with it at all. I made one mistake with it some years ago, however. I mulched the Potato

crop with it, sprinkling it between the rows. While the weather was dry it answered admirably, and the Potatoes grew amazingly in the haulm, no doubt owing to the activity of the roots, which pushed up to the surface just under the Grass, permeating the ground in all directions with a host of small fibres; but when the wet came in September the Grass had just the contrary effect, for it prevented the soil drying during fine days, and the disease worked awful mischief. Since then I have never mulched Potatoes, and think it a bad practice. Mostly all other crops may be mulched, however. I have spread quantities of short Grass about the roots of our orchard trees, where the soil is thin and soon dried, with the best effects; and I find it excellent for sprinkling on poor spots on the lawn, as in dry weather it shades the roots, and acts to some extent like a dressing of wood ashes. Grass should always be applied as soon as it comes off the lawn, as it can then be put on with less trouble, and in a very short time, whereas if it is allowed to lie it quickly heats and rots.—C.

**Tropæolum speciosum.**—My experience of this lovely creeper differs from that of "F. W. B." I obtained it some years ago, and have tried it in various aspects, not having at the time a really north one on which to put it, and I could not get it to succeed, but last spring I planted it on the north side of my greenhouse, giving it a wire trellis to run on, and it has not only grown most luxuriantly, but it is as full of flower from top to bottom as it can well be, and the lovely green and brilliant scarlet form a most charming covering for the wall, which is seen from the sitting-room window. A north or shady aspect at any rate seems necessary for it in our drier climate (Kent). I can well imagine how well it does at lovely Ravensdale, and what a grand sight it must be. The place recalls to me many sunny memories of days long past, and I should desire nothing better than to be able to ramble over its grounds again.—DELTA.

**Bedding Lobelias.**—What are the deepest blue and most profuse flowering, as well as most compact and dwarf Lobelias? and what is the proper compost to use for cuttings of them, and the best mode or modes of preserving them through the winter? Would Lobelia, sown now, make better plants than if sown in March next?—IRISHMAN. [The variety called Ebor possesses all the qualities you mention, but Brighton, being a shade lighter blue, is more striking in bedding arrangements. To be true both kinds must be propagated by cuttings; seedlings sport and never grow evenly. You will gain nothing by sowing the seed now, unless it be increased anxiety and labour as to preserving the plants through the winter. March sowings are in every way preferable. Cuttings should be put in now, say about a score in a 6-in. pot; a sandy soil will do if well compressed in the pots. Plunge the pots in a gentle bottom heat, such as that produced by a couple of feet in thickness of leaves, and keep the frames close and shaded till roots are emitted, then give air freely, and gradually inure them to full exposure. They will keep best through the winter in a cool, airy house; the cooler the better so long as frost is excluded.—W. H.]

**Pronunciation of Gladiolus.**—"Botanicomastix" should be less hasty with his "scourge." If I apprehend rightly what he has written, it should first of all be applied to his own back, for does he not imply that Gladiolus is a far preferable (mis)pronunciation to Gladiolus? Writing under so severe a pseudonym, he surely cannot have forgotten that Gladiolus is the diminutive of Gladius, and that under no circumstances is the diminutive to be scanned long. As a boy, when first the seedlings of Gladiolus gandavensis brought this beautiful flower into prominent notice in gardens, I heard two scholarly gardeners talking about the pronunciation of the word; and they agreed that as the correct pronunciation Gladiolus was most unmanageable in common use, it would be best for the accent to be placed

where there was neither "excess or defect," i.e., on the "mean" or middle syllable. Their verdict has been adopted long ago by most gardeners of culture, and I think that unless "Botanicomastix" can advance some new and good reason for Gladiolus, the multitude will prefer the compromise of Gladiolus.—BOTANICUS.

## THE INDOOR GARDEN

### LESCHENAULTIAS AND THEIR CULTURE.

OF the many New Holland plants which have been introduced to our gardens few are more attractive than the Leschenaultias. Unfortunately they are rapidly falling out of cultivation, owing, I imagine, to their supposed minifness and the extra care and attention they along with most New Holland plants are known to require if success in their culture is aimed at. And perhaps for general decorative purposes there are many plants among the hosts of easily managed, quick growing subjects which we now possess whose merits are equal and even superior to those of many of the once popular plants just alluded to, but where a collection of choice and beautiful plants is aimed at, and superior skill can be devoted to their culture, I know of none whose merits are superior to the at present much neglected hard-wooded greenhouse plants. As a means, too, of learning young gardeners the importance of attending to the minor details in plant management and close observation of their peculiarities of habit, &c., the cultivation of these plants is of great value, for it is generally admitted that the man who can grow a collection of hard-wooded plants successfully is capable of growing well almost any plant. New Holland plants are impatient of the least neglect or wrong treatment, but given a knowledge of their requirements and the necessary attention, and success with them is far less difficult than is generally supposed to be the case.

**PROPAGATION AND CULTURE.**—Leschenaultias are natives of South-Western Australia, most of them being found in the neighbourhood of Swan River. There are about half-a-dozen species known to gardens, every one of which has proved worthy of cultivation. They require cool greenhouse treatment, and in the summer will thrive well in a cold frame or sheltered position outside, where they can be shaded from strong sunshine. To propagate them, cuttings should be put in in the early spring, the firm woody pieces, about 1½ in. long, being taken from the lower part of an old plant being most suitable. A compost consisting of finely-sifted peat one part added to three parts of silver sand is the best that can be used for them, and they should be pressed firmly into the pots, previously filled to within about 2 in. of the top with drainage; a little dry washed silver sand should be sprinkled over the surface. Over each pot of cuttings place a bell-glass, which will be found to require wiping about every other day; plunge the pots in a tan or other heated bed with a temperature of about 65° and shade from sunshine. Water should be given whenever the sand appears dry, and should be dripped in between the cuttings, as watering overhead is almost sure to cause them to damp. As soon as they are struck, which will be seen by their beginning to grow, they should be gradually hardened off by tilting the glasses and removing them from the frame to a lower temperature. Previous to potting off give the cuttings a good watering, so that the soil may adhere to the roots when shaken out. Peat and sand in equal parts should be used and 2-in. pots. Pot firmly and place the young plants in a close frame till established, after which a place on any shelf where they can be shaded should be found for them. In the summer they may be placed in a frame and sprinkled overhead with water every morning. Shift them on as they require it, using less sand and a little leaf-mould along with the peat, which should be of the dark heavier kind. A stake will be found necessary for the support of each plant



They require little pinching, as they for the most part branch freely. A winter temperature of about 45° in an airy light greenhouse will suit them. With this treatment in about two years nice little plants will be formed, which from their habit of flowering freely in a small state will prove very attractive. Green fly sometimes attacks *Leschenaultias*, and may be destroyed by Tobacco smoke or insecticide.

**SPECIES.**—*L. biloba* is a plant the beauty of which was known to gardeners long before its introduction to this country was accomplished. They were told that in addition to the introduced orange flowered kinds there existed at Swan River one whose flowers were of the richest blue. After several failures the plant was brought home, and proved worthy of the praise bestowed upon it. Imagine a plant with the habit and appearance of a Heath, each shoot bearing corymbs of beautiful blue *Pelargonium*-like flowers which last on the plant for a considerable time, and you have an idea of this species. It is a real gem, and if once seen cannot fail to win admiration. *L. formosa* has flowers of a deep orange colour, tinged with purple. The leaves are scattered, linear in shape, about  $\frac{1}{2}$  in. long, and smooth, with the edges recurved. The flowers are freely produced singly in the axils of the leaves, nodding, the corolla lobes reflexed and arranged in two divisions, the lower being three spreading obcordate lobes, resembling the lip of an Orchid, the upper two lanceolate lobes united at their apex. In *L. splendens* the characters of the above plants are united, its flowers being similar in colour to those of *L. formosa*, while in their size, together with the foliage and habit of the plant, it resembles *L. biloba*. *L. arcuata* is a rare species. It is of singular habit, differing from any other. The branches are spreading and recurved (whence the name) and covered with innumerable branchlets, almost every one of which is terminated by a large purplish-yellow flower. Two other species mentioned in old gardening works, but as far as I know nowhere now in cultivation, are *L. multiflora* and *L. oblata*. Z. B.

#### SHOWY PASSION FLOWERS.

THESE showy stove and greenhouse climbers are favourites with most people as flowering subjects, and one or two varieties are also chosen for their fruit, viz., *P. quadrangularis* and *edulis*. Of the latter we will speak first. Than this hardly any plant is more easily grown and fruited when the cultivator sets about it in the right way. From cuttings struck in autumn, and shifted out of a 4-in. pot into a 14-in. one in January, we have had a heavy crop of fruit within the year. The stove varieties of the Passion Flower grow with amazing rapidity—as much as 2 in. or 3 in. in twenty-four hours. A plant of *P. quadrangularis* that we had made about 200 ft. of young growth between January and July, besides what was cut out in thinning, and set in the same period one hundred or more fruits; but it did not bring more than half that quantity to maturity. It was too much for a young plant, and the fruit dropped at the seeding period; but the fifty which were left swelled freely, and weighed generally about half a pound apiece. The fruit is rather large for its weight. *P. edulis*, the most commonly cultivated fruiting kind, bears even more abundantly, but the fruit is not half the size of the other. Both *quadrangularis* and *edulis* require a stove temperature, and should be trained within 1 ft. of the glass, and never shaded. Amongst a general collection of stove plants *edulis* is apt to get infested with mealy bug, which greatly interferes with its growth, and it is therefore better to give the plant a house or pit to itself when grown for its fruit. Young plants, intended to fruit the same year, should not have too much root room, but be confined to a large pot plunged in the bed, and kept at the same temperature as that of the house. Care must also be taken that the roots at no time get through the bottom of the pot into the bed beneath—at least, before the fruit is fairly swelling. A general night temperature of 70°

and from 75° to 100° by day, should be maintained from the beginning to the end of the season; but an abatement may be allowed in severe weather.

The fruit is produced from the joints of the young wood, the flowers appearing in succession along the shoot as growth progresses; consequently the young shoots should never be shortened back, but allowed to extend as fast as they will. This must, however, be thinned out freely before getting too crowded. Our practice was to train two shoots to each wire, 6 in. asunder. As the flowers expand they must be fertilised with a camel's-hair pencil—an operation requiring to be performed every day, as when the plant begins to flower blossoms are continually expanding, and they do not last above twenty-four hours. Plenty of moisture at the root, and a genial moist stove temperature, are the general conditions to be observed throughout the season, and when the fruits have begun to swell, frequent applications of weak liquid manure may be given. The fruit should be gathered as soon as ripe, and it will keep a long while on a shelf in a cool dry room. Both the above varieties will grow and flower in a cooler structure than a stove, but they will not fruit successfully. The treatment of other stove and greenhouse kinds grown for their flowers is much the same as that described. In habit all the varieties are nearly alike, and their flowering successfully depends upon the keeping up of active growth, letting the shoots extend, thinning freely, and giving the plants plenty of sunlight and air and the proper degree of heat. The pest most to be feared is bug, which clusters about the axils of the leaves, and does much injury. It should never be allowed to gain a footing; but it attacks some varieties worse than others. Good fibry loam and sand suit Passion-flowers well, and they succeed best when planted out; but when they cannot have unlimited room in which to grow, it is much the best plan to confine the roots to a pot or tub, just according to the top room permitted. The pot should always be plunged, but not necessarily in bottom heat.

Of the so-called hardy Passion-flowers, *P. cœrulea* is the best. It succeeds without protection in the south of England, and may often be seen thriving near the sea coast in the north. In Scotland it is also grown on warm walls, but has to be covered up with mats and straw in winter. It makes a fine climber for a house front, and is worth particular attention in the matter of culture. Where the soil is naturally cold and unsuitable, a box or trough should be prepared close to the bottom of the wall, and drained and filled with light rich compost, consisting of loam, leaf mould, rotten cow manure, and sand; and if the box can be exposed to the sun, all the better. It may, of course, be planted and hid with other plants if its appearance be objectionable. The plant will grow without this care, but it will not flower nor ripen its wood nearly so well. I once saw a fine plant mantling a house front in North Lancashire that had been cared for in this way. Some of the best stove varieties are *P. quadrangularis*, *Bonaparteæ*, *Kermesina*, and *Princeps*. The greenhouse kinds are more numerous, and include *Comte Nesselrode*, *Impératrice Eugénie*, *Bellotti*, *Newmani*, *Campbelli*, and others, but these named are amongst the best.—*Field*.

#### AUTUMN-SOWN MIGNONETTE.

THIS being the season for sowing Mignonette, a few words on the subject may be of service to some who may not have been quite so successful as they would like. I will speak of two methods—sowing in pots and sowing in pits. To have good potfuls of Mignonette in spring, the seeds should be sown the last week in August or beginning of September. It will grow in almost any kind of soil, but to have it good I have found nothing to surpass a good loam mixed with a little leaf mould, and a small quantity of mortar rubbish, and if a little bone dust can be added, so much the better. As to the size of pots, that is of but little

importance; every one must be guided in this matter by the purpose for which the Mignonette is wanted. I have seen grand results in 8-inch pots so far as conservatory embellishing was concerned. Whatever size is used they should be well drained, and the seed sown in pots in which the plants are to bloom. Mignonette dislikes all kinds of root disturbance; put a little rough material over the crocks, then fill the pots with the soil, pressing it firmly into them. Sow the seed and cover it moderately deep and let it be placed under glass till the plants are up, when they may be put in a light dry pit, but kept cold till the weather becomes damp, when they should be put on shelves close to the glass in a cold house for the winter. About February part of the stock may be put in a warm house close to the glass, when the plants will soon come into blossom; when in full growth manure water will be of great assistance to them. Some sown in 3-in. pots are valuable to put in baskets and stands for house decoration. If sown about the end of July and treated as just described, keeping it in a warm house close to the glass, you may have Mignonette all through the winter. It is also a good method to sow in February to succeed that sown in the autumn. The plants should be thinned according to the size of the pots, four or five plants being quite enough for a 6-in. pot. For cutting from in early spring I know of no method equal to sowing early in September on an old Melon bed in a pit in which there should be sufficient heat from the pipes to keep out frost. If a whole pitful is not wanted, sow under one or two lights, and devote the rest to scarlet intermediate Stocks, which are always useful, or to East Lothian Stocks to cut from through the winter, or Violets, or in fact numbers of other things. On calling at Abinger Hall, near Dorking, in the beginning of last April, I found this method adopted, and where the demand for cut flowers in large, especially for sweet-smelling ones, it is as excellent one—one, in fact, by means of which Mignonette may be grown in abundance.

Farnborough.

J. C.

#### THUNBERGIA ALATA AND OTHERS.

I QUITE agree with Mr. Greenwood Pim in thinking it strange that such plants as these are so little grown. At one time I sowed the seeds of some six varieties every January or February as regularly as Cucumbers, Melons, or Balsams were sown. There were the pure white, the white with a black eye, the yellow, a deep yellow with a dark eye, aurantiaca, and the alata, a light yellow with a dark eye. We used to put them in heat, grow them in rich soil, and flower them on large trellises in 12-in. pots, sometimes using a single plant only, occasionally three or five to clothe a large balloon-shaped or pyramidal trellis. Occasionally, too, the plants were used for clothing trellises or pillars in plant stoves or warm conservatories. I have also used them for bedding out on warm sheltered banks and to partially conceal and clothe rocks and blocks with verdure and beauty. By sowing several times during the season, or propagating the Thunbergias from cuttings, they might be had in flower eight months out of the twelve. At one period I found them very useful for the brightening up of a plant stove in winter.

The only drawback to their culture was the fondness of red spider for the leaves. But this was kept down by frequent overhead syringing, the latter also suiting the plants well in all other respects. They seed freely under cultivation, and are also easily rooted from cuttings, every two joints of the plants being readily converted into plants. The old plants may also be kept over winter, but this is not worth while, as young plants grow rapidly.

The best place to push the plants up to flowering size is a close warm pit heated with manure, leaves, or tan, where a bottom and surface heat of from 65° to 75° can be maintained. Under such fostering conditions these Thunbergias grow like weeds; the leaves are made large and kept clean.



The plants continue to flower long and well either in a cool stove or warm conservatory. The soil we used to grow them in was good turfy loam, enriched with one-fourth part spent Mushroom-bed manure, with some mortar rubbish to add to its porosity. In this rich and free compost and a plentiful supply of water the plants used to grow and flower well throughout the season, the flowers often being so numerous as almost to hide the foliage. Our favourites were *Thunbergia alba*, or white, with a black eye, and *aurantiaca*, but possibly there may be more and better varieties now. D. T. FISH.

### THE GRAPE MYRTLE.

(*LAGERSTROEMIA INDICA*.)

From the note (p. 26) one might infer that the Grape Myrtle was strictly a greenhouse plant, but it is not. In the Southern States it holds the same rank among garden shrubs as the Lilacs do in England; in fact, their great fault is their commonness. They are deciduous, take a good rest, and in spring appear in good floral profusion. I have seen large-sized bushes of them at Washington, where the thermometer indicates more than 20° of frost annually, and at times zero. Grape Myrtles are not at all uncommon in New England, but they are too tender here to treat as hardy plants; we lift them in November, and heel them in in cold pits or cellars, where, with the hardier Fuchsias, Pomegranates, Lemon-scented Verbenas, Fig trees, and the like, they remain till April, when as soon as the frost has left the ground, and it is in good workable condition, we transfer them out-of-doors again. They are as hardy as evergreen Magnolias, Figs, *Lycasteria formosa*, *Aucubas*, and the like, and I see no good reason why, in the more favoured localities of Britain, they should not exist as permanent hardy shrubs. But we cannot expect young plants with succulent wood to winter outside without having their shoots killed back a little; on the other hand, when the shrubs become old and hard-stemmed they will bear greater inclemency with impunity. Cuttings of the ripe wood inserted in a cold frame as you would cuttings of any kind of deciduous trees or shrubs, root easily; they are also readily propagated from seed, which is ripened in quantity on out-door plants.

W. FALCONER.

*Botanic Garden, Cambridge, Mass.*

**Phyllagathis rotundifolia.**—The writer of an article in reference to this plant in *THE GARDEN* lately does not appear to be aware that it is easily propagated by laying the leaves on moist soil or fibre, and cutting the principal veins just as is done with fine-foliaged Begonias. Plants so produced are easily cultivated with a fair amount of care.—R. I. L.

**Bomarea multiflora.**—In the remarks accompanying the plate of *B. Caldasiana* it is mentioned that the name *B. multiflora* is given as a synonym for that plant. This is so far correct, but the plant once under that name at Kew is now found to be *B. edulis*, and the label makes *B. oculata* equal to it. Mr. Archer-Hind, of Newton Abbot, states that he has this out-of-doors, and that this year it has flowered well after surviving a temperature last winter of 25° below freezing. Last year it did not come up at all.—R. J. L.

**A Night-flowering Cactus** which I believe to be *Echinocactus tubiflorus* has given me a good many blooms this year. Succulents generally have done remarkably well. The long tubular white flowers of this species are very handsome, though so short lived. I had an opportunity, while at Sea View, I.W., this summer, of seeing a large plant of the Night-flowering *Cereus*. There were upon it 50 or 60 buds in various stages of progress, and had I been able to stay a single evening I should have

seen many of these open. As it was, the plant was an unusual sight now-a-days, and it gave me great pleasure to think that these old-fashioned plants were not entirely discarded.—K. D.

**Costus speciosus.**—This is now in flower. It is closely akin to *Hedychium*, but with large funnel-shaped white flowers and red bracts, that set off the flower-head very prettily. The stems are spiral in growth, which makes it very distinct. It was sent me from Glasnevin.—E. H. W.

**Monstera deliciosa.**—In your notice of this noble and interesting *Arum* you omit a few features that add much to its value, though, of course, these could hardly be all presented to you in one specimen. These are the joint in the leaf stem by which the leaf is kept close down upon the stem until it is fully grown, the peculiar cord-like roots that run far and wide in search of water and food, the interest the fruit excites on the dessert table, and the rich aroma it diffuses through one or many houses. The plant will grow almost anywhere, but its true place is in or over water; in such positions it grows and fruits with a luxuriance unknown to it when grown in earth only.—D. T. FISH.

**Bouvardias in Summer.**—At a recent meeting of the French Central Horticultural Society, M. Millet, of Bourg-la-Reine, described a method by which he had succeeded in obtaining a supply of *Bouvardia* flowers throughout the summer months. His process is very simple; he just pinches out the flower-heads in the autumn, winters the plants in a warm structure, and by April they start away into growth again, coming quickly into bloom. Although the great value of the *Bouvardia* consists in its flowering during the winter, the cut blooms are acceptable at any time of the year, especially when bouquets of choice flowers are in demand, so that M. Millet's plan is worthy of the attention of all who grow this fine family of flowering plants in quantity.—J. CORNHILL.

**Soil for Lapagerias.**—In answer to "R. M.," who asks what soil *Lapagerias* require, I may state that I have grown them in loam by itself, and also in peat alone, as well as in the two mixed. Good turfy peat with plenty of vegetable fibre in it is the best, but if peat fibre of this description is not obtainable I should prefer good loam with a portion of the earthy matter shaken out of it, retaining as much of the roots of the Grass as possible, rather than use peat of a soapy adhesive character. The great thing with all such plants that cannot well have the soil in which they are first placed, removed, and replaced by new, is to use in planting them out material of a nature that will last long, like the turfy matter described, in all cases adding a sufficient quantity of sand to keep the material open. The exact proportion must be determined by the particular nature of the peat or loam used.—T. B.

**Pelargonium Dr. Andre.**—This, although old, is still amongst the best of the fringed-edged kinds. It is a free bloomer, a good habited sort, and very hardy. In a collection of many varieties this may always be picked out owing to its good strong habit. It commences to bloom almost as soon as any kind, and continues longer than any, and if I were to grow only one sort of this type this would be the one. We have some plants of it now (August 15) well in bloom. Now is the time for striking cuttings or for getting plants to grow on for next season. It may therefore be a help to beginners if I name a few good old useful kinds. Amongst large flowered sorts I would choose Rob Roy, Warrior, Impératrice Eugénie, Red Gauntlet, Triomphe de St. Mandé, and Kingston Beauty. Amongst the fringed type I would select Digby Grand, Dr. Andre, Hebe, Duchess of Bedford, and Volonté Nationale. Of semi-double sorts, the best are Queen Victoria, Prince Arthur, Beauty of Oxtou, Captain Raikes; and of the fancy type, Ellen Beck, Roides Fantaisies, and Sylvia. The two following kinds are good for early blooming to cut from, viz., Crimson King, and Album multiflorum. We grow a large

number of sorts, but the above are enough for anyone to begin with.—J. C. F.

## THE GARDEN FLORA

### PLATE CCXCIX.—BUTTERWORTS.

Few persons, I imagine, have seen any of these charming little plants in cultivation, yet the species of which a figure is here given is by no means the first that has been cultivated in European gardens. Several species have been introduced, but they have soon disappeared, probably because the conditions favourable to their growth were either not understood or not observed. In a wild state, Butterworts are generally dispersed in the extra-tropical regions of the Northern Hemisphere, and along the mountain chains of Central and South America, southward to Terra del Fuego. Altogether about thirty species are known, four of which inhabit the British islands, chiefly in the north and west. The native species all grow in bogs and wet heaths, and are locally abundant, and the commonest one, *Pinguicula vulgaris*, though not so attractive as some of its exotic congeners, is a very attractive little plant. *P. grandiflora*, another blue-flowered species, has larger flowers of a brighter hue, but this does not grow either in England or Scotland, and only in the south-west of Ireland, where, however, it abounds in some parts of Cork and Kerry. This species has flowered well at Kew this season. On the other hand, some, at least, of the exotic species grow on rocks. *P. caudata* is a native of the mountains of Mexico, and also, apparently, of Central America, as Messrs. Sander & Co., of St. Albans, the importers, state that they received it from the latter country. There are many specimens of it in the Kew herbarium from various localities in Mexico, where it grows in damp, shady places, always probably at considerable elevations. Mr. Linden collected it on the Peak of Orizaba at 9500 ft. In shape the flowers bear so striking a resemblance to those of *Viola cornuta* and some other species, that one might at first sight take it to be a *Violet*, especially as some of the South American *Violets* have their leaves in rosettes like the Butterworts and Houseleeks. The leaves when fresh glisten like those of the Ice plant. *P. caudata* is, judging from all that I have seen, the handsomest species of the genus, surpassing all others in the beautiful colour of its flowers. A similar plant was cultivated from seed in Belgium, by Messrs. Jacob Makoy, about ten years ago, and it was figured and described in the *Belgique Horticole* under the name *Pinguicula flos mulionis*. It has broader leaves and purple-red flowers. The leaves, it should be mentioned, vary very much in size and shape at different stages of development of the plant. *P. orchidioides*, a closely allied species, from the same country, with smaller violet-purple flowers, still more like those of a *Violet*, was cultivated at Kew in 1846, and figured in the *Botanical Magazine* (plate 4231). Another, and a very different species (*P. lutea*) was introduced and cultivated by Messrs. Colville, nurserymen, of King's Road, Chelsea, in 1816. It is, perhaps, going too far to say that they cultivated it, for the figure given in the *Botanical Register* (plate 126) represents three miserably starved plants, between 2 in. and 3 in. high, whereas in a wild state the flower-scapes are often 1 ft. high, and the flowers three times as large. It is a native of the Pine barrens of Eastern North America, from Carolina to Florida. The flowers are of a deep yellow, and it is altogether a very showy species, deserving of re-introduction. *P. edentula*, a less showy plant, figured in Hooker's "Exotic Flora" (plate





*PRIMULA ALEXANDERIANA*







16), Dr. Asa Gray regards as a probable hybrid between *P. lutea* and *P. pumila*, having all the segments of the corolla equally obcordate instead of four-lobed, as in normal *P. lutea*. Finally, I may refer to the figure of *P. vallisneriaefolia*, published in THE GARDEN in 1878.

W. B. HEMSLEY.

**CULTURE AND POSITION.**—*Pinguicula caudata*, so beautiful and distinct in colour from any other known kind of Butterwort, has been successfully grown at Kew since the beginning of the year. It is treated in the same manner as *Droseras* and the other kinds of Butterwort in an unheated house adjoining the Orchid houses. It is grown in pots in light soil, and a layer of live Sphagnum Moss is placed on the surface. This mode evidently suits its requirements, for the plants thrive very finely. It is very interesting to observe the changes which the foliage undergoes throughout the season. In spring at the time of flowering the leaves are arranged in a dense rosette-like manner similar to those of *Drosera Whittakeri*. Subsequently they become broad and lie in a flat tuft on the surface of the pot, and in this stage give the plant a different appearance altogether from what it hitherto had. An analogous instance of this mode of leaf-development is seen in the pretty little *Primula rosea*. This *Pinguicula* deservedly received a first-class certificate at the Royal Horticultural Society's meeting last spring, when it was much admired, the beautiful colour of the blossoms being nearly equal to that of the *Masdevallias Harryana* and *Lindeni*. Our plate was prepared from specimens supplied by Messrs. Sander & Co., of St. Albans.

## THE FRUIT GARDEN

### COOL FRUIT HOUSES.

"PHILODENDRON'S" communication (p. 187) on this subject is suggestive and useful. Anything tending to reduce the cost of production of fruit under glass is always welcome, and I have no doubt that much that he states is correct, but I feel sure from his remarks that he over-estimates the advantages of his cool houses, and does not quite understand the capabilities of "our present forms of Vineries," &c. "Philodendron" states that his cool houses, which appear to be constructed something after the shape of Paxton's houses, "are suited for carrying out all that is requisite in growing fruit." If this means that they will produce early Grapes and late crops of such kinds as Lady Downes and Alicante, and it is Grapes he dwells upon principally, then I will undertake to say they will do nothing of the kind, nor always good crops of Peaches either. They will not even produce with any degree of regularity good crops of Black Hamburgh by autumn and ripen them properly, except in favourable situations, facts which "Philodendron" seems to realise himself, as it appears he grows the Muscadine only, and not very superb examples of that, since 300 bunches only fetch £5. Everything he can do with his houses can be done with ordinary span-roofed vineries, and even better results can be obtained with the ordinary lean-to, because more can be made of the sun-heat, which is the potent factor with "Philodendron." It is a complete delusion to suppose that any particular slope of house will prevent red spider and other pests; and although "Philodendron" says he has no spider in his houses, I think I would venture to find it for him without much trouble. Spider is never troublesome in any cool structure. That such houses will grow the Royal Muscadine Grape well as a rule is well known, because it is early and a hardy kind, and besides a good Grape, but it does not satisfy everybody. The petroleum idea is a good one. If it preserves the wood and saves paint it will be a boon indeed. May I ask, however, if the rays of the sun glance off "Philodendron's" house, as we are told they do, how the tem-

perature is got up to 100° by sun heat? In truth his structures admit just as much light and heat as any ordinary span-roofed structure. At noon a portion of the rays will be deflected, but at certain periods of the forenoon and afternoon the sharp pitched sides will receive the rays nearly at right angles, and at midsummer the heat received in this way is often intense.

J. S. W.

## THE BEST PEARS.

(Continued from p. 189.)

**Jargonelle Pear.**—*Synonyms*—Poire d'Épargne, Saint Samson, Grosse Cuisse Madame d'Été, De Beau Present, Grande Cuisse Madame, Jargonelle des Anglais, Saint Lambert, Des Tables des Princes, de Chandelie, de Cueillette, Belle Vierge, Beau present d'Été, Chapine, Beurré de Paris, Roland d'Été, Marion, Jassel, Cueillette de la Table des Princes, Grosse Madeleine, à la Flute, Franz Madame, d'Espagne, de Seigneur d'Été.

**DESCRIPTION OF THE TREE.**—Wood, strong. Branches, very few in number, slightly curved and very much spread out; thick, long, hardly kneed, downy, reddish-fawn colour, with a greyish shade, with the lenticular markings large, well-marked, and sown pretty closely together, the callosities being only slightly perceptible. Eyes, medium or bulky, rounded, ovoid, very downy, sunk in the bark. Leaves, large, never numerous, acuminate, deeply serrated, with a long thick stalk, and bearing very highly-developed stipules. Fertility, very great and constant.

**CULTURE.**—It grows healthily on any kind of stock, although it is only ordinarily vigorous in its habit. It forms badly-shaped pyramids, which always grow very irregularly, and are especially faulty in throwing out but a very small quantity of branches and leaves.

**DESCRIPTION OF THE FRUIT.**—Size, sometimes above the average, at others medium and even small. Shape, passing from a slightly cylindrical, elongated, and thickly knobbed form to the elongated, conical, slightly blunted, thickened at the base, and thinning off very much towards the top, which is generally mammelloned. Stalk, long, or of medium length, very rarely bent back, well-grown or pretty thin, more or less swollen at each extremity, obliquely or perpendicularly inserted level with the surface of the fruit. Eye, almost prominent, medium or small, open or half shut, even on the edges, or surrounded by slightly prominent folds. Skin, pretty rough, light yellowish-green, marbled and speckled with reddish-grey, abundantly spotted with the same round the stalk, tinged with red on the side next the sun. Flesh, white, with greenish veinlets of half fine grain, melting, juicy, containing some hard granules at the core. Juice, very abundant, sugary, acidulated with a very agreeable odour, but it is sometimes marked by a slight acerbity of flavour. Season, towards the middle of July. Quality, first class, considering the season.

**HISTORY.**—This variety has every reason to pass as one of the oldest of French Pears, for it has been grown in France for over four centuries. Its original name is that by which it is known all over French-speaking countries at the present time—Poire d'Épargne. Since 1600, and even long before that date, it bore this name in the Orleanais, as may be seen in a catalogue which was published in 1628, and gave a list of the trees planted in the famous orchard belonging to M. Lectier, Procureur de Roi, and who lived at Orleans towards the wane of the seventeenth century. At page 4 of this interesting pamphlet, we find the Poire d'Épargne classed amongst those Pears which ripen towards the end of July or the beginning of August. But even before this, viz., in 1600, we may find proof of the existence of this variety in yet another part of France, at the gates of Dieppe. The following passage, extracted from an article inserted in 1842 in the second volume of the *Bulletins de la Société de Horticuture de Rouen*, shows clearly that it was propagated as far back at least as 1580. There is to be found in the garden of M. Mergnot, of Pollet,

just outside the gates of Dieppe, in the department of the Seine-Inférieure, a Pear tree trained as an espalier, which is not only the oldest and largest, but which covers a greater space of wall than any other in Europe. It is a tree of the Cueillette or Épargne variety grafted on a free stock. It is planted *à mi-côte* against a wall 26 ft. high, and in a clayey soil. The trunk is 39 in. thick, and each of the lateral branches 26 in. in diameter, the height of the whole being 20 ft. from the level of the soil. The wall has a southern aspect. The lateral width of the trained tree is nearly 100 ft., and it grows so freely that it generally yields an annual crop of from two to three thousand Pears. The date at which it was planted (the year 1580, in the reign of Henry III.) is inscribed on a stone let into the wall. The property on which this extraordinary tree is still growing was in those days a charitable institution. The tree is highly valued by its present owners, and is tended by them with the greatest care. We have here evidently the patriarch of Pear trees of this variety, and it is most probably one of the first fruit trees of any description that was trained as an espalier. In any case we may readily believe that if it really was planted alongside a wall in its present position, that it was not until about 1600 that it was first trained into an espalier, the origin of which cannot be traced from this back than the beginning of the seventeenth century, as may be seen by the documents published in M. Leroy's *Histoire du Poirier*. On the other hand, this venerable Pear tree belongs to the very province in which the system of training espalier was first successfully carried out by the Abbé le Gendre, who was vicar of Henonville, near Rouen, and, as M. Leroy has proved in the same place, the most famous patron and propagator of this mode of training of that day. Poiteau, who died in 1854, in his *Cours de Horticuture*, published in 1853, says: "Having made a long search after the real meaning of the word *épargne* (savings) in the name of this Pear, Poire d'Épargne, I at first thought that the appellation was a corruption of the word *Espagne* (Spain)." This opinion lately misled another of our pomologists, who adopted it on the perfectly gratuitous assumption that the tree was a native of the north of Spain. But it will be easily seen that both these opinions are untenable when the old meaning of the word *épargne*, or rather *espargne*, is considered. In the days when Le Lectier wrote, *espargne* did not mean "savings," but "treasure." The variety is no doubt a native of Normandy or the Orleanais. In the former locality its vulgar name is La Cueillette, or "the gathering." In this opinion we are supported by M. Jahn in his *Illustrates Handbuch der Obstkennde*, published in 1860, one of the most competent authorities on the subject. In any case, we know of no Pear tree which so fully deserves all the praise lavished on it by its numerous godfathers in times gone by, praise which it certainly equally deserves at the present day. In 1858, M. Decaisne wrote as follows in his *Jardin Fruitiier du Muséum*: This Pear is very plentiful in the Paris markets, where choice specimens sell for 25 fr. per 100, five or about four for 1s. M. Mas, in 1865, tells us in the *Verger*, of which he was then the editor, that good trees of this variety frequently fetch as much as 120 fr. (nearly £5). We may add in conclusion that among the other synonyms of this Pear, one (*Grande Cuisse de Madame*) (*Lady's Large Thigh*) gave rise to numerous jokes at the banquets of the last and the preceding century.

**REMARKS.**—The synonym *Grande Cuisse de Madame* was in use for many years both in France and other countries, but it will be as well to warn the reader that in 1600 a Pear tree bearing this title and under that of *Certeau Madame* was cultivated at Moulins, but as we are told by le Lectier who gave an account of this variety, as its fruit ripens in December it is hardly necessary to say that it is not the Jargonelle d'Épargne. We may likewise call to mind the Cuisse Madame is cultivated largely under the name of Jargonelle d'Épargne, but this Pear is again quite different from the one we are describing. This variety, which is



called by the French Poire d'Epargne, and not Jargonelle at all, must not be confounded with the French Poire Jargonelle, with which it has but little in common. The French Poire Jargonelle, a third-rate Pear, ought to be considered the true Jargonelle, as it is mentioned under the title of Gergonnelle in a letter of about 1490, preserved in the French National Library.

#### Gratioli de Jersey.

**DESCRIPTION OF THE TREE.**—Branches, pretty numerous, spread out, slightly bent, short and thick, only slightly kneeled, downy, greenish brown with slaty tinge, with large and abundant lenticular markings, the callosities being very prominent. Eyes, very bulky, ovoid, rounded, slightly separated from the wood, having the scales badly joined. Leaves, large, elliptical or elongated, oval, flat, or twisted, being borne on a long stalk, which is very strong, and provided with highly developed stipules. Fertility, fairly good.

**CULTURE.**—It grows with equal vigour on the Quince as on the free stock, and shows no peculiarities during its growth; its pyramids, although strong and handsome, leave something to be desired in the way of height.

**DESCRIPTION OF THE FRUIT.**—Size, medium-shape, ovoid, more or less rounded, and generally very much swollen. Stalk, pretty long, well grown, slightly swollen at its extremities, bent, placed obliquely and nearly level with the surface of the fruit. Eye, large, regular, half closed, inserted in a very large basin of varying depth. Skin, thick and rough, greenish yellow speckled with fawn colour near the eye, and the stalk generally covered with round reddish spots, and sometimes slightly tinged with red on the part exposed to the sun. Flesh, yellowish-white, fine grained, melting, watery, slightly gritty at the core. Juice, abundant, sugary, slightly aromatic, with a vinous flavour that is extremely agreeable. Season, from the end of September until the end of October. Quality, first-rate.

**HISTORY.**—This Pear has been cultivated in France since 1850, but not very extensively, the very early fruiting varieties of Pear being so much in demand. In America it has been largely grown for the last thirty years, and is mentioned by the Boston pomologist, Hovey, in his *Magazine of Horticulture*, where he also gives us the following particulars touching its origin: "In 1844," says this writer, "we first spoke of this Pear, but very briefly, in this magazine under the name of the Jersey Gratioli, which had then just been introduced into our collections. It comes originally from Jersey, where up to 1843 only a single tree was to be found, from which Mr. Bucknall, who probably was the owner, sent some specimens of the fruit during the same year to Mr. Thompson, the principal manager of the Horticultural Society of London, which specimens were described and figured by that gentleman in the *Gardeners' Chronicle*."

**Plums under Glass.**—Mr. Passingham in last week's GARDEN speaks of only one Plum doing well with him under glass. If that means an orchard house, I imagine the cause must be defective ventilation, for in my own, which is large, I grow in the highest perfection Green Gage, McLaughlin's and Bryanston ditto, Belgian Purple, Coe's Golden Drop, Jefferson, Transparent Gage, The Czar, and Grand Duke. All are excellent and never fail. Besides front and back air I have ventilators in the roof to open or close. I ventilate very freely in the morning, but close the front sashes at 4 o'clock. —S. W.

**Badly Spelt Fruit Names.**—Passing through Taunton last week, I had the opportunity of seeing a very good flower and vegetable show. There was also some fair fruit shown, and as some of the varieties may be unknown to your readers, I send the names of a few of the most uncommon: Pears—Jourganall, Ceteron de Carms, Lord Napere. Apples—Aster Can, Authorn Dene. Plum—Curlk's Seedling. I might send the names of others, but perhaps the above are sufficient.

Should not secretaries to shows see that such matters are put right?—A. R.

**Peaches in California.**—At the last meeting of the State Horticultural Society of California exhibits of Peaches were made by Mr. Shinn and Mr. Leonard Coates, and Mr. Shinn made some remarks on Peaches. Briggs' May, Alexander, and Amsden ripened so nearly alike that he could hardly distinguish between them. Briggs' May may have been a trifle the earliest. Alexander is largest, but he considered Amsden's June best of all for quality, but small in size. The Waterloo he found sweet and good, perhaps, all things considered, the best of all the extra early Peaches. Mr. Shinn named a succession of fine yellow Peaches, curling little or not at all, and ripening in the following order: Early Crawford, Foster, Richmond, Mary's Choice, Susquehana, Honest Abe, Jones' Seedling, Piquet's Late, Smocks' Late (Beers' Strain) and Selway. All these are large yellow freestones, and none of them curl enough to hurt.

**Inarching Vines Together.**—I do not know whether the idea has ever been put in practice with a specific object or not, but it occurred to me, when looking and considering the effects of a natural graft on one occasion, that it would not be a bad plan, under some circumstances, to tie a house of Vines together by means of inarching, so as to equalise their vigour by giving weak-growing kinds or particular plants the benefits of the leafage of their stronger neighbours. I have certainly often seen cases in which such a thing would have been advantageous. In mixed houses of Vines there are always some plants less vigorous than others of a different kind, and not unfrequently in houses devoted to one kind, only there are weak and strong plants. In Muscat Vineries I have seen plants that were much worse setters of their fruit than others, and in other respects weaker, owing to causes not always apparent. As it is beyond a doubt, and proved in Vine culture more frequently than in anything else almost, that a healthy growth and leafage greatly improve the constitution of the Vine, it follows that by attaching a weak Vine to a strong one at various points, by its side shoots or leaders, and allowing both to grow in a united condition, the former would have the benefit of the latter's more vigorous constitution, which would hardly itself suffer by the connection, and both would, of course, be still on their own roots. A number of facts in plant culture corroborate this idea. For example, it is well known that a weak or unsteady branch or shoot will exist longer if it be growing in the neighbourhood of a healthy one, and that, in variegated plants, albino or pure white shoots will grow vigorously while there are green leaves anywhere else on the plant, but perish when these are removed. It is quite a common practice to graft a weak Vine upon a neighbouring strong one in order to improve it, but the weak one is always removed afterwards when a shoot has been obtained from it. My idea is simply to link it on to its stronger neighbours, on both sides if practicable.—J. S. W.

**Early Peaches.**—The early kinds of Peaches raised by the late Mr. Rivers are not yet grown so extensively as might be expected; doubtless their small size and tender flesh, which will not resist the slightest pressure, and so do not pack or travel well, militate against their popularity; still, for earliness alone they deserve a place in all gardens. We this season gathered the variety called Early Beatrice, fully ripe fruit from a west wall, on July 23, Early Louise on August 2, and Early Rivers on the 16th. The quality of flesh of any of them cannot be said to be really first class, but it is by no means bad. If only for their earliness alone they are deserving of extended culture.—W. H.

— I am now able to give the ripening dates of a few early varieties of the Peach family. With one exception they were produced from standards in an unheated orchard house. The first three were large, juicy, and excellent. Alexandra July 9; Hale's Early, July 24; Early

Silver, August 8; Rivers' new early Nectarine Advance, ten days earlier than Lord Napier, August 7; Rivers' Early York Peach on orchard house wall, July 20. These I can confidently recommend. The Nectarine Advance is a great gain; it is of moderate size and excellent quality. I have after three years' trial rejected Early Beatrice, Alfred, and Louise. They ripen early, but as pyramids, planted in the orchard house, I found them wanting in size and flavour.—S. W.

#### SEASONABLE WORK (FRUIT).

**Pines.**—Although we have had a short period of hot weather, the season is not much in advance of last year, and Pines, owing to the slow progress they made through the cold spring months, are still rather backward. To make up for lost time, plants intended for early planting next spring should now receive every encouragement in the way of heat, moisture, and stimulating food, consisting of weak guano water, or diluted liquid from the manure tank. When the pots are well filled with roots and days decrease in length, root-watering must be more carefully performed, atmospheric moisture may be decreased, and a liberal supply of warm air must be kept constantly playing amongst the foliage, in order to secure perfect maturation of the plants without producing a sudden check. Let the heat for the present range from 70° at night to 85° or 90° by day. Give air on fine mornings at 80°, and run up to 95° after closing. A bottom-heat of 85° to 95° suits Pines in all stages of growth. Some growers like a much higher figure, but the little they gain in time is lost in weight. Smooth Cayennes, Jamaicas, and that excellent winter kind Lord Carington, now swelling off for winter use, if kept close to the glass to prevent the crowns from becoming too large, cannot easily be overdone with solar heat, stimulating food, and moisture. Avoid fire-heat as much as possible by running down the blinds, or covering with mats on cold, chilly nights. Remove ripening fruit to a dry warm atmosphere to finish. Take off strong suckers, pot, water, and plunge at once, and shift any that are well rooted, from 8-in. to 10-in. or 11-in. pots.

**Vines.**—Houses of late Grapes intended for keeping through the winter will now require liberal ventilation, with gentle fire heat, in order to secure the perfect maturation of fruit and wood by the end of September. Reduce strong laterals where they have been allowed to run to a considerable length, but at the same time guard against exposing the bunches to the sun, as black Grapes always colour best under a good canopy of healthy foliage. Black Morocco and Madresfield Court Muscat, two varieties liable to crack if heavily watered or allowed to hang in a damp stagnant atmosphere, should be heavily mulched to prevent the escape of moisture from the borders. An impression prevails with some growers that their success this season is entirely owing to extension of lateral, but several very fine examples of this noble Grape having come under our notice we have found upon inquiry that they have been grown upon the close stopping principle—a fair proof that the secret of success must be sought for in the management of the roots and the maintenance of a circulation of dry, warm air. Muscats, now quite ripe, must be closely watched, and, if necessary, slightly shaded with Haythorn's hexagon netting through the hottest part of the day. If the roots are in external borders some kind of covering should be held in readiness for throwing off heavy falls of rain. Gradually reduce the temperature of the house, using no more fire heat than is absolutely necessary to prevent the berries from damping, and ventilate freely on fine days. Follow up the lighting and relaying of the roots of early and mid-season Vines before the leaves fall. Keep them well up to the surface and encourage the formation of new spongioles, by syringing and shutting up with sun heat on fine afternoons. In cold, unfavourable situations, Vines should always have the run of internal, as well as external, borders, which



should be well concreted and drained. Use new turf, with an admixture of old lime rubble, crushed bones, and burnt earth. Apply manure as a mulching in preference to mixing it with the compost, and aim at narrow borders well filled with roots, which can be easily protected or excited, as circumstances may dictate, always bearing in mind that Grapes invariably set and colour best when the latter are under the control of the cultivator.

**Hardy Fruit.**—Perhaps never was red spider more troublesome than it is this season, Apples, Pears, Strawberries, and, as a matter of course, Peaches and Nectarines being more or less infested with it. The best remedy for keeping it in check is copious syringing and root watering, but when it gets securely lodged under the leaves it is a most difficult matter to get rid of it. A strenuous effort should, however, be made, as Peaches and Nectarines on open walls are fairly plentiful, and, other fruits being scarce, they will be unusually acceptable. Where water is laid on and flexible hose can be carried along the foot of the walls, a handy man can easily direct the full force of the water in a way that will turn nearly every leaf much better than can be done with the engine or syringe, and as these pests cannot long exist in a cold bath, a nightly application until the fruit begins to ripen will generally clear the trees, while the water on its way through to the border will stimulate the roots and greatly increase the size and quality of the fruit. Choice Pears on walls will require resting, to protect them from the depredations of blackbirds and tom-tits. Ordinary fishing-nets will answer the purpose. Strawberry plantations may still be made there, as in many places runners have neither been plentiful nor good. To secure a good stock of clean early runners for potting or planting, a few rows of each kind should be planted out every year. These should be well watered and mulched and divested of all flower-stems as they throw up in the spring. Trim out old beds, and leave the ground clear for the present to ripen the crowns and surface roots, before the mulching is put on in the autumn. Dress out old Raspberry canes, and tie the young ones up to prevent them from getting injured by wind.

Eastnor Castle.

W. COLEMAN.

## THE KITCHEN GARDEN

### TWO CROPS AT ONCE.

**PEAS AND POTATOES.**—A very happy combination on the dining table, but our business as gardeners is with vegetables before they pass into the cook's hands; I am, therefore, about to introduce to you quite a radical change in growing the former vegetable. Heretofore we have been careful to sow Peas in rows and provide them with boughs to hang upon, but from what I see here—good-bye for ever to sticks, hurdles, and all such hindrances to the free growth of Peas, for I can well see that Peas will have none of them. The custom, I find, in this part of the world where Potatoes are planted is to sow a Pea here and a Pea there, and let the two grow together. In this way two crops are secured on one piece of land, and neither seem the worse for the companionship; indeed, the success which has attended this new method of cultivation is beyond belief. The Peas protect the Potatoes, and, I suppose, in a certain measure the haulm of the Potatoes keep the Peas from direct contact with the ground; anyway, the result is an extraordinary crop without any diminution in the yield of Potatoes. One particular plot to which my attention was called was planted with Veitch's Perfection Pea, and the result in this case was simply enormous, and the quantity of seed sown, I am told, was very limited. I shall be glad to hear if this plan has been tried elsewhere. My Peas, grown in the

old-fashioned way and properly boughed, were next door to a failure.

Seaford, Sussex.

W. H. CULLINGFORD.

**Red Currant Tomato.**—Amongst the thirty-six or more varieties of Tomatoes which we are growing this season we have several small-fruited ones, but Carter's Red Currant is decidedly the best. The individual fruits are the size of large green Peas, and some of the bunches of Grape-like clusters contain upwards of sixty berries. Having so many good large kinds for cooking, I need not say much about this for that purpose, but as an ornamental fruit it is most attractive.—J. MUIR.

**Ne Plus Ultra Bean.**—We send for your inspection a couple of plants of our dwarf French Bean, Ne Plus Ultra, which is offered for the first time this season. We think you will be struck with its enormous productiveness, dwarf habit, and the handsome shape of its pods. We recommend it specially as a forcing kind, as it proves to be as productive in-doors as out.—G. COOLING & SON, Bath. [The plants sent were literally loaded with pods. Evidently the variety is most prolific.]

**Pride of America Potato.**—In order to show the productiveness of this Potato I give the weight produced from 7 lbs. planted, viz., 288 lbs., so that from every 1 lb. set I have rather more than 41 lbs. for it. The seed, which I had from Messrs. Carter, grew with great vigour, so much so that the haulm in many cases was covered with little tubers.—W. LIMEHOUSE, Hinton Hall, Suffolk Walden.

**Rowden's Brown Cos Lettuce.**—This Lettuce seems to be very little known or grown, though its merits, especially as a variety for winter and spring use, are superior to those of any other sort I ever grew. I have never seen it catalogued in more than one or two London seed lists. It is remarkably hardy, of close compact habit, requiring no tying, and it is of unsurpassed flavour. I have discarded other roots of Cos Lettuce for winter and spring use. As regards size, it is not quite equal to the old black-seeded Brown Cos, Hick's hardy Cos, and similar sorts, but has far less waste outside leaves than any of them. It has only to be grown to be properly appreciated.—J. E.

**Among the Peas.**—On reading the remarks on this subject (p. 152), I was struck with the difference of description of Telephone and the Pea I have got here under that name. Inside the packet of seed which I obtained was a note saying that the plants would require no support when growing. But it was fortunate for the sake of the crop that a few sticks were added when the others were being staked, as the plants have now reached an average height of from 8 ft. to 10 ft., with pods (I was almost going to say to correspond) 6 in. long and well filled with from 8 to 11 Peas each. It is in all respects a profitable Pea, despite its Brobdingnagian proportions. Can anyone say from this description what variety it is?—R. McL.

**Cardiff Castle Cucumber.**—For several years past I have been in the habit of seeing this Cucumber at Cardiff Castle, and each time I have seen it I have been more and more impressed with its good qualities. I have also seen it growing in many gardens this season, and exhibited at several of our Welsh shows, and in each case its distinct character and general excellence have attracted attention. The fruits are produced in great numbers, and for a remarkable length of time. As a rule they are little more than 1 ft. in length, and models as regards shape, each end being as thick as any part of the centre. In colour it is a deep green.

CAMBRIAN.

**Fertilising Cucumbers.**—Should Cucumber blossoms be fertilised? is a question often asked, and one to which I answer, no, except in the case of Cucumbers grown for seed. On the contrary, pick off all the male blossoms as they

appear, and thin out the female ones to the amount of crop required, as most of the free-bearing sorts show a great many more than the plants can possibly bring to perfection. If any one is sceptical as to the value of this advice, let him try it on a pair of flowers side by side on the same plant, and he will not require to wait many days before he will see the ill effects of fertilisation, for while the non-fertilised bloom will produce a handsome fruit of nearly the same diameter throughout, the fertilised fruit will probably be crooked, and while thin at the handle will be extremely bulky at the apex. I believe this to be the reason of the opinion getting abroad that the most crooked and worst shaped fruits only should be saved for seed, as they are the fruits that have been accidentally fertilised by bees or other insects, while the handsome Cucumbers are the non-fertilised ones. Therefore, only fertilise the blossoms artificially when seed is the object in view. It is quite different with Melons, for although they both produce male and female blossoms, the Melon does not swell its fruit up satisfactorily unless fertilised, but the Cucumber is most valuable when it is not fertilised.—J. GROOM, Linton.

**Cucumbers.**—See that young plants, intended to take the place of Melons now ripening off do not become pot-bound before the house is ready for them. It is better to keep on shifting into larger pots than to push forward the planting before the house is properly cleansed, as Melons, under the best of management, invariably leave insect pests behind them, and a cramped condition of the roots of young Cucumber plants is a certain forerunner of an outbreak of red spider. Plants in pots and frames will now require careful attention to stopping, thinning, watering, and airing. Remove all old leaves and vines, crop lightly, and top-dress with rich turfy loam as the roots appear on the surface. Close up with plenty of sun-heat about 3 p.m., renovate the linings, and cover with mats at night.—W. COLEMAN, Eastnor Castle.

**Globe Artichokes from Seed.**—I have been astonished (and as I find that many of our brethren are astonished also, I submit the cause of my surprise to THE GARDEN) with regard to Globe Artichokes. A small packet of seed, which I purchased from Messrs. Sutton, of Reading, was sown Feb. 18, 1881, and we have been cutting large heads of excellent flavour, and shall have a good supply for some time to come. The use of the Globe (Artichoke) did not form part of my education, and I am profoundly ignorant of its habits; but it does seem a marvellous development from the little black seeds to luxuriant plants, large in foliage, and liberal in "fruit." It may be well to state that the seed was sown in my stove (a single seed in a pot), grown on in a warm frame, and the young plants, having been gradually hardened, were placed in the beds in May, protected from frost (of which we had some sharp visitations) by some short pieces of Yew. My gardener seems to be himself agreeably surprised by the successful results of his clever and careful management.—S. R. H.

**Autumn-sown Onions.**—The proper season for sowing main crops of autumn Onions is now at hand, and a very important crop it is; for in places where the Onion fly almost annihilates spring-sown crops, autumn-sown ones generally escape, and with care may be utilised for the supply of more than half the year. In order to make the most of autumn-sown crops, two or three distinct sowings should be made, as very much depends on the season; the earliest sown crop that we have here, about the middle of August, comes in very useful for drawing green in spring and through the summer months, while those sown the end of August or first week in September come in best for transplanting for late summer and autumn use; for, although many Onion growers say that the crop should be sown where it is to remain, I find that we generally get the finest bulbs from transplanted crops. We are now using such bulbs, and they are quite equal to



the imported ones, both in size and mildness of flavour. I find that for these transplanted bulbs the soil can hardly be too rich, but where sown to stand the winter we do not manure so heavily. We sow 1 ft. apart and transplant at the same distance, and the richer the soil the milder the flavour of the Onions. It is when checked and starved that they become so hot and stringy. We use Giant Rocca, white Spanish, and the Globe and flat Tripoli Onions; make the soil firm by treading or rolling, and sow moderately thick to allow for casualties during winter and for drawing green in spring. The remnant will make an early summer crop while the transplanted ones are growing to a large size.—J. GROOM.

#### NOTES FROM YORKSHIRE.

*SPIRÆA* OR *GILLENIA TRIFOLIATA* is finely in flower, a condition in which it has been for many weeks. Insignificant as the flowers are, the arrangement of them renders this drooping and almost creeping shrub a most desirable plant, which further commends itself to us by the fact that it adapts itself admirably to any situation. More especially is it suitable for furnishing a carpet for such things as Lilies, Gladioli, and other late and tall subjects.

*PENTSTEMON COBÆA*.—This plant I imported from North America last autumn. It was planted in an ordinary bed, in no way protected, and in spring it pushed four or five vigorous shoots, all of which, for several weeks past, have been profusely furnished with flowers of singular shape, as the specific name of the plant implies. I allowed the thick, fleshy, round stems to rest on the ground, and now, at the length of 3 ft., clothed with heart-shaped stem-clasping leaves, they lift up their extremities about 9 in., and show their flowers to great advantage. Of all the *Pentstemons* which I grow this has proved the most interesting, not merely because it is a new arrival, but because of its distinctness, which is most pronounced.

*ERYNGIUM GIGANTEUM* is just now very attractive; a moderate sized specimen from 3 ft. to 4 ft. high, densely branched and flowered, forms an attractive object. A fine glaucous metallic colour (nearly blue) pervades the whole plant, which is very suitable for planting as isolated specimens.

*ANTHERICUM DORSETI* has been with me a long time in flower; its blooms though small are very effective, being pure white, of starry form, and having bright orange stamens; they are borne on slender stems, 3 ft. high, well branched, and spreading. This is a plant seemingly suitable for any situation, as the wind appears neither to break it nor bruise its flowers. When grown amongst ornamental Grasses it is very effective.

*GENTIANS*.—Of these, *G. gelida*, *G. brachyphylla*, *G. asclepiadea*, and *G. cruciata* are now finely in bloom. The flowers of *G. brachyphylla* are, as nearly as I can remember, but very slightly different from those of *G. bavarica*, which flowered some time ago—perhaps a little more elongated, but the foliage is quite distinct, being somewhat glaucous—nearly grey, and the plant is procumbent and branched.

*LINARIA RETICULATA AUREA PURPUREA*.—This beautiful annual produces flowers in great variety, varying in colour from rose-purple to dark orange. It would be a pleasant sight to see this grown as a bedding plant; it produces numerous flowers on a much branched stem, not over tall, to the end of the season. It continually sends up new and vigorous flower-stems. No flower can be more effective for brilliancy and no annual more easily raised.

*ONONIS ARVENSIS* is, I fear, but little valued; it should be grown in large patches, when it is

most effective; the small rose-coloured, Pea-like flowers are borne 6 in. from the ground, and are topped with the newer growths of the plant, of a greyish green colour, and very downy, presenting to the eye not a brilliant, but a pleasing object. The new growths in their turn supply flowers in abundance.

*STATICE TAURICA* is a little plant which bears a very large head of bloom; the stem is single to the height of 6 in., but there it begins to branch, increasing in that respect rapidly as it ascends, the smaller ones being winged, and the smallest carrying their flowers reflexed in a pleasing manner. The flowers all face one direction. The dense head of bloom is often 2 ft. through.

*GALAX APHYLLA* is one of the handsomest little plants one can have on rockwork; its stout, round, or heart-shaped leaves, which are evergreen, beautifully toothed and tinted, are borne on slender stems 6 in. or 8 in. high, though from a specimen I have had sent me from its native habitat in North America it would seem to grow to more than 1 ft. high; its white wand-like flowers must have suggested its common name (Wand plant). For some time I found this difficult to grow, but latterly I have proved it to be of easy culture, viz., in peat or leaf-soil, in a somewhat dish or moist part of the rock-work.

*ANTENNARIA HYPERBOREA* AND *TOMETOSA* are rock plants such as all must be pleased to cultivate, being effective and easily grown; and being of steady growth and neat habit, they make suitable neighbours to any rare species, a matter of importance, which will be well understood by those who have lost many choice plants from the encroachments of gross growers.

*CREEPERS FOR ROCKWORK* should include *Linaria pilosa*, *Lobelia illicifolia*, and *Sibthorpia europæa*—three of the prettiest I know, and they have all proved quite hardy with me for two winters on an open rockery. The *Linaria* forms a carpet of dense, grey, downy foliage, pleasingly spotted with its tiny pale purple flowers. The *Lobelia* runs more freely; the yellowish-green little leaves are not very numerous, so that the wiry stems are visible, and have a net-like appearance; on such a groundwork the pure white starry flowers continuously produced are very conspicuous. Our native *Sibthorpia* is well known; in form like a miniature Ivy, it seeks every available bit of surface of earth and stone, which it soon covers, but so fragile is the covering so formed, that I do not know of any damage it has done its neighbours by over-growing them. To these might be added *Linnaea borealis* and *Acæna Novæ-Zelandiæ*, both well known.

*MARSHALLIA CESPITOSA*.—This very pretty but slow-growing plant has long delighted us with one or two heads of its small white flowers, borne on stout stems in umbels, 9 in. high, the foliage being somewhat grassy. I have sought in vain amongst trade lists and other books for information respecting this plant, but have failed. I should, therefore, be thankful to any one who has had experience with it if they would furnish me with some particulars respecting its culture. I grow it in light leaf soil and between large stones, but, as has been stated, it grows slowly and flowers very sparingly. J. Wood.

Woodville, Kirkstall.

**Weigelas as Wall Plants.**—Although generally grown as bushes, the various sorts of *Weigela* are very beautiful on walls, the shoots of last year's growth becoming perfect wreaths of bloom. We have a terrace wall annually covered with blossoms, and scarcely ever without some

all the year round. Evergreens are alternated with deciduous plants such as the *Weigelas*, *Wistarias*, &c., and various *Clematises* run indiscriminately amongst the whole of them, producing a very pretty effect for a long time. I may mention another plant that has become established in the crevices of the wall, and which gives us beautiful masses of blue, although by no means like a wall climber. I allude to *Campanula carpatica*, that seems as much at home on a wall as the *Stonecrop*, and when once established it needs no further attention, as it propagates itself, and in periods of the greatest drought looks as green and vigorous as in the most genial of seasons.—J. G.

#### FLORAL DECORATIONS IN LONDON WINDOWS.

COL. STUART WORTLEY has been calling our attention to the deplorable state of what are called the floral decorations in London windows. He does not mean St. Giles's or the East-end, but the best houses in the West-end of London, which surpass each other in the hideousness of the boxes which their occupants allow to be placed outside the windows in the season. It is nearly always the same thing, mostly red *Geraniums*, sometimes with yellow and blue accompaniments; and the boxes are usually of the same pattern; the arrangement is made to slope from back to front exactly in the same way. In fact, all might have been done by the same person. We mention St. Giles's and the East-end; but, to do justice to these interesting localities, we must say that the floral decorations therein are sometimes better than in the great houses along Park Lane and elsewhere, which we omit particular mention of. A workman may have his own fancy, and show it, or a poor woman may have a liking for a few patches of Southernwood, so that the effect is not so bad as in the aristocratic and other mansions we allude to. The other day in passing from Covent Garden towards Oxford Street we saw the whole of a small house in St. Giles beautifully embellished with the common Money-wort. A wide box ran the whole length of the house just below the first floor windows on a projection. This contained one sheet of Money-wort, which drooped down and quite relieved the dismal street.

We have often thought of, and noticed, this glaring business of the West-end windows which Col. Wortley referred to; but, feeling convinced of the hopelessness of stopping it in any way, had come to regard it as one regards London smut or London noises, Covent Garden confusion, and other evils of our city life, which seem safe from attack alike by science or common sense. If we said the dismal enclosures called gardens in and around London are so badly managed by those who ought to know how to look after them, and the public gardens themselves are glaringly wrong, what hope can we have of the people who decorate the windows? It is only a year or two since Leicester Square was planted; the conditions of the ground and atmosphere were perfectly well known to those who had to do with it; the fate of evergreens and shrubs of all kinds and coniferous trees must be well known to anybody who watches what goes on in London, or even near our towns and cities. Yet there deliberately were planted many costly evergreens, thick set, fresh from a country nursery, only to shrivel up and perish from the soot the first winter. The amount of money that is annually wasted in London gardens in planting things, which everybody having the slightest experience of London gardening must know will quickly perish, is immense, and it seems hopeless to fight against the waste.

We should much prefer seeing nothing at all to seeing the same flowers in every window. Occasionally one does see a house garlanded with Virginian Creeper, and, better still, with the common Jasmine. A great many plants, including the hardy Ferns, do remarkably well in London, if their several wants are attended to. To procure a supply of plants is a serious business, because one has to get what one can in the market,



unless there is a nursery or garden to cull from. As a general rule, a few green plants with a little bit of colour would be much better than the same glare of colour everywhere. The same amount of attention and money now devoted to window gardening outdoors might, we think, with advantage to all interested, be transferred to the growing and arranging of flowers indoors which are so much more varied, capable of being more prettily arranged, and would satisfy everybody, whereas in only few instances is a satisfactorily result obtained out-of-doors. The indoor plants would also be sure to receive from the ladies of the house a far greater amount of care and attention than the window gardening outdoors, and be all the better for it.—*Field*.

#### NOTES FROM NEWRY.

*SOLANUM LACINIATUM*, taken altogether, is one of the best of the family to which it belongs; in a fairly dry warm position it is quite hardy, that is, it is usually killed to the ground in the winter, but comes up again with renewed vigour. When well established it makes an annual growth of 4 ft. or 5 ft. with leaves from 6 in. to 9 in. long, and only in strong specimens do they assume their characteristic lacinate form. The large crumpled purple blossoms are distinct and handsome, and so are the inch long orange-yellow fruits; and whether in flower, foliage, or fruit it quite deserves a place in any garden likely to suit it.

*HYOSCYAMUS PHYSALOIDES*.—What a chaste and distinct plant this is! Here, in good soil, it grows about 1 yd. high and as much through, opening every day a number of its handsome blossoms; these are about 2 in. over, pale starch blue in colour, with large pure white centres, and five deep purple stains at the base. The large leafy calyx is also a feature of the plant.

*LOBELIA RAMOSA* has the largest (so far as I know) and the deepest purple-blue flowers of all the dwarf growing section. It is an annual, erect in habit, from 6 in. to 9 in. high. It should be raised in spring and planted out in patches here and there on rockwork, &c. It is very beautiful.

*RANUNCULUS SPECIOSUS FL.-PL.*, not to be outdone by other hardy plants, either blooming naturally at this time, or for a second time as many do, is now throwing up quite a crop of golden yellow flowers, not, however, quite so large as the spring ones are. By-the-by, it is the only flower of its particular colour now in bloom here.

*SENECIO PULCHER* is now asserting itself, and very fine it is. I cannot quite understand how it should be so precocious in some places and not in others. Our lines are here cast in rather pleasant places; still this plant never blooms the first season with us either from seed or cuttings. I find the best results to ensue by planting out early in the spring good year-old plants. Perhaps the yearlings we hear of as flowering so well and so early are like the spring-struck Fuchsias that sometimes appear at the flower shows, but which, as a matter of fact, were rooted the September previous.

*LILIUM CAROLINIANUM* is now finely in flower in a damp, shady position 8 ft. high, and very telling against a dark background. *L. superbum* planted along with it is now the same height, and will be just coming into bloom as the former is going out. This is a practice that should be always followed when we have similar subjects succeeding each other. Mr. Wolley Dod's late-blooming white Lily will be invaluable for this purpose.

*LONICERA TATARICA*, a good hardy shrub which blooms profusely in spring, and now profusely laden—reddened, in fact—with shining, Red-Currant-like twin fruits. Birds do not seem to care for them, and so they remain for a long time. We have two forms of it, one a deep crimson.

*SAMBUCUS MACROPHYLLA*, called by some nurserymen the Cauliflower Elder, the latest blooming of all, is now very fine; indeed completely covered by its handsome 1-ft.-wide heads of

creamy white flowers. It is of much dwarfier stature than the common Elder, but I find the best results are obtained by cutting it down annually. Thus treated it produces strong shoots, very handsome leaves, and larger heads of flowers.

*HYDRANGEA RADIATA* (nivea) is another really good, very hardy, white-flowered shrub of somewhat trailing habit. It comes into flower before any other species, and is never injured by frost.

T. SMITH.

#### THE ROCKERY AT LAMPORT HALL.

THE rockery at Lamport, situated on a branch of the L. & N.-W. Railway, half an hour from Blisworth, on the Market Harborough line, is a curiosity in its way, and probably differs considerably from all others, not only in construction, but in the general character of the planting. These remarks might lead the reader to suppose it to be a thing to be avoided; such, however, is by no means the case, if we may trust to the opinions of the distinguished botanists and persons of taste who have from time to time visited it, their expressions almost without exception, having been no less indicative



A nook of the Rockwork at Lamport.

of surprise than of admiration. The constructor, Sir Charles Isham, not only laid every stone, but has watched it almost daily for 33 years, having allowed no other hand to interfere. He says his desire has been to exhibit Nature under a new aspect by imitating some of her choicest effects in miniature, thereby exhibiting them to the closest inspection of the critic. Unstratified rocks and crags and pigmy trees, clad with Ivy to match, are here found in a space short of 100 ft. in length which would naturally occupy a considerable space. His desire was not to cause astonishment by an assemblage of big stones, or even of rare plants, few of the former being of a size above what a man might lift, others being but a few ounces in weight; every one, however, is effective in its position when minutely examined, and the red ironstone being beautiful in colour and construction, and the plants mostly evergreen, the whole has a pleasing and startling effect throughout the year. The accompanying woodcut represents a trained specimen of *Abies orientalis* 4 ft. high, in which a life-like monkey is swinging in the most natural manner.

H. I.

## TREES AND SHRUBS.

### PLANTING CHOICE AND RENOVATING OLD SHRUBBERIES.

THE shrubbery is destined to occupy a more important place in our pleasure gardens in the future than it has done in the past, as the rigidly formal style of flower gardening loses favour, and more attention is devoted to the numerous hardy flowers and shrubs suitable for decorative purposes than we have now at our disposal. Up to the present time I think it cannot be denied that the shrubberies in our gardens and woods have presented little variety; and one reason for this is probably that more anxiety has been felt about filling up ground than about making a choice selection, and when the latter by has been attempted the object has been defeated after neglect, whereby many of the most choice subjects have been crowded out by the stronger-growing and commoner species, and lost sight of. How many of our shrubberies present only a mass of common evergreens, consisting principally of Laurels, Hollies, Yews, and a few of the commonest deciduous shrubs, all growing in a confused mass, the strongest species finally usurping the position altogether, and the weakest, as the saying is, going to the wall. In the outlying skirts of the garden a plantation of this kind may do well enough when shelter only or furnished appearance is all that is desired, and common shrubs cost less; but in the more ornamental portions of the grounds, where shrubs necessarily enter extensively into the general combination, there is no reason why the shrubbery should not receive a fair share of the attention that is bestowed upon flower beds and borders, and be made quite as interesting. Once planted, shrubs are apt to be forgotten until they get overgrown, when a general cutting down is resorted to, and the consequences of neglect are then discovered in the many choice but weaker subjects that have perished in the struggle for existence. No collection of ornamental shrubs can be long preserved in good health and order without care and culture any more than our flower beds. Nurserymen understand this well, and we do not know any garden where the effects of judicious planting and care are so well exemplified as in some of the large nurseries, where the "show borders," as they are usually called, are furnished with a well-selected assortment of trees and shrubs, and kept in good order. Of course, the nurseryman has advantages in making a display of this kind that the private grower does not possess, for he can select his materials from a varied and extensive stock, whereas the latter has to buy, and some of our hardy shrubs are expensive. This, however, might also be remedied to some extent were private tree and shrub nurseries more common on gentlemen's estates, and better furnished than they are at present. The nursery border, however, shows one how very effective a shrubbery can be made, and the immense number of beautiful species now at the planter's disposal. Of the commoner subjects, consisting of Laurels, Hollies, Yews, Rhododendrons, Azaleas, &c., we have quite a legion of varieties and distinct forms, that of themselves would give character to a plantation without in any way exhausting the list. Then we have an almost innumerable host of other things—deciduous, flowering, and evergreen shrubs, including the newer and pretty Japanese introductions, besides Roses, that may be appropriately introduced into the shrubbery at any time, as well as the Rosery; not to speak of many fine herbaceous plants—Lilies, Tritomas, Christmas Roses, Grasses, &c.—that should help to fill up the foreground, be the shrubbery large or small. Some two or three points ought to be kept steadily in view in selecting plants for a shrubbery intended to contain a choice collection. First, although it is not desirable to cram the ground with such a number of species as to exclude a good proportion of the better sorts and surer growers, still variety must not be lost sight of, and this can only be secured by a judicious mixture of evergreen, deci-



duous, and flowering subjects. Evergreens must almost necessarily predominate, as when too many of the deciduous class are planted, the border looks bare in winter; still, the latter afford the best choice of spring and summer flowering plants, and they should be freely used. In the next place, a judicious use should be made of the numerous plants with variegated or tinted foliage of both classes—Hollies, Yews, Aucubas, Elders, and Japanese Maples, &c.—which add greatly to the interest of a collection; and, lastly, only those subjects that are likely to thrive tolerably well in the locality should be employed. Much disappointment results from planting things not adapted to the soil, and which are not hardy enough; and this often happens when the furnishing is done by contract. Those who are familiar with plants have seldom any difficulty in making a suitable selection off-hand; but in the majority of cases it is by far the best plan to visit some extensive nursery in the neighbourhood, and at the different seasons, say in May or June, in autumn about October, and again at mid-winter. At these seasons the intending planter will see and learn much that will be useful to him, and he can make a list on the spot of those things that are most likely to suit his purpose. The practice of making a selection from a catalogue is not a wise one when the buyer is without much experience in the matter.

**Preparation and Planting.**—The preparation of the ground for a shrubbery is wholly a question of expense. It is seldom that much labour is gone to in trenching and manuring, though there is no doubt whatever about the advantage of planting in a good soil. A great many—mostly all, indeed—of our commoner hardy shrubs will grow freely for a time in shallow and very poor soils if they have room and light and sufficient moisture at the root; but after a score of years or so the poverty of the soil begins to tell on their health and appearance. Evergreens get thin and poor at the top, and make weak growth and poor foliage, and everything acquires a half-starved and stunted look, that contrasts unfavourably with that luxuriance and health which enhances the beauty of a shrubbery so much. Besides, the plants make nearly double the progress in a good soil—an important matter in furnishing a garden. I could show some remarkable examples of the effects of poor and rich soils respectively on the growth and appearance of trees and shrubs. It would hardly be credited that the trees were of the same age and habit, so much has their growth been influenced by the soil in which they grow. But, after all, much depends on management. Shrubs may thrive long and tolerably well in a poor, thin soil if it be pretty well enriched on the surface, and if the fallen leaves are allowed to remain on the ground. Quite a depth of rich vegetable mould soon accumulates under Laurels, Rhododendrons, and such like if the decaying leaves are allowed to lie where they fall. They form, too, an effectual protection from frost in winter and drought in summer, acting in every respect like a mulching of manure. It is this rich natural deposit which often maintains Rhododendrons in good health for a long period when growing in a poor or unsuitable soil, as the roots push principally near the surface and subsist upon the layer of mould they find there. Artificial manuring acts, of course, even more energetically, and works quite surprising results; indeed, one of the most luxuriant shrubberies I ever saw was planted upon a dry knoll in an exposed situation, but the entire surface of the ground amongst the bushes was thickly mulched with rich stable manure, and the mulching was continued for several years after planting, with extraordinary success. Upon the whole, had I to begin planting a collection of choice shrubs on a pretty extensive scale, I should not resort to much trenching or dressing of the soil, unless it was unusually poor, where the back lines of common things were to be planted, but I should dig or trench, and also manure, the foreground of the borders of those portions destined to be occupied by the most

select assortment of dwarf species. In a common shrubbery it is useless to dig and stir the ground frequently; but where a collection of choice shrubs has to be preserved, as well as herbaceous plants, the surface of the soil must be kept free from weeds up to the edge of the lawn or walk. This can be done without much labour, and there are no objections to the practice. It also enables us to apply manure to the border as often as may be necessary. To summarise the matter I would say, prepare a good deep and rich soil for shrubs if you can, but at all events feed them in some way, either above or below, if the soil be poor. It need hardly be said also that the ground should be well drained; very few ornamental garden shrubs succeed in a wet soil. The kind of manures suitable for digging into a border in course of preparation are rotten stable manure, fresh turf parings, peat in quantity, especially where Rhododendrons and Azaleas are planted, plenty of rotten leaves, and decayed vegetable refuse generally. It is well, however, to avoid lime or anything of that nature, as it does not suit some kinds of shrubs. Planting may be performed any time in October and November, and deciduous trees should be got in first. What cannot be done at that season should be delayed till spring, beginning in February with deciduous sorts, and all such as start early in growth, and finishing off with evergreens, most of which may be planted up till May or later, but April is about the best month. Ground should be ready in good time, and all the holes dug, and when planted, mulched with rotten leaves or manure of some kind. A shrubbery does not look well when thinly planted; yet if the different species are to be preserved in health and beauty, they must have room to grow, which will necessitate thin planting at the outset. A year or two's growth will, however, make a wonderful difference to their size, and leave few vacant places. On estates where planting is carried on more or less every year it is a good plan to plant rather thickly and afterwards thin out, using the plants removed for extending the plantations elsewhere. Where no home nursery exists this will be found an economical plan, and a much quicker way of furnishing grounds than buying small plants as they are wanted. These periodical removals of surplus plants must, however, be taken into consideration at the outset, and the arrangements made accordingly, so that thinning out only will be required, and no re-arrangement of those left behind, thereby increasing the expense as well as injuring the plants.

**Situation of a Shrubby.**—Little can be said about the situation of a shrubbery, which is usually formed for purposes of shelter, or to fill up vacant ground, but still shelter of choice subjects should be studied as far as possible. There are not a few handsome shrubs of the Japanese class, and Acers, Bays, Laurustinus, Aralias, flowering Peaches, and other subjects, that will thrive in cold districts if protected from cold winds and frosts, but which are hardly worth planting otherwise: they may live, but will never become ornamental. In some nurseries in the north all the tender shrubs are grown in quarters protected by thick hedges of Beech or Holly; and it is surprising how well they do in localities where they would otherwise suffer severely if exposed. A not too heavy, but light rich soil greatly adds also to the welfare of all tender shrubs in cold climates. Another matter which it seems necessary to point out is, that choice collections of shrubs should never be planted under the shade of tall trees—a thing which is often done. In such situations few evergreens or deciduous shrubs will thrive well or long, and flowering shrubs will not flower, at least satisfactorily. Hollies, Yews, the common Laurel, Rhododendrons, and Mahonias will grow tolerably well in woods that are not too crowded with timber, and will give a furnished appearance to tracts that might otherwise look rather naked, but they will only flower or fruit very sparingly, if at all. All underwood must have a certain amount of both room and light; and even where the large trees are thin on the ground

their lower branches should be lopped off whenever they come in contact with the shrubs, and those limbs which obstruct the light most should also be removed when not likely to affect the health of the trees seriously. Where this care has been bestowed upon the plantation, I have seen Hollies and Yews grow to a large size, and retain their health and vigour, though, of course, neither ever possessed that thick habit of branches which trees growing in the full light of the sun always have.

**Renovating Old Shrubberies.**—The only means of doing this is by pruning, or rather cutting over, old and feeble trees, manuring by means of good rich top-dressings for a year or two, and filling up vacancies with young plants. In this way an old shrubbery may be restored in a short time. The best time for cutting down old trees is spring, before growth commences; but it is not safe to meddle in this way with anything except common and Portugal Laurels, and these may be cut down to within 1 ft. or 2 ft. of the ground. Other subjects may have their branches curtailed where they are straggly, and vacancies should be replanted. If over all the ground a good depth of rich soil, mixed with manure, can be spread, a sensible improvement and quick growth will be the result in a short time. The best instrument for cutting Laurels and pruning the thick branches of trees and shrubs is a light handsaw, and the wounds may afterwards be rubbed over with soil. C.

#### STRIKING VARIETIES OF THE COMMON YEW.

NOT a few of our ornamental trees and shrubs vary very much when produced from seed, and among these may be mentioned the common Yew, which appears to produce a considerable number of varieties, some very much superior to the normal type, which of course prevails; and it is worth considering whether some of the most characteristic varieties are not worth preserving. So far as I am aware, not much has been done in this direction, unless it be among the variegated and Irish Yews, but abundant opportunities for selection appear to exist. Amongst young seedlings not so much difference is observable, but after a few years the trees present very distinct differences of habit and growth. A large proportion of seedling Yews naturally assume a wonderfully exact pyramidal shape, while others are round or bush-headed, and in some cases they vary greatly in density of habit. In a number of young and old trees growing in the garden here I could point out not a few distinct varieties; but one tree in particular calls for notice, on account of its ornamental appearance, free growth, and close habit. What the age of the tree is I cannot learn exactly, but it belongs to a lot of the same species that were planted many years ago—half a century I should imagine by their appearance, and seedlings evidently. The tree in question, which is by far the finest and largest of the number, does not extend at the top by producing a straight annual leader, but lengthens by the formation of little tussocky tufts, which extend quite as fast, if not faster, laterally, and which in the course of years have resulted in a tree about 40 ft. high, nearly 40 yds. in circumference, and a perfect natural pyramid, as symmetrical as a trained Azalea. The branches are as dense as a mop, and form a thick dark mass down to the lawn. Had the tree not been hemmed in on two sides by a terrace wall, its circumference would have been much greater. It is a tree that strikes a stranger at once. Though aware of the variety commonly produced from seed, I had not seen any so remarkable as this. What I would point out, therefore, is the desirability of securing stock of such types for ornamental planting, and especially for forming hedges, for which purpose they are certainly fitted in a remarkable degree. It may just be added that the tree alluded to does not answer to any description of named varieties already in existence, but is clearly a sport the like of which is probably not unfrequently produced, although, judging from the examples usually sup-



plied from nurseries, such types are not very common.

#### IVY ON TREES.

I AGREE with "Repton," "J. S. W.," and others, that Ivy is not so hurtful to trees as many imagine; In fact, it may be so managed as not to hurt them at all. Started in vertical lines at first, the Ivy will climb in this direction; not a few, however, to save trouble, either leave the Ivy to its own devices or give it a spiral start round the bole. Either way—when it assumes or is forced into this form—of course the stems of the Ivy become bands around the tree, resisting its growth in proportion to their strength, and not seldom cutting the bark and even embedding themselves in the wood. When such is the case, of course the Ivy is injurious; but when the Ivy merely clings to the bark or branches, and mounts in long and tolerably straight sprays from the ground to the higher parts of the tree, it does little or no harm. The stem roots merely hold on to, they do not feed upon, the bark. The Ivy also keeps the stems of the trees warm and dry. It forms, after a time, almost an impenetrable screen, not only from the density of its foliage, but the closeness of its stems and the matted roots. Possibly the mere weight of the Ivy might prove burdensome to small trees, but few care to clothe such with Ivy. It is seldom till trees have reached to middle age or beyond it that they are clothed with Ivy, and from that period it seems to do them little or no harm if kept within due bounds.

This leads me to state that though Ivy must be allowed freedom, it need not be wholly uncontrolled. A little judicious training might often save branches that an excessive growth of Ivy would destroy. Light sprays are also, as a rule, more effective than dense branches or huge faggots of Ivy, which the Irish varieties are apt to grow into if uncontrolled. Besides, the chief beauty of Ivy on trees is to clothe their bare trunks and larger branches. These light sprays may droop and wave, imparting new grace and beauty to the tree without injuring its growth or shortening its life.

It is quite true, as pointed out by "J. S. W.," that Ivy does not grow on all trees alike. Of the two trees, however, he notes as unfavourable to Ivy, I agree with him in regard to the Beech, and disagree *in toto* in reference to the Sycamore. Of all our trees, the Ivy seems to favour the Sycamore the most. It luxuriates under its dense shade, and clothes the boles and main branches with dense screens and ponderous canopies of verdure. It does indifferently on the Beech, not because its shade is more dense, but its roots are more numerous and impoverishing than those of the Sycamore. Though the Ivy will live a hardy life among rocks and thrive on the poorest soils, to enable it to climb trees rapidly and hold its own in the fierce struggle for existence with its roots and those of the trees it is striving to enwreath and adorn, strong roots and liberal supplies of food are useful. I believe the rapid decay of the Sycamore leaves in the autumn supplies this very pabulum the Ivy requires; whereas, Beech leaves decompose slowly, and form very indifferent manure. But then the Ivy thrives also exceedingly well on the Scotch Fir, and no one has ever set a high value on its needle-like leaves as a manure. True; but the Scotch Fir is a surface rooter, and the Ivy as it grows large sends its roots well down into the soil. But whatever the causes that foster or hinder its growth on certain occasions, it seems to injure many of them very little, if at all. There are also Ivies and Ivies alike in regard to their modes of growth and their beauty. They do not by any means grow all alike, nor affect either the trees or the soil in the same way. Looking at the wealth of colour, form, and habit we have in our Ivies, it seems a pity in this age of improvement, when a sort of feverish excitement pervades in favour of new styles of gardening and novel features of landscape, that more and better use

should not be made of our Ivies, green and variegated.

D. T. FISH.

#### CLIPPED AND NATURAL HEDGES.

IT is the custom at present to clip Holly and Yew hedges in a square or round shape, according to circumstances and taste, but it may be questioned if this be the best plan when such hedges are planted for shelter. It is certainly the slowest way of getting them up, and it entails the most keeping, without, in my opinion, enhancing the ornamental appearance of the hedge. I would suggest to those about to plant such hedges not to clip them with shears annually, or oftener, as is usually done, but simply to trim the most straggling shoots in with the knife once a year, and not to meddle with the tops till the hedge has attained the desired height. By this treatment it will be found that the Holly, and Yew also, will form as close a mass as if it had been clipped, and look better and less formal. It will be necessary to give the hedge a little more room at the beginning for breadth of bottom, which, however, need not be allowed to extend after a certain time. We have here a long Holly hedge, or rather two, that have been planted many years, and which would be reckoned good samples of a clipped hedge; but I cannot say I admire them more than one of the same kind and the same age, which is between 30 ft. and 40 ft. high and has never been touched with the shears, and yet it is dense enough for any purpose, and would have been much more so had it not been partially shaded by large trees. A screen like this, growing on the north side of a garden or anywhere where shelter is required, is better than an ordinary wall, as its sheltering influence extends to a much farther distance. The Holly grows with great speed in a good dry soil, and it seems to me to be defeating our purpose to cut it back often and severely for the sake of an idea as regards shape, and merely allow it to progress by inches, when it will grow by the foot and form a lofty hedge in a few years. I remember, in a garden where I once was, the whole of the back quarters of the kitchen garden, where all the hotbeds, frames, and other structures were placed, was protected by a Holly hedge about 8 ft. high, which was trimmed with the shears every summer, and much time the work took, as it was considered of much importance that the surface on both sides should be perfectly even; and to protect the side next the field a fence had to be maintained, but it served its purpose not a bit better than if all this labour had been dispensed with, if so well. It would have been as good a hedge, and a higher one, if it had been left alone and only trimmed with the knife. The Holly is the most amenable to treatment of this kind; it will accommodate itself readily either to the shears or the knife. So will the Yew, though the latter is more liable to die at the bottom, or get thin, when clipped for a long period; but when permitted to grow more naturally, the bottom branches retain their luxuriance much longer. One of the best—if not the very best—varieties of the Holly for hedges is *Sheperdi*, perhaps the finest free-growing green variety in cultivation, though, if I remember rightly, it is not a berry-bearer. It grows at a great rate, and spreads out laterally about as fast as it grows upwards, extending near the surface of the soil in an extraordinary manner. The foliage is also very broad and shining, and the general habit of the tree imposing. Its worst fault is that it is still very dear. There are, however, other varieties but little inferior to *Sheperdi* in appearance or as growers. In natural hedges, however, no doubt berry-bearing kinds would be most desirable; and few, if any, which are at the same time good growers, surpass the common Holly in this respect. Clipped hedges never bear fruit, and the fact that natural ones do is an argument in their favour.

J. S. W.

**Town Trees.**—If the examples of pruned Acacias seen so freely about Chiswick are to be

regarded as evidence of what they may be all around London, then must the Acacia be regarded as one of the best of town trees. Perhaps the most striking evidence of its fitness is to be seen in the lines of it that grow so well on either side of the new Sutton Court Road, which borders the Royal Horticultural Gardens. These have large round heads literally masses of deep green foliage, luxuriant and beautiful. Perhaps some would take exception to the form of the heads, which results from their annual pruning, and call them mop-headed; but though in this sense a little formal, the defect is more than compensated for by the gracefulness of the leafage. In broad thoroughfares, such as the Thames Embankment, nothing can excel the grand Plane. It is a noble tree that spreads abroad with age its giant branches and furnishes shade and greenery in abundance. The Lime is more suitable for narrow streets, but it is a sadly disappointing town tree, suffering much from drought, shedding its leaves early, and even earlier turning rusty. These two trees were seen in strong contrast the other day on the Shaftesbury Park Estate, where doubtless planted at the same time in the somewhat narrow thoroughfares the Limes have a starved aspect, whilst the Planes grow vigorously and have good foliage. One tree at least of *Platanus orientalis* so distinguishable by its elegantly cut leafage was doing remarkably well. It was evident, however, that either these trees must soon have the saw freely applied, or the branches will poke holes in the windows. It is specially in narrow streets and roads where the Acacia if pruned would be so effective. Fortunately, no tree takes regular pruning with more good will. Let alone, it eventually forms a thin, loose looking tree seldom handsome, and because of its propensities in shedding flowers, flower-stalks, leaves, and leaf-stalks, all through the summer becomes the terror of gardeners. When constantly pruned, however, it develops strong robust leafage, and such density and beauty that all can admire.

—A. D.  
**The Purple Nut.**—Among the great variety of variegated and similar trees that are offered, our experience is that a great number are not of much use; but here and there there are exceptions, and remarkable ones, and this is one of them, being an absolutely hardy tree, and in all ways well fitted for our climate. This may take an important place in plantations, though it should never be overdone. The judicious use of such a thing means its temperate use. A purple-leaved Peach, coming to us from the same nursery (Messrs. Osborn's, of Fulham), is also a really distinct and good thing; but in this case we have to deal with a tree which is sometimes tender, and during recent severe years has even been divested of its leaves in summer—we mean ordinary Peaches grown on walls. A purple variety of the Almond would have a better chance.

**Exochorda grandiflora.**—This is a most desirable plant for the shrubbery, its lovely spikes of white flowers being produced in great profusion and deliciously fragrant. I saw a specimen of this plant a few days ago planted among *Rhododendrons*, the soil being loamy clay mixed with peat. Thus circumstanced it was in a most vigorous condition, its flower-spikes being from 8 in. to 10 in. in length, each furnished with several laterals after the manner of a *Veronica*. The foliage is distinctly ribbed and shining green in colour. The habit of the plant is erect, the unopened spikes drooping in a most graceful manner. Its usual time of flowering is, I believe, in spring.—C. DENNIS.

**The Golden Elder.**—The late hot weather appears to have developed the golden tint of this variegated tree to an unusual degree. I lately saw some large highly developed specimens of it that glistened like burnished gold in the sun, and that lit up the garden in which they were growing in a most effective manner. Opinions differ as to the value of this tree, owing, I think, to the fact that soil and situation affect it to a considerable extent. According to my experience, it is useless to plant it in low-lying, damp situations



or where it gets even partial shade. Thus circumstanced, the foliage assumes a sickly hue, neither green nor gold, and is far from being ornamental. The Golden Elder requires free exposure to sun and air, and only develops its glorious golden tints to perfection when the roots find themselves in a warm and rather poor soil.—JOHN CORNHILL.

**The Variegated Thorn** (*Cratægus oxyacantha variegata*) is not the novelty your correspondent infers; it has been in cultivation here upwards of twenty years.—SALTMARSH & SON, *Chelmsford*. [Is it worth growing? or does it, as a variegated-leaved tree, produce any effect that makes it worth a place?—ED.]

**Hardy Heaths.**—The varieties of *Erica vagans* are now everywhere masses of bloom, a condition in which they will continue for a considerable time to come, and they form beautiful objects in the shrubbery border. They grow freely in most light soils, but prefer a deep sandy situation, where in a short time they form bushes several feet in circumference. The Irish Heaths also are still flowering freely, their white and purple bells being extremely effective in conjunction with the kinds just alluded to.—C. DENNIS.

**The Yellow-fruited Mountain Ash.**—The Mountain Ash, which is now so brilliant an object in many of our hill woods, varies like other trees and shrubs, and Messrs. Osborn, of Fulham, whose tree nursery has long been an interesting storehouse of good things, send us the handsome yellow-fruited variety. This would be a desirable addition to ornamental plantations. They also send us another Mountain Ash, called *americana*, but which does not seem to differ very much from the type except in having a larger truss of fruit. More interesting still is the handsome fruit of a new *Pyrus Hosti*, which also promises to be a very handsome flowering tree. The mountain ash known as Lord Fife's has lately struck us by its vigour and brilliancy; its leaves and shoots are also different from those of the ordinary one.

***Rhus glabra laciniata*.**—This elegant shrub, which we have praised for a long time when grown in a peculiar way, comes to us in the shape of large handsome cut leaves. The way we mean is by treating it as a single stemmed plant cut down every year; in this way the young growth is so vigorous that the many elegant leaves are produced with a Fern-like grace and freshness, which makes the plant very useful in the flower garden. For example, in districts where tender plants could not be grown well, this, being perfectly hardy, would be a substitute. In the same way some other hardy shrubs might be treated—cut down yearly, and allowed to make one strong shoot of graceful, ample, or nobly formed leaves, as the case may be. But, apart from this interesting use, it is a very elegant shrub when allowed to grow freely and not over-crowded in the common shrubbery, the grave of so many good things.

#### WIER'S CUT-LEAVED MAPLE.

IN THE GARDEN (p. 106) we gave illustrations of two fine varieties of the Silver Maple (*Acer dasycarpum*) that originated in Messrs. Ellwanger and Barry's nursery at Rochester. We now furnish an illustration of another variety introduced by them some seven or eight years ago, of which they speak as follows:—

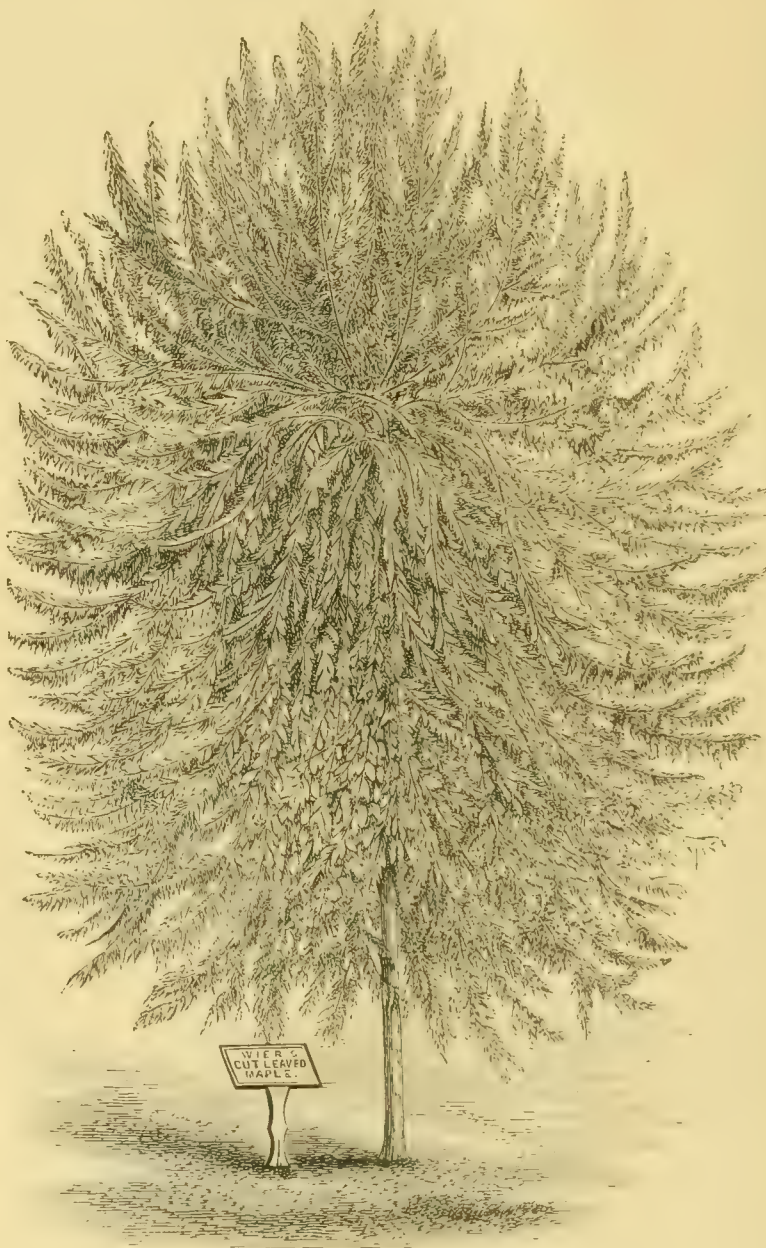
"WIER'S CUT-LEAVED SILVER MAPLE (*Acer Wieri laciniatum*) is a variety of the silver-leaved, and one of the most remarkable and beautiful of trees with cut or dissected foliage. Its growth is rapid, shoots slender and drooping, giving it a habit almost as graceful as that of the Cut-leaved Birch. The foliage is abundant, silvery underneath, and, on the young wood especially, deeply and delicately cut. The leaf-stalks are long and tinted with red on the upper surface. We believe it will rank at once

among the most interesting and attractive lawn trees, and may be easily adapted to small places by an occasional cutting back, which it will bear to any degree necessary, as well as a Willow."

#### NOTES AND READINGS.

It is a witless kind of logic that seeks to make it appear that because a person may admire

who had dull moral perceptions; who all his life had mistaken the grotesque for the beautiful; who regarded the monstrosities and abortions of Nature as her best and most beautiful productions, and who revelled in the "splendours" of such like deformities. Such an one can, I feel sure, have no just conception of "the good, the beautiful, and the true"; he lacks the necessary faculty, and has no business to be called a florist.



pretty single flowers he must necessarily hate all double ones. There seems also to be some confusion of ideas on the question of double v. single forms among those who have taken the matter up in the different horticultural papers. In these pages a protest has only been uttered against the arbitrary forms set up by specialists, who claim to work on "aesthetic" principles, and are not loth to say they are right and everyone else wrong. Neither Baumgarten nor Kant would, however, have called a man an aesthetic

Double flowers are pretty as well as single ones, and from a gardener's point of view some of the former are the most useful, but the superiority of one over the other as objects of beauty cannot be demonstrated so easily as some would have us believe. Nor is it all a matter of taste, as has been asserted. "Taste, if it mean anything but a paltry connoisseurship," says Carlyle, "means a general susceptibility to and a sense to discern all beauty, order, goodness wheresoever or in whatsoever forms and accom-



paniments they are to be seen," and this implies as its first condition a finely gifted or rather balanced mind, and a keenness and justness of vision rarely met with in specialists and men of one idea.

There is one thing, however, to be said in favour of single flowers—they are usually the most showy and produced in greatest abundance, as well as in the greatest perfection. This is well exhibited in the Pink and others of the Dianthus family, in the Pelargonium, the single Dahlia, and notably in the Hyacinth, the single forms of which are now regarded by all as by far the finest, although most favour was long shown to the double kinds by the florist; it was the ordinary cultivator who discovered the merits of the single kinds for general decorative purposes.

That account of the average rainfall in the British Isles during ten years is suggestive. If a nearly straight line were drawn from the Isle of Wight in the south to Dunnet Head in the north, it would divide the country into two zones, comparatively speaking—a wet and a dry. The south-eastern counties are much the driest. In Bedford the rainfall drops to the low figure of 18 in., and at Hunstanton, in Norfolk, to 19½ in. Beyond the boundary line on the west the minimum fall is only a little less than double these amounts, and the maximum is over 154 in. in a noted wet spot in Cumberland—Seathwaite, where a much heavier fall has been recorded at times. On the east coast in England 30 in. and 31 in. are rarely reached. I fear some wag must have emptied a pitcher of water into the "West Street" rain gauge at Tavistock, or run a quantity out of the gauge at the library in the same town, as the average difference between the two near stations for ten years is as many inches. At Bolton, too, local influence has been at work in the distribution, as much as from about 8 in. to 10 in. being recorded in the different parts of the town. 18 in. and 20 in., it may be mentioned, as in Beds and Norfolk, is considered a low rainfall, and is lower than that of the most favoured districts of California.

Mr. Sargent raises a question (p. 121) that has more than once given rise to animated discussion in the gardening papers in this country when he refers to the inferior flavour of indoor fruit. His experience in this respect is corroborated by mostly all fruit growers in this country. Some years ago some of the advocates of orchard houses did not hesitate to say that indoor ripened fruits were not only equal to those ripened out-of-doors, but even superior. The weight of testimony was against them, however, and the practice of orchard house cultivators is corroborative of the opinion that the less glass protection the fruit receives after the crop has set the better will its quality be. I believe it was this idea among other things which suggested Fountaine's "railway orchard house," in which the trees were grown in cars that could be run in and out of the house at pleasure, but the idea, though a practical one, did not seem to take.

I believe it may be said of all fruits that out-door ripened examples are best flavoured, but this applies more particularly to hardy fruits, like the Plum, the Pear, and the Peach. Not only is the fruit better flavoured, but it is fleshier and heavier also, as well as better coloured. The difference in some instances is perhaps not so great as to make it a question of much importance, but the fact has an important bearing on the culture of fruit under glass. It is said, too, that some Pears

and Apples that never acquire a good flavour under glass in the south are tolerably good when ripened under the same conditions in the north. It would almost appear, therefore, that the deteriorating cause is the same as that which impairs the flavour of some varieties when grown on a south wall, while the same from standards may be excellent.

Lindley, long ago, discussed this question in his usual able way, and even went so far as to say that Pine-apples ripened out-of-doors in England were of better quality than those ripened in the hothouse, which is doubtful, to say the least; he pointed out that heat and light were not the sole agents concerned in the production of flavour, but he admitted that it might be some "unknown cause" connected with the freer access of the air to the trees which accounted for the superiority of out-door fruit, asserting that not only fruit but all vegetable secretions of whatever kind were improved in quality by exposure to the air. The Gooseberry is, we suppose, the fruit that suffers worst from protection. Has Mr. Sargent ever tried houses with a north aspect for Plums in America? This is said to make a difference in very sunny and warm climates.

Mr. Taylor, of Longleat, has set himself a task in attempting to prove that the fan system of training stone fruits "is wrong in principle according to all our notions of vegetable physiology." Mr. Taylor is no doubt an excellent cultivator and means what he writes, but it is slightly presumptuous on his part to assume that his own particular notions on vegetable physiology are "all our notions." So far as I have ever read or heard, I do not believe that any writer, except Mr. Taylor, entertains the opinions he has expressed on the principles of physiology and fair training. It is not at all a bad plan for a writer who wishes to establish his case to assume that everybody else thinks as he thinks, but it is not always safe nor wise to affect over-much confidence in public opinion unless there are some grounds for it, and grounds Mr. Taylor has none. In fact, his article in a contemporary does not show that he understands the physiology of the fan system. At all events, he does not attempt to explain it. Every noted cultivator has advocated the fan shape for the Peach, and they have all defended it, and explained it on intelligible physiological principles. There is not one of them who shares Mr. Taylor's "notions" on that point. The advantages of the fan is that it permits of an even distribution of the sap—a fact clearly enough demonstrated in practice; and when a writer states that the system "always fails on a wall," he states that for which he has no foundation whatever, and must be aware of it unless we are to credit him with extraordinary ignorance of his subject.

Mr. Taylor's condemnation of the fan system is, it appears, founded upon an embryo experiment of his on what the late Mr. R. Thompson, of Chiswick, calls "oblique training," and which, as this author points out, has the merit of leaving the bottom of the wall bare. Mr. Taylor's trees are to be eventually 8 ft. asunder, and as the lowermost branches are led off at an angle of 30°, very nearly one-third of his 9-ft. wall will be rendered useless, unless he adopts either the fan principle or the horizontal to fill it up; but this trifling objection he does not allude to.

Another of Mr. Taylor's thoughtful assertions is that "seven-eighths of the men brought up in gardens never could be trusted to attend to fan-

trained Peach trees had they ever so much tuition on the subject." Pathologists and others have admitted that there are a fair proportion of weak-minded people in the community, but Mr. Taylor's calculation of the proportion of incompetents belonging to his own class is an appalling one—something like 90 per cent. cannot "be trusted to attend to fan-trained Peach trees!" As there are many other more particular operations in the every-day practice of gardening, it may be guessed from this to what a low ebb gardening has fallen, and likely to fall, in this country. Unless Mr. Taylor employs more than the average number of young men under him, he cannot possibly have experience of more than a few competent youths in the course of a lifetime, a fact which explains at once his disappointment with the fan system of training. It is only charitable to suppose that Mr. Taylor, like "Joe's" wife in "Great Expectations," may have been "on the rampage" when he wrote his article.

That thoughtful arboriculturist, Mr. Mickie, furnishes some excellent advice on the subject of thinning plantations in a late number of the *Journal of Forestry*. "When a plantation," he points out, "which has long been allowed to become overcrowded is suddenly thinned out, the trees left experience just the same injurious effects that removal to an adverse climate would have produced. The sudden exposure to the air and cold affects roots and branches alike disastrously, and a sickening of the trees and general enfeeblement is the result, which no subsequent care may be able to quite overcome." Gardeners understand this in regard to plant culture generally, but in the thinning out of woods and groups of trees in parks the evil consequences pointed out by Mr. Mickie are too often overlooked, particularly by landscape gardeners. Another equally reprehensible practice, too often followed both by woodmen and gardeners, is the transplanting of shrubs and trees from woods and other sheltered situations to open or exposed positions. The change of situation in such cases does far more harm than any mutilation the roots suffer in removal. Many trees indeed die from no other cause than exposure to cold and cold winds, from which they may have been previously sheltered. It is a common practice in thinning young plantations to transplant those trees that have to be removed, but if the trees left suffer from thinning, as Mr. Mickie points out, how much more must those suffer which are at the same time removed to more exposed positions. A good deal depends upon the age of the trees—the older they are the worse they suffer, and all the Fir and evergreen tribe suffer worst. The common Spruce is very sensitive, and so is the Yew, the Holly, and the Portugal Laurel.

It has been predicted in THE GARDEN more than once that the standard form of Peach tree would eventually come to be adopted in Peach culture under glass, and it will interest cultivators to hear of a good example of this kind. Mr. Methven, of Edinburgh, writing in a contemporary, says that at Whitehill, near Edinburgh, there is to be witnessed a sight seldom seen in this country, in the shape of some natural standard Peach trees growing under a span-roofed house 32 ft. long. There are four trees, each about 18 ft. high and 12 ft. through, and bearing not less than from 2300 to 2500 fine fruit, or nearly 200 dozen. It is extremely doubtful if as many fruit could be got from a house of the dimensions given by the ordinary trellis system of training, entailing far more trouble in training and tying, and the trees do not, it appears, occupy the whole of the house



by a good bit. The Peaches at Whitehill have, it is stated, been famous for some time, and such a noteworthy example is sufficient to settle the question of the utility of the standard form.

PEREGRINE.

## NOTES OF THE WEEK.

**RUBBECKIA PURPUREA.**—This stout and distinct plant comes from various places, but we never care much for it as a garden flower.

**OREOPSIS ROSEA.** Called by courtesy rose-coloured, but really a poor thing, much nearer a "curiosity" than is desirable. In flower at present.

**THE DOUBLE HAIRBELL.**—This pretty plant, usually grown as *C. soldanellaeflora* fl.-pl., appears to be a variety of our native and common Hairbell (*C. rotundifolia*). It is now in bloom.

**FEATHER GRASS.**—So great is the demand for this Grass in a dried state, that Messrs. Hooper, of Covent Garden, have, we learn, received in two consignments no less than 8 tons of it!

**THE SERRATED MILFOIL** (*Achillea serrata*) comes to us in a so-called double form, but it is a poor plant compared with the double Sneezewort (*A. Ptarmica* fl.-pl.)

**THE CAUCASIAN SCABIOUS** (*Scabiosa caucasica*) is one of the finest flowers of the season, light blue, and paler towards the base; perfectly hardy, and of excellent form and great vigour.

**WHITE BELLADONNA LILY.**—This chastely beautiful bulbous plant we saw a few days ago in flower in the Birmingham Botanic Gardens. Instead of being rosy-pink, the flowers are of snowy whiteness. A lovely companion to the typical form.

**CARDUS ERIOPHORUS.**—A handsome native Thistle, seldom used in gardens, though worth a place. We saw it plentiful in Oxfordshire the other day. A Thistle good enough for the mixed border, and excellent for a wild bank. From Glasnevin.

**THE WILLOW GENTIAN** (*G. asclepiadea*) is one of the beautiful plants of the present season; always to be depended on, and growing in any soil, but more freely in peat or sandy soil. The habit is good, as well as the flower. Fine specimens come to us from Glasnevin.

**AUGUST FLOWERING CHRYSANTHEMUMS.**—It is a pity that now having this summer flowering type we cannot get the superior colour, size, and form of the autumn varieties infused into them. They are rather poor in colour, and appear to us to have no good quality except the earlier bloom.

**THIBAUDIA PULCHRA.**—This is not often seen, except in such gardens as that at Trentham, where it is beautifully in flower in the large conservatory tied to the rafters and supports. Its branches, which are long and slender, extend a long distance and at intervals throw out clusters of long showy crimson and yellow blossoms.

**A LARGE SPOTTED ANTHURIUM.**—*Anthurium Scherzerianum* var. *Andegavense* is the name of a very large curiously dotted white and scarlet variety of the well-known Anthurium raised by a gentleman at Troyes. M. Godefroy-Lebeuf, of Argenteuil, sends us a life-sized drawing in colour of it. It promises to be a fine stove plant.

**POTIOS ARGYREA IN FLOWER.**—So far as we are aware, the flowering of this rather common Aroid is very uncommon. It is in this condition in one of the stoves at Trentham, and though not very attractive is highly interesting, as it assumes quite a different style of growth before producing flowers. The spathe is of a deep green colour.

**COMBRETUM PURPUREUM.**—This beautiful old stove climbing plant is not sufficiently appreciated, for few plants are so persistent in their flowering. It is grown very finely by Mr. Green-

field, at The Priory, Warwick, where it is now beautifully in flower, some of the wide-spreading flower clusters being 18 in. long. It is grown in a moderately hot stove.

**NICOTIANA AFFINIS.**—In the gardens at Warwick Castle this hitherto uncommon plant is grown numerously for the sake of its pure white flowers, which emit, particularly at night-time, a Jasmine-like odour. It is apparently of easy growth treated as an ordinary greenhouse plant. It is likewise grown on a large scale in the Chad Valley Nurseries, Birmingham.

**THE RAMANAS ROSE** (*Rosa rugosa*).—We saw a fine specimen of this beautiful Japanese shrub the other day in the Chad Valley Nurseries, Birmingham. It measured some 6 ft. or 8 ft. through, and is now studded with large orange-red fruit as well as flowers. The effect of the brightly coloured fruits and flowers and the deep green foliage is very fine.

**THE PERENNIAL SUNFLOWER** (*Helianthus multiflorus*) is very showy just now, both in the double and single state, and among the best of the now too-numerous plants of the same character that in recent years have been cultivated. Even the best, moreover, require to be carefully placed. A group in a shrubbery of each would suffice for most gardens.

**PENTSTEMON BARBATUS**, often called Chelone barbata, is very attractive now, and may be seen in the form of several varieties. It is a pretty plant grouped with other slender hardy flowers of good quality. The very tall form might be used with good effect to rise above dwarfier flowers, being spare in habit and not likely to shade anything injuriously.

**ARDISIA OLIVERI.**—This is a noble stove shrub quite distinct in habit from the ordinarily met-with *A. crenulata*, and instead of berries the flowers in this case are the most attractive. These are borne in large clusters and are pinkish-purple, a colour which contrasts strikingly with the bold green foliage. It is now in fine condition in the gardens at Trentham.

**THE TRUE TILLANDSIA LINDENI.**—We saw a beautiful flowering example of this lovely plant the other day in one of the stoves at Trentham Hall. It differs from the other forms in having the flower-spathe broad, quite flat, and of a delicate pink colour, forming a striking contrast with the deep violet-purple blossoms which are produced from the sides of the spathe. It was lately figured in THE GARDEN.

**INGA PULCHERRIMA.**—A wonderfully fine example of this handsome East Indian shrub is now in flower at Trentham, where against one of the back walls of a moderately warm house it covers a space 10 ft. or 15 ft. in width. The flowers are borne in feathery tufts of a deep crimson colour, and these with the delicately cut foliage combine to render it highly attractive. It deserves to be more extensively grown.

**PRATIA ANGULATA.**—The best plan of growing this pretty New Zealand plant we have seen is practised by Mr. Greenfield, at The Priory, Warwick. The plants are grown in suspended pans, and the slender branches, laden at this season both with pretty white flowers and reddish fruits, hang over the sides most gracefully. They are grown in a cool greenhouse, where they seem to thrive admirably—much better than in the open air.

**TABERNÆMONTANA CAMASSA.**—This extremely pretty shrub is found to be invaluable by Mr. Stevens, at Trentham, for supplying the demand for cut flowers. The flowers, though not so large as those of the *Gardenia*, form excellent substitutes for it, and three or four put together are quite as effective and the perfume exquisite, though not so powerful. The Trentham plants are large shrubs, and yield continually profuse crops of blossoms.

**ESCHYNANTHUS LOBBI.** This beautiful stove plant is commonly met with cultivated as a basket plant, but a more effective way of growing

it is allowing the branches to cling against a moist soft wall, which they readily do by means of adventitious roots like those of the Ivy, which they throw out at every leaf joint. It is grown thus in one of the stoves at Trentham, where it is planted against a back moist wall, to which it clings closely and bears a profusion of deep crimson flowers.

**HENRI JACOBY PELARGONIUM.**—This richly coloured Pelargonium may now be seen in good bloom at Hampton Court, where it is singularly effective. It flowers most freely, the trusses being large and in colour an intense crimson, standing the rain well. Those who want a deep richly coloured Pelargonium for bedding or for any other purpose will find this all they can desire.—A. D.

**FINELY FLOWERED DISAS.**—Some of the finest flowered plants of *D. grandiflora* we have seen for some time are in the Birmingham Botanic Gardens, where Mr. Latham grows it in quantity for the embellishment of the large conservatory. Some of the plants bore nine blooms of large size and highly coloured. They are grown in pots, surfaced with live Sphagnum Moss, and supplied with abundance of water in the growing season.

**LASIANDRA KUNTHIANA.**—This is one of the showiest stove plants we have met with for some time. It much resembles the better known *L. macrantha*, but differs from it in having narrower and more silky leaves, and more than all in its stronger and more straggling growth. The flowers are quite as large as those of *L. macrantha*, and of the same deep violet-purple. A good many plants of it now in perfection in the Birmingham Botanic Garden are wonderfully attractive.

**HYACINTHUS CANDICANS.** This is now in good bloom here, but, like a good many other plants, we find it more effective when associated with some contrasting plant. An irregular clump here is thickly planted amongst with the dark leaved *Lobelia ignea* and a few tall-growing *L. cardinalis*. The latter is now in bloom; the former not yet, having been put in rather late. The effect is very good. Another season we shall try a good many combinations—the various blue and purple forms of *L. syphilitica*, the magenta *L. Milleri*, and so on will be used to help the Hyacinths.—T. SMITH, *Nerby*.

**TUBEROSES OUT-DOORS.**—These chastely beautiful flowers may be seen by the hundred in fine condition in Mr. R. H. Vertegan's nursery, Chad Valley, Birmingham, and the stock includes some scores that are in flower quite in the open, having been grown in unheated frames. These plants are in vigorous growth, and much dwarfier than those grown in heat, though the flowers are in no way inferior; on the contrary, they possess in the bud stage that beautiful blush tinge so fine in contrast with the pure ivory whiteness of the expanded blooms. The plan of growing Tuberoses under cool treatment certainly ought to be more practised than it is, for the plants not unfrequently take up valuable space needed by other subjects. Pearl is the variety grown.

**VARIEGATED ROCK PLANTS.**—As the early autumn rains refresh these, they get brighter in colour. The following, sent by Mr. E. Jackson, are in good foliage at this season, viz.: *Pulmonaria sibirica* (Siberian Lungwort), *Lysimachia Nummularia aurea* (Golden Creeping Jenny), *Veronica incana* (Hoary Veronica), *Polemonium variegatum* (variegated Jacob's Ladder), *Bambusa Fortunei variegata* (Ribbon Bamboo), *Veronica gentianoides variegata*, *Diplopappus chrysophyllus* (golden Diplopappus), *Arabis lucida variegata*, *Calluna vulgaris aurea* (Golden Ling), *Chamaepeuce diacantha*. *Calluna vulgaris hypnoides* is very aptly named, its foliage and habit bearing a close resemblance to some of the Hypnoids. *Diplopappus chrysophyllus* has been beautifully golden all through the season.

**ASPARAGUS FALCATUS.**—The tender species of *Asparagus* are not usually cultivated for the sake of their flowers, but rather for their exquisite feathery foliage; but *A. falcatus*, to which



allusion was made last week, well deserves to be grown for its flowers, which though small are produced in profusion along the elegant slender stems intermixed with the narrow foliage. The blossoms are white (pink in the bud state), star-shaped when open, and each has five orange tipped stamens, which give a glow of colour to the short dense racemes. It is now beautifully in flower in the Cactus house at Kew, where it is trained to one of the rafters. Among the kinds remarkable for their feathery foliage are *A. consanguineus*, *lucidus*, and *plumosus*, all of which are in fine condition in the same house.

**AILANTUS GLANDULOSA IN FRUIT.**—There is a plant of this in the Pinetum at Kew bearing capsules in such profusion as to give it a very attractive and singular appearance. These capsules, which resemble the keys of the Ash, are of a bright reddish brown, and in the sunshine impart a very cheerful tone to the tree, being so freely produced that at a distance one scarcely recognises the *Ailantus* under such a garb.—H. P.

**RUBUS ODORATUS.**—Growing in a semi-wild condition in the pleasure grounds at Warwick Castle, this North American Bramble has an uncommon appearance among other shrubs; the large rosy-purple flowers and massive vine-like foliage single it out from among others. It is a plant well suited for the wild garden, as it takes care of itself, yet does not soon supplant weaker subjects.

**DAHLIA GLABRATA.**—Now that we are beginning to cultivate single Dahlias, this exquisite little Mexican species should by all means be sought after, as it is not only very pretty, but remarkably distinct in appearance from any other. The flowers are about the size of a crown-piece, and of a delicate mauve-purple with golden centres. It grows slender, spreading, and dwarf, and is extremely floriferous. It is grown well in the Birmingham Botanic Garden.

**TYDÆAS AND EUCODONIAS.**—These beautiful Gesneraceous plants are grown well and numerous by Mr. Greenfield, at The Priory, Warwick, and are found extremely useful at this season, when plants in pots of a similar description are not plentiful. They are very free as regards flowers, and continue to bloom throughout the summer and autumn till late in winter. There are no particular kinds grown, only a good selection of varieties, but one *Tydæa* named *alba nigra* was particularly worthy of note.

**PAVIA MACROSTACHYA.**—This *Pavia* is so beautiful and continues in flower so long as to be at the present time one of the most ornamental of flowering shrubs, the long projecting stamens issuing as they do from the pure white blossoms imparting to them such an amount of grace and elegance as to place the plant in the first rank amongst the *Pavias* or *Buckeyes*. There is a comparatively small plant of it near the temperate house at Kew, which for some weeks past has been very attractive.—H. P.

**OLEARIA HAASTI.**—This New Zealand shrub is at the present time very attractive near King William's Temple at Kew, where without any protection it has withstood the severity of the winter, and now every shoot is terminated with corymbs of white flowers, which although individually small, are produced in such profusion as to render the plant very striking. Another point in its favour is the length of time during which the flower lasts either in water or on the plant, and blossoming as it does freely in a small state, it well deserves attention.—H. P.

**Herbaceous Phloxes.**—These do very well here, but we adopt a plan which is, perhaps, not common with the view of prolonging the blooming season, which we manage to do until the frost comes and puts a stop to it. It is this: as soon as the shoots are 18 in. high we cut the tops off a portion, and as soon as those left uncut have reached to about their full height, we go over them again and cut the tops off a portion of them.

This treated they succeed each other. It is only the late blooming sorts we thus operate on, as the earliest of the late sorts are in bloom by the time the early blooming members of the *suffruticosa* section are over.—T. SMITH, *Newry*.

**White bedding plant.**—"J. C. T." asks for a good white-flowered bedding plant other than a *Pelargonium*. There is, I imagine, no better white bedding plant than *Viola Vestal*, especially for the summer months, as it does not flower early, but when in bloom continues to do so most freely till the autumn. The flowers are of medium size, and borne most profusely.—A. D.

**Climbers for porches.**—If there is a porch at "Enquirer's" door (p. 196), I would place on each side of the door a plant of the common white *Jasmine*, as he suggests, and two plants of *Clematis Jackmani*, and of the climbing *Rose*, *Félicité Perpétuelle*, or *Rose ruga*. These would form a very pleasing combination during the summer months; and the *Jasmine*, being an evergreen or nearly so, would not be unsightly in winter.—P. G.

**Flower garden shrubs.**—It occurs to me that there are many hardy trees suitable for sub-tropical gardens. A good deal is made of *Wigandias* and such like plants which require long cultivation in warm houses, and cannot be turned out before the summer is well upon us; whereas such things as *Tulip tree*, broad-leaved *Poplar*, *Pterocarya caucasica*, some of the *Acers*, and similar things, cut down annually, would make strong growth and handsome leaves, and would want no coddling whatever.—T. SMITH, *Newry*.

**Fuchsia Guiding Star.**—Among the crowd of novelties and improvements on old kinds constantly occurring we are apt to forget old friends. We have here what in my opinion is the most graceful of all the *Fuchsia* family, the pure white, of its unusually long tube and sepals beautifully recurving and hitting the tube about half way up; the lively purple of the corolla, which in a day or two changes to rich rose; the slender arching branches, medium foliage, and general all-round style of the plant. These make it the very ideal of what a *Fuchsia* should be, and yet it is very, very old.—T. SMITH, *Newry*.

**Begonia discolor Rex.**—This represents a new race of hybrid *Begonias* of French origin, exactly intermediate between *B. discolor* and *B. Rex*, having the marbled foliage of the latter and the bright upright bushy growth of the former. They are, however, as might be expected, not so straggling as *B. discolor* often is, unless grown under very favourable circumstances. The leaves, though of good size, are not so large as the *Rex* section, nor are the silvery markings as bold; nevertheless, they form exceedingly distinct and handsome specimens for the decoration of the conservatory and stove, and would doubtless do well for a considerable time in a dwelling room in mild weather. They can be propagated from leaves quite as readily as *B. Rex* and its allies, so they will doubtless soon become abundant. Although they are very distinct from other types of the genus, the varieties do not differ greatly among themselves. The flowers of those which have bloomed with me appear insignificant, smaller even than those of *discolor*. On the whole, these *Begonias* are well worth growing, and will prove very valuable for table decoration, both as pot specimens and for their leaves when cut for use in *epergnes*, amongst other foliage and flowers.—GREENWOOD PIM, *Monkstown, Co. Durham*.

**Trees uprooted by machinery.**—One of the engines of 12-horse power, belonging to a steam plough, is made use of, on a large farm in East Lothian, for clearing a wooded dell. The engine, which stands in a field at a short distance from the top of the bank, is attached by a steel wire rope to a chain fastened about half way up the stem of a tree (on the opposite side of the dell), which is pulled up by the roots and laid prostrate. When all the trees are pulled out of

the ground, almost as if they were so many little bushes, so easily is the work of destruction accomplished, the trunk of each tree is sawn across above the root, the rope and chain are again fastened to it, and in a few seconds these large trees, branches and all, are drawn across the dell and up the bank, which in this case is so steep that horse power could hardly have been applied.—C. M. O.

**Rhamnus Frangula** (the Breaking Buckthorn, Berry-bearing Alder, or (locally) Black Alder).—This wild plant is abundant here on the greensand in young plantations, growing to a height of fully 8 ft., and forming broad bushes. It is by no means an undesirable shrub to encourage for the sake of its decidedly ornamental appearance. It is now laden with berries varying in colour from bright pink to dark purple; the foliage, too, is pretty, its oval leaves being glossy and strikingly lineated. I do not remember ever seeing this *Rhamnus* so heavily and beautifully fruited. All the small wild fruited shrubs and trees seem to be carrying an extra crop this year; the *Mountain Ash* is literally weighed down with its load of bright glowing berries—a beautiful sight. This, the brightest ornament in our wild ornamental woods at this time of the year, will this season be more prolonged than usual in consequence of the scarcity of the thrush tribe. These birds of late years have cleared off the crop almost as soon as ripe, but as there are so few thrushes this year they will find abundance of food from the *Mountain Ash* alone to last them for some weeks. I think it is a peculiarity of the wild feathered tribe when they begin to feed on a certain kind of food to follow it up until finished. They don't seem to care for ringing the changes in their dietetic regimen.—G. B., *Longleat*.

## LATE NOTES AND QUESTIONS.

**Chrysanthemums.**—How are these hybridised for seed? how are they shown? and how dressed for exhibition? Would Mr. Douglas enlighten a large army of would-be exhibitors and seed-savers?—GROFLE.

**Market Flowers.**—What are the principal flowers that are grown for cutting and bunching for market? I mean hardy out-door annuals, biennials, and perennials. Are they generally bunched in separate colours or mixed? and what are the dimensions of a bunch?—W. C.

**Drying Everlastings.**—Can anyone inform me whether the flowers of *Catananche bicolor* (described as an everlasting) can be dried? and if they can, how it is to be done?—E. F. E.

**Pancratium illyricum.**—If A. B. Botley (p. 190) will turn his bulbs of this of the pots into the open ground, he will have no difficulty with them. I have a grand clump which is certainly forty years old, and flowers splendidly. It has never been disturbed. I should not think peat would suit it.—H. M. FILLCOME, *Bilton*.

**Exhibiting Ferns.**—What number of varieties of one English Fern would be allowable in competing for the prize for twelve British Ferns? For instance, Hart's tongue varieties are at this season in better condition than most other Ferns. Would six Hart's-tongues, distinct varieties, be allowable?—A JERSEY SUBSCRIBER.

**Osborn's Nursery, Sunbury.**—Allow me to correct a slight error in the last number of THE GARDEN (p. 195), under the heading "Variation." My nursery at Sunbury is there described as new, and no doubt by many it is thought so, but this is a mistake. My grandfather commenced business there, I believe, with the late Mr. Willmer some years before he went into partnership with Mr. Whitley, of the Fulham Nursery. This must be about sixty years since. So it is not a new nursery, but well established, and, I think you will agree with me, deserving of the title I intend in future to give it, viz., The "Old" Nursery, Sunbury-on-Thames.—ROBERT A. OSBORN.

**Boilers.**—Will some one give me the benefit of their experience as to which is the best boiler? I have a large tubular that must come out this autumn, and I am anxious to replace it with the most economical and best that I can get. I think tubulars are very liable to get out of order, and therefore are not economical.—K. W.

**The Edelweiss.**—In the statement as to the height of this plant (p. 182), for feet read inches.

**Melon.**—W. B.—We cannot see that the Melon is diseased; the two injured places are no doubt the result of wounds, produced by a blow, pressure, or perhaps the attack of a wasp or wire-worm. At the present time the injured places contain several large white maggots; an *Oidium* (fungus) is also present; the fruit appears to be healthy, with the exception of the decaying spots. What insect or accident commenced the injuries we cannot say.



*Nymphaea flava*.—Will "J. H. J." Goddard's Green, kindly favour us with his proper address?

**Names of Plants.**—*J. Wood*.—*Saxifraga cordifolia*, *Campanula urticifolia alba fl.-pl.*, *Gnaphalium arvenarium*, *Anagallis tenella*.—*Miss M.*—*Gentiana asepiladea*.—*G. G.*—*Francia appendiculata*.—*G. S. S.*—*The Henbane* (*Hyoscyamus niger*).—*R. G.*—*Saxifraga cespitosa* var.; 2, *Erica codonodes*; 3, some *Euphorbia*; 4, *Pyrethrum roseum* var.; 5, *Ranunculus bulbosus fl.-pl.*; 6, one of the tall *Phloxes*.—*T. C. M.*—Some floral sort unknown in Covent Garden Market. It is impossible to name such varieties, especially from a single specimen half grown.

## SOCIETIES.

### MANCHESTER INTERNATIONAL EXHIBITION.

AUGUST 24-29.

It may be fairly said that since the International Show, held in London in 1866, nothing approaching the show opened at Manchester on Wednesday last by Lord Derby has been seen in this country, either as regards extent, variety, or the high quality of the exhibits. The show fully bore out the most sanguine anticipations of its promoters, and not a few were surprised to see the grand display of fruit, plants, and vegetables gathered from all parts of the country. To call it international is not, perhaps, quite correct, as the absence of foreign exhibitors was particularly conspicuous, only one from France entering the lists, though one section of the schedule and several other classes were set apart for them. On the whole, the show was a thoroughly representative one, every class being numerously supported—in some instances by a hundred or more competitors.

The main feature of the show was the fruit, than which a finer exhibition has not been seen by the oldest among us. Plants were also fine, particularly the groups, and vegetables were shown in abundance, and of such uniformly high quality that scarcely a bad exhibit was observable. The exhibition occupied principally two large tents besides the permanent exhibition building. The fruit and vegetables occupied one tent entirely, and another smaller one was devoted to Potatoes and other vegetables. The finest display was in the large tent occupied by plants. Here, at one end, on a sloping bank, the General Horticultural Company had a very fine collection, principally consisting of Crotons, Dracenas, Palms, Ferns, and Pitcher plants tastefully and effectively arranged, and a remarkable feature was that there were no flowering plants among them. On either side of the central pathway were arranged the groups in competition for the prizes offered for effective arrangement of plants on a given space. Collectively, these were very fine, particularly those to which the first prizes were awarded, the taste exhibited in their arrangement being of a high order. By the sides of the pathway were noble tree Ferns which broke up in a charming manner the otherwise monotonous aspect of the groups. Terminating this tent was a superb group of pot Roses, chiefly Tea varieties from the Cheshunt nurseries—a deservedly much admired feature. Groups of hardy Ferns, gatherings of hardy flowers, Coleuses and Bouvardias were the other chief occupants of this tent, in which the only defective point was a huge conical, incongruous mass of fruit, flowers, and plants placed near the entrance.

The permanent glass building was devoted chiefly to the competing classes among tender plants, with the exception of two fine groups from the Chelsea and Victoria Nurseries, London.

The miscellaneous classes were particularly noteworthy for their extent and the choice subjects which they contained. The central stage of the large exhibition building was occupied by groups from Messrs. Veitch and Williams. Both showed fine collections of Pitcher plants,

as well as Orchids, and fine foliaged and flowering plants, the whole forming an attractive display. The competing classes were arranged round the sides of the building, and the brightly coloured fine foliaged plants were tastefully interspersed with Ferns and Palms, forming on the whole a most effective display.

The cut flowers, including the show of the National Rose Society and the northern section of the National Carnation and Picotee Society, were shown in a tent adjoining that devoted to fruit, as were also the table decorations, bouquets, and several classes in the fruit section.

The cottagers, who, by-the-by, showed some surprising productions, had two tents to themselves, and they filled them to overflowing with such exhibits as surprised even professional gardeners by their high quality. Round the outside of the tents were groups of hardy trees and shrubs shown wonderfully fine and in large numbers.

The implement show was held in an adjoining field, and, like other sections of the exhibition, well represented.

### Fruit.

This, as has been already remarked, was the chief feature of the exhibition, so fine was it in every respect; therefore we will begin with

**Collections** of it consisting of fifteen kinds. These were shown by six exhibitors. Mr. Coleman was first with a wonderfully fine collection; his Grapes were Black Hamburg, Gros Maroc, and Muscat of Alexandria; his Bellegarde Peaches were grand fruits, as was also his dish of Chancellor; Eastnor Castle and Blenheim Orange Melons were also shown in this collection together with Pitmaston Duchess Pears, two fine Queen Pine-apples, and a Smooth Cayenne, Figs, Cherries, and other fruits. In the next best collection from Mr. McIndoe, were fine Barbarossa, Trebbiano and Black Hamburg Grapes, Stirling Castle, and Black Hamburg, and Princess of Wales Peaches. Some excellent Madresfield Court Grapes and Barrington and Violette Hative Peaches were in the third collection.

In the class of twelve dishes there were seven exhibitors. In the first prize collection there were fine black Hamburg Grapes, Noblesse Peaches, Pine-apples, excellent Negro Largo Figs, and Highcross Hybrid Melon. These were from Mr. Austen, Ashton Court, Bristol. In the other collection the most noteworthy were: Bellegarde Peaches, Black Alicante and Gros Maroc Grapes, and a wonderfully fine smooth Cayenne Pine-apple from Mr. Miles, Wycombe Abbey. Six collections of nine dishes were shown, but there were no remarkably fine productions among them. The class for six dishes was a finer one, there being six exhibitors. In the first prize lot, from Mr. D. Wilson, were fine Alicante Grapes, Dymond Peaches, Pitmaston Orange Nectarines, and William Tillery Melon. In this class Mr. Austen showed a fine smooth Cayenne Pine, and there were also exceptionally large Peaches.

**Hardy Fruits.**—Of these eight collections of twelve kinds were shown. The best came from Mr. Haycock, of Maidstone, who had fine Dr. Hogg Peaches, Bon Chretien Pears, Orange Nectarines, Golden Gage and Czar Plums, Quarrenden Apples, Gooseberries, Currants, and Filberts. The next best collection, from Mr. McIndoe, was likewise fine, as was also the third.

**Grapes.**—These by themselves formed quite an exhibition so numerous and fine were they in every class. In that of ten bunches, there were eight collections. Mr. Hunter, of Lambton Castle, won the first prize with a grand collection, all large, both in bunch and berry and perfect as regards finish. The sorts were Gros Colmar, Calabrian Raisin, Alicante, Barbarossa, Aramon, Muscat of Alexandria, Lady Downes, Trebbiano, and Black Hamburg. Two others, from Hutton Hall and Brayton Hall, were also very fine, especially Black Alicante, Mrs. Pince, and Barbarossa. Collections of six kinds were shown by thirteen exhibitors; the best, from Shipley Hall, contained

fine examples of Gros Maroc, Alicante, Madresfield Court, and Muscat Hamburg. In the other collections were superb bunches of Venu's Seedling, Mrs. Pince, Black Hamburg, Madresfield Court; these came from Mr. Austen, and Duke of Buccleuch and Lady Downes from Brayton Hall. Twenty-three showed two bunches of Black Hamburg, among which were some fine examples, particularly those from Callander Park, Falkirk. Twenty exhibitors showed two bunches of Muscat of Alexandria, but many of the bunches were unripe; Muscat Hamburgs were good, as were also Madresfield Court, of which there were a dozen exhibitors of two bunches. Black Alicantes were wonderfully fine, large in bunch and highly finished. Gros Colmar and Lady Downes were likewise well represented. That fine Grape, the Duke of Buccleuch, was shown by one or two exhibitors, but the Golden Champions were poor. Two enormous bunches of Trebbiano, weighing 16 lbs. 14 oz. and 28 lbs., were shown in the non-competing class by Mr. Roberts, Charleville Forest, Tullamore, and the same exhibitor also showed the heaviest of black Grapes, which was Gros Guillaume. Barbarossa and Alicante were the other sorts shown in this class. Trebbiano and Syrian were the white sorts shown for the heaviest bunches.

**Pine-apples.**—Of single fruits of the Queen variety, there were six exhibitors, all of whom showed fine specimens, and there were the same number of smooth Cayennes. Two fruits of any variety were shown by five exhibitors, Mr. D. Wilson showing a pair of Smooth Cayennes, weighing 6 lbs. each. Mr. McIndoe was the only exhibitor of six fruits.

**Peaches** were very numerous shown. The best three dishes came from Lambton Castle, and were of exceptional merit; they consisted of Royal George, Hales' Early, and Early Mignonne. In single dishes of twelve Mr. Coleman showed a very fine dish of Bellegarde for the first prize. Of dishes of six fruits the best came from Cranbourne Court, Windsor, and consisted of the Princess of Wales.

**Nectarines** were, on the whole, very fine, there being twenty dishes of twelve shown. The best came from Mr. Coleman, who had fine examples of Lord Napier. Violette Hative and Pine-apple were the other winning sorts. The best six fruits came from Mr. Gilbert, of Burghley, and consisted of large and highly coloured examples of Victoria and Princess of Wales, and Pitmaston Orange were second and third. Fifty-two other dishes were shown. A collection of three dishes were shown by five exhibitors, the best being by Mr. Hunter, of Lambton Castle, who had Violette Hative, Elruge, and Lord Napier.

**Apricots.**—Twenty-three single dishes of six fruits were shown, but there were few very fine examples; those from Mr. Gilbert, who was first, were large and well coloured. The four collections of three dishes were very inferior.

**Melons.**—These were of course very numerous. Pairs of scarlet-fleshed kinds were shown by twelve exhibitors; the best by Mr. Pratt, of Hawkstone. These were small, round, and well netted, and of exquisite flavour. The variety was not named. Mr. Coleman was second with Blenheim Orange and Read's Scarlet, and the same sort with Royal Ascot was third. There were twenty pairs of green-fleshed. Mr. Miles showed for the first prize Wycombe Hybrid and Golden Gem; Dickson's Exquisite, and Eastnor Castle from Mr. Coleman were second; and Golden Gem and Shepherd's Perfection, from Messrs. Cheal, Crawley, were third. Above forty single fruits of green-fleshed sorts were shown, and thirty of red-fleshed. The winning sorts among the former were Hero of Lockinge and Eastnor Castle. Of red, Bristol Scarlet, and Bloxholm Hall, and an unnamed sort were the prize-takers.

**Plums** were numerous and of high quality. The best collection of six from Pershore included Victoria, Diamond, Denbigh, Jefferson, Belle de Louvain, and the new sorts were first in the other collections. Eleven collections were shown, and about fourteen single dishes,



**Pears** were not of high quality, it being too early for them; they were, however, very numerous, there being about a score of collections of twelve kinds. The best came from Mr. Haycock, Maidstone, and some very fine fruits were shown from Heckfield. Two dozen dishes of Jargonelle were shown. The six heaviest Pears were Pitmaston Duchess from Hutton Hall.

**Apples** were numerous, particularly baking sorts, of which there were some fifty collections of twelve kinds. Dessert sorts, though not so numerous, were shown well, Worcester Pearmain, Quarrenden, Duchess of Oldenburg, Red Astrachan and Early Strawberry being amongst the most prominent sorts.

**Vegetables**, consisting of 20 kinds, were fine, and Mr. Miles, as usual, stood in the front rank. In collections of 10 kinds there were 20 competitors. Potatoes were as numerous as at the International Potato Show, the classes being all represented by large numbers of exhibitors.

#### Plants.

**Stove and Greenhouse Plants.**—Of 20 miscellaneous plants, 12 being fine foliage and 8 in flower, there were 4 exhibitors. In the best group, from Messrs. Cole and Son, were two fine plants of *Crotons*, *Gleichenia Mendelli*, two superbly-flowered *Dipladenias*, *Ixora Fraseri*, and *coccinea*, and *Erica Eweriana*, *Turnbulli*, and *Marnockiana*, the whole making an imposing group, which was backed up by large specimens of *Palms* and *Cycads*. In the other collections were superb plants of *Lapageria rosea* and *alba* trained in a balloon trellis, *Eucharis amazonica*, several fine *Heaths*, *Anthurium Scherzerianum*, *Alocasia Lowi*, *Gleichenias*, and other *Ferns*, *Palms*, and *Cycads*.

**Orchids.**—These, owing to the season, were not remarkable either as regards numbers or high quality. Three amateurs showed collections of eight; *Saccolabium Blumei majus* with seven spikes, *Phalaenopsis amabilis*, with a branching spike, were the only plants worth noting; the others were, for the most part, made-up plants. The nurserymen's classes were better, Mr. Williams having a fine collection of eight plants, among which were *Saccolabium*, *Blumei Russellianum* with six spikes; a grand plant of *Cattleya crispata* with 7 spikes; also of *Dendrobium Pierardi* and *Lælia elegans Turneri*, the whole, considering the time of year, being excellent. In the other collection of eight was a fine pan of *Disa grandiflora* with about fifteen flowers.

**Orotons, Dracænas, Coleuses, and Pitcher plants** were all shown in excellent condition, and there were some good collections of hardy *Ferns*.

**New Plants.**—These were not nearly so numerous as might have been expected, considering the valuable prizes offered for them. Three collections of twelve plants were shown, but they were not remarkable. Mr. Williams showed the best six new plants in flower not in commerce. First class certificates were awarded to the following: To Messrs. Veitch & Sons, Chelsea, for *Alocasia Thibautiana*, *Heliconia aureo-striata*, *Asparagus plumosus nanus*, *Yucca filamentosa aurea elegantissima*, *Lastrea Richardsi multifida*, *Davallia elegans polydactyla*, *Gymnogramma schizophyllum*, *Lilium speciosum gloriosoides*, *Croton Hawkeri*, *Rhododendron* Duchess of Connaught, *Phalaenopsis violacea*, *Cypripedium porphyrophyllum*, *albo-purpureum*, and *selligerum majus*, *Pachystoma Thomsonianum*, *Lælia Sedeni*, *Nepenthes bicalcarata* and *Morganiana*, *Ixora aestri*, *Sarracenia formosa* and *melanorrhoda*, *Lilium auratum platyphyllum*. To Mr. Williams, Victoria Nurseries, Upper Holloway, came *Begonia Williamsi*, *Asplenium horridum*, *Heliconia nigra punctata*, *Croton Bruce Findlay*, *Aralia Chabrieri*, *Dracæna Lindenii*, *Aralia aspectabilis*, *Alocasia Thibautiana*, *Delabechia rupestris*, *Asplenium Novæ-Caledoniæ*, and *Nepenthes bicalcarata*.

**Roses.**—Among subjects deserving special notice was a display of Tea Roses in pots from Messrs. Paul and Sons, Cheshunt. The peculiarity

connected with them is that they have been in flower most of the summer, and a few of them had been exhibited five times since last spring, and now towards the end of August they are again as profusely bloomed as if this were the first time of flowering this season. They have been simply kept under glass, partially dried off, and the flowers picked or cut off, removing a little of the flowering shoots with the faded flowers kept a little close for a time with the result of fresh breaks, and more and better flowers than before. The Messrs. Paul showed a group of perhaps from thirty to fifty plants in the large tent, and amid all the beautiful things grouped there nothing was more attractive, nor excited greater interest. Probably all the Teas would yield to this particular mode of culture, and be made to flower continuously throughout the year, and thus once more earn the title of monthly Roses. Among those grown by the Messrs. Paul for this purpose were *Alba rosea*, *Anna Olivier*, *Catherine Mermet*, *Comtesse de Nadaillac*, *Devoniensis*, *Duchess of Edinburgh*, *Innocenti Pirola*, *Madame Angele Jacquier*, *Madame Charles*, *Madame Lambard*, *Madame Margottin*, *Madame Willermoz*, *Mme. Van Houtte*, *Niphetos*, *Perle des Jardins*, *Perfection de Monplaisir*, *President*, *Rubens*, *Souvenir d'Elise Vardon*, and *Souvenir d'un Ami*. These Roses seem to solve hitherto one of the most difficult problems in the furnishing the conservatory with fragrance as well as beauty throughout the autumnal months.

**Fruiterers' Class.**—This, for the largest and most meritorious miscellaneous collection of fruits, was represented by four exhibitors, who showed some very fine collections, particularly the best from Mr. Mason, Manchester, who had six kinds of Grapes, thirty dishes of Plums, ten Pines, some twenty of Peaches and Nectarines, and a proportionately large number of other fruits, all of excellent quality, and arranged in a very tasteful manner. The class for ten kinds of fruits was only represented by one collection; and that for a collection of hardy fruits likewise had but one representative, but both were particularly fine.

The General Horticultural Company's prizes for a collection of twelve kinds of Grapes were competed for by two exhibitors, Mr. Coleman and Mr. Goodacre, who were placed in the order named. Both had fine collections. There was a good competition for the prizes offered by the same company for black and white Grapes, the quality of which was on the whole excellent. The subjects shown in competition for the other special prizes were likewise very creditable to those who exhibited them.

**Veitch Memorial Prizes.**—These were competed for on this occasion. The finest specimen stove plant was a splendid *Dipladenia amabilis* from Mr. Tudgey, though a grand *Eucharis amazonica* was equally remarkable for its large size and high quality. The best greenhouse plant was also shown by Mr. Tudgey. It was an enormous plant of *Erica nana superba*. The finest Orchid was a well grown plant with two spikes of flowers of *Saccolabium Blumei majus*, shown by Mr. Roberts, Gunnersbury Park, Acton. The prize for fifty hardy plants was won by a good collection from Mr. Brockbank, Didsbury, and that for hardy Ferns by Mr. Tyldesley, Worsley, with a remarkably rich collection. The Pine-apples and Grapes shown for the other prizes were of high quality and well merited the distinction they won.

**Bouquets.**—There were some 120 bouquets exhibited in the various classes, but they all had the appearance of being arranged by one person, so monotonous were they in general appearance.

**Dinner-table Decorations.**—There were five tables furnished to accommodate twelve persons, the best, arranged by Mr. Cypher, Cheltenham, being extremely pretty and graceful, the subjects used being well adapted to the purpose. In the centre was a *Cocos Weddelliana* with a vase prettily arranged with *Lycopods*, *Water Lilies*, *Tacsonias*, *Orchids*, *Ferns*, and

similar subjects, while the other vase was arranged with brighter coloured flowers intermixed with *Grasses*, *Maiden-hairs*, &c.

#### LIST OF AWARDS.

##### Section 1.—Fruits.

Collection of fifteen kinds of fruit.—1, Mr. W. Coleman, gardener to Earl Somers, Eastnor Castle, Herefordshire; 2, Mr. J. McIndoe, gardener to J. W. Pease, Esq., M.P., Hutton Hall, Guisborough, Yorkshire; 3, Mr. J. Roberts, gardener to Baroness L. de Rothschild, Gunnersbury Park, Acton.

Collection of twelve kinds of fruit.—1, Mr. John Austin, gardener to Sir Greville Smyth, Bart., Ashton Court, Bristol; 2, Mr. Geo. T. Miles, gardener to Rt. Hon. Earl of Carington, Wycombe Abbey, Bucks; 3, Mr. Arthur Baker, gardener to Sir Henry Allsopp, Bart., Hindlip Hall, Worcester.

Collection of nine kinds of fruit.—1, Mr. John Edmunds, gardener to His Grace the Duke of St. Albans, Besswood Lodge, Notts; 2, Mr. H. J. Clayton, gardener to John Fielden, Esq., Grimston Park, Tadcaster; 3, Mr. W. Wallis, gardener to Sir H. M. Thompson, Bart., Kirky Hall, York.

Collection of six kinds of fruit.—1, Mr. D. Wilson, gardener to Rt. Hon. Earl Fortescue, Castle Hill, South Moulton, Devon; 2, Mr. John Austin; 3, Mr. T. Blair, gardener to Admiral Sir G. N. B. Middleton, Bart., Shrubland Park, Suffolk.

Collection of twelve kinds of hardy fruit.—1, Mr. Haycock; 2, Mr. J. McIndoe; 3, Mr. W. Faye, gardener to James Derham, Esq., Sneyd Park, Bristol.

Ten varieties of Grapes.—1, Mr. J. Hunter, gardener to Rt. Hon. Earl of Durham, Lambton Castle, Durham; 2, Mr. J. McIndoe; 3, Mr. J. Hammond, gardener to Sir Wilfred Lawson, Bart., M.P., Brayton Hall, Carlisle.

Six varieties of Grapes, one bunch of each.—1, Mr. W. Elphinstone, gardener to E. M. Mundy, Esq., Shipley Hall; 2, Mr. John Austin; 3, Mr. J. Hammond.

Two bunches of Black Hamburg Grapes.—1, Mr. T. Boyd, gardener to W. Forbes, Esq., Callander Park, Falkirk, N.B.; 2, T. S. Paterson, Esq., Kirklands Rock Ferry; 3, Mr. W. Coleman.

Two bunches of Muscat of Alexandria Grapes.—1, Mr. J. Austin; 2, Mr. J. Hudson, gardener to Henry J. Atkinson, Esq., Gunnersbury House, Acton; 3, G. Middleton, Esq., Rainford Hall, St. Helens.

Two bunches of Muscat Hamburg Grapes.—1, Mr. Coleman; 2, Mr. W. Wallis; 3, Mr. G. T. Miles.

Two bunches Madresfield Court Grapes.—1, Mr. J. H. Goodacre, gardener to Earl of Harrington, Elvaston Castle; 2, Mr. John Roberts; 3, Mr. A. Baker.

Two bunches Black Alicante Grapes.—1, Mr. W. Elphinstone; 2, Mr. D. Forbes, gardener to J. Harris, Esq., Derwent Lodge, Cockermouth; 3, R. Elphinstone, gardener to John Heywood, Esq., Stretford.

Two bunches of Gros Colmar Grapes.—1, Mr. W. Elphinstone; 2, Mr. D. Forbes; 3, Mr. J. McIndoe.

Two bunches of Lady Downes Grapes.—1, Mr. W. H. Bannister, gardener to H. St. Vincent Ames, Esq., Cole House, Westbury-on-Trym; 2, Mr. W. Elphinstone; 3, Mr. J. Hunter.

Two bunches of Duke of Buccleuch Grapes.—1, Mr. J. McIndoe; 2, Mr. J. Morton, gardener to J. Fildes, Esq., Chorlton-cum-Hardy; 3, Mr. J. Farquharson, Acton, Wrexham.

Two bunches of Golden Champion Grapes.—1, Mr. McIndoe; 2, Mr. J. Roberts; 3, Mr. J. Morton.

Six Pine-apples.—1, Mr. J. McIndoe.

Two Pine-apples.—1, Mr. D. Wilson, gardener to Earl Fortescue, Castle Hill; 2, Mr. D. Murray, gardener to the Marquis of Ailsa, Culzean Castle,



Maybole, N.B.; 3, Mr. F. Faulkner, gardener to F. R. Leyland, Woolton Hall, Liverpool.

One Queen Pine-apple.—1, Mr. S. Whitfield, gardener to F. T. Cross, Esq., Beechwood, Aigburth; 2, Mr. F. Faulkner; 3, Mr. J. Austin.

One Smooth Cayenne Pine-apple.—1, Mr. Jas. Bicks, gardener to Sir Geo. Chetwode, Bart., Oakley Park, Market Drayton; 2, Mr. Faulkner; 3, Mr. R. Hutton, gardener to Wm. Bellhouse, Esq., Southport.

One Pine-apple, any kind.—1, Mr. J. Muir, gardener to C. R. M. Talbot, Esq., M.P., Margam Park; 2, Mr. J. Ricks.

Three dishes of Peaches.—1, Mr. J. Hunter; 2, Mr. W. Coleman; 3, Mr. R. Milne, gardener to Lord Delamere, Vale Royal, Northwich.

Twelve Peaches.—1, Mr. W. Coleman; 2, Mr. C. Ross, gardener to C. Eyre, Esq., Welford Park, Newbury; 3, Mr. J. Hunter.

Six Peaches.—1, Mr. E. Bland, gardener to Mrs. G. Smith, Cranbourne Court, Windsor; 2, Mr. D. Abbott, gardener to C. H. Frith, Esq., Sheffield; 3, Mr. W. McKelvie, gardener to the Dowager Duchess of Roxburgh.

Twelve Nectarines.—1, Mr. W. Coleman; 2, Mr. J. Hunter; 3, Mr. J. Malcolm, gardener to Marquis of Cholmondeley, Nantwich.

Six Nectarines.—1, Mr. R. Gilbert, gardener to Marquis of Exeter, Burghley, Stamford; 2, Mr. G. Masters, gardener to Col. C. Legh, High Legh Hall; 3, Mr. W. G. Gaiger, gardener to S. T. Whitehead, Esq., Bakewell.

Three dishes of Nectarines.—1, Mr. J. Hunter; 2, Mr. W. Coleman; 3, Mr. R. Milne.

Twelve Apricots.—1, Mr. R. Gilbert; 2, Mr. W. Wallis; 3, Mr. J. Ridsdale, gardener to Marquis of Ripon, Nocton Hall, Lincoln.

Six Apricots.—1, Mr. G. Malcolm, gardener to Jas. Tomkinson, Esq., Tarporley; 2, Mr. Jacob; 3, Mr. James Ricks.

Three dishes of Apricots.—1, Mr. Aitken, gardener to A. H. T. Newcomen, Esq., Redcar; 2, Mr. W. Wallis; 3, Mr. C. Raffil, gardener to Lord Tredegar, Tredegar Park.

Two Melons, any green-fleshed kind.—1, G. J. Miles, gardener to Earl of Carington, Wycombe Abbey; 2, Mr. W. Coleman; 3, Messrs. J. Cheal and Sons, Crawley, Sussex.

Two Melons, any scarlet-fleshed kind.—1, Mr. W. Pratt, gardener to Lord Hill, Hawkstone Park; 2, Mr. W. Coleman; 3, Mr. T. Blair, gardener to Admiral Sir G. N. B. Middleton, Bart., Shrubland Park.

One Melon, any green-fleshed kind.—1, Mr. H. W. Cordle, gardener to W. Boulton, Esq., Ulverston; 2, Mr. G. T. Miles; 3, Mr. W. Coleman.

One Melon, any scarlet-fleshed kind.—1, Mr. T. Bailey, gardener to T. T. Drake, Esq., Sharde-loes, Bucks; 2, Mr. O. Goldsmith, gardener to Sir W. Farquhar, Bart., Polesden Lacey, Dorking; 3, Mr. G. Malcolm, gardener to James Tomkinson, Esq., Tarporley.

Twelve Figs.—1, W. Allan, gardener to Lord Suffield, Gunton Park; 2, Mr. A. Barker; 3, Mr. W. Wallis.

Twenty Plums, 5 kinds.—1, Mr. W. J. Gibbon, Scaford Grange, Pershore; 2, Mr. J. Hunter; 3, Messrs. E. Smith & Sons, Cheltenham.

Twelve Plums, of any kind.—1, Mr. W. P. Upjohn, gardener to Earl of Ellesmere, Worsley Hall; 2, Mr. A. J. Grant, gardener to Mrs. B. Glegg, Chelford; 3, Mr. W. J. Gibbon, Pershore.

Collection of Pears, twelve kinds, two of each, ripe or unripe.—1, Mr. Haycock, gardener to R. Leigh, Esq., Maidstone; 2, Mr. W. Wildsmith, gardener to Viscount Eversley, Heckfield; 3, Mr. J. Austin.

Twelve Jargonelle Pears, fit for table.—1, Messrs. Smith & Sons; 2, F. B. Frank, Esq., Campsall Hall, Doncaster; 3, Mr. Haycock, gardener to R. Leigh, Esq., Maidstone.

Six Pears, two kinds, three of each, exclusive of Jargonelle.—1, Mr. J. McIndoe; 2, Messrs. E. Smith and Sons; 3, Mr. J. Douglas, gardener to F. Whitbourne, Esq., Loxford Hall, Essex.

Six heaviest Pears.—1, Mr. J. McIndoe, gardener to J. W. Pease, Esq., M.P., Hutton Hall; 2, Mr. W. Crump, gardener to Duke of Marlborough, Blenheim Palace; 3, Mr. J. Hanagan, gardener to R. C. Naylor, Esq., Hooton Hall.

Collection of baking Apples, twelve kinds, two of each.—1, Mr. Haycock, gardener to R. Leigh, Esq., Maidstone; 2, Mr. Charles Ross, gardener to C. Eyre, Esq., Welford Park; 3, Mr. G. T. Miles, gardener to Earl of Carrington, Wycombe Abbey.

Six baking Apples.—1, Lewis A. Killick, Esq., Mount Pleasant, Maidstone; 2, Mr. Haycock, gardener to R. Leigh, Esq., Maidstone; 3, Mr. John Barnes, Hucclecote.

Collection of dessert Apples, twelve kinds, two of each, ripe or unripe.—1, Mr. Haycock, gardener to R. Leigh, Esq., Maidstone; 2, Mr. John Roberts; 3, Mr. John Roberts; 3, Mr. A. Killick, Esq., Maidstone.

6 dessert Apples, fit for table.—1, Mr. J. O. Cooper, Calcot Gardens, Berks; 2, Mr. J. Roberts, gardener to Baroness L. de Rothschild, Acton; 3, Mr. W. Faye, gardener to J. Derham, Esq., Sneyd Park.

Three dishes Red Currants.—1, Mr. J. Austin, gardener to Sir G. Smyth, Bart., Bristol; 2, Mr. W. Wallis, gardener to Sir H. M. Thompson, Bart., Kirby Hall; 3, Mr. J. Edmunds, gardener to Duke of St. Albans, Bestwood Lodge.

Three dishes of White Currants.—1, Mr. W. Pratt, gardener to Lord Hill; 2, Mr. J. McIntyre, gardener to Mrs. G. Pease, Darlington; 3, Mr. J. Edmunds, gardener to Duke of St. Albans, Bestwood Park.

Two Vines, in pots, and in fruit.—1, Mr. G. Park, gardener to R. A. Ffarington, Esq., Mariebonne, Wigan; 2, Mr. W. McGaw, gardener to F. J. Sumner, Esq., Hayfield; 3, Mr. Geo. Smith, gardener to John Rylands, Esq., Longford Hall, Stretford.

Collection of tropical fruits, not included in the above.—1, Mr. W. Pratt, gardener to Lord Hill, Hawkstone.

## Section Two.—Open to Fruiterers.

For the largest and most meritorious miscellaneous collection of fruits, including all kinds.—1, Mr. James Mason, fruiterer, Manchester; 2, Mr. William Bradshaw, Market Hall, Bolton.

Collection of ten kinds of fruits.—1, Mr. F. Stevenson, Altrincham.

For the best collection of hardy fruits, ripe or unripe.—1, Mr. F. Stevenson; 2, Mr. John Barnes, Hucclecote.

## Section four.—For Horticultural Societies, in any part of the world, who may exhibit either Fruits or Vegetables from their respective districts.

Collection of fruits.—1, Bristol Chrysanthemum and Spring Show Society.

Collection of vegetables.—1, Bristol Chrysanthemum and Spring Show Society.

## Section 5.—Vegetables.

Twenty varieties of vegetables.—1, Mr. G. T. Miles; 2, Mr. J. Muir; 3, Mr. John, Turth, Tewkesbury Road, Cheltenham.

Ten varieties of vegetables.—1, Mr. John Snowdon, Thirsk; 2, Earl of Cork; 3, Mr. W. Crump.

Twenty-four varieties of Potatoes.—1, Mr. James Willan, gardener to Marquis of Donegal, Hampstead Park; 2, Mr. D. Lumsden, gardener to Lady M. Hamilton, Bloxholm Hall; 3, Mr. W. Kerr, Dargavel, Dumfries.

Eighteen varieties of Potatoes.—1, Mr. J. Miller; 2, Peter M'Kinlay, Esq., Penge; 3, Mr. W. Wildsmith.

Twelve varieties of Potatoes.—1, Mr. R. Gilbert; 2, Mr. W. Wildsmith; 3, Mr. C. Ross.

Twelve Onions, spring sown.—1, Mr. Jno. Walker, 7, High Street, Thame; 2, Mr. G. T. Miles; 3, Mr. Gilbert.

Twelve Onions, Tripoli.—1, Mr. Robert Lloyd, Woking, Surrey; 2, Mr. John Ridsdale, gardener to Marquis of Ripon, Nocton Hall, Lincoln; 3, Mr. James Smith, Cheltenham.

Twelve Red Onions.—1, Mr. Jas. Royle, Swintop; 2, Mr. Hy. Marriott, Esq., Skirbeck, Boston; 3, Mr. R. Fitton, Ashton-under-Lyne.

Twelve White Onions.—1, Mr. Jno. Walker, 7, High Street, Thame; 2, Mr. R. Fitton, Ashton-under-Lyne; 3, Mr. G. Bolas, gardener to H. C. Pole-Gell, Esq., Wirksworth.

Three Vegetable Marrows.—1, Mr. Geo. Jacob, Headington, Oxon; 2, Mr. D. Abbott; 3, Mr. Isaac Dean, Altrincham.

Four Cucumbers.—1, Mr. A. Fallows, Stretford; 2, Mr. S. Vickers, gardener to Jas. Mason, Esq., Oak Villa, Ashton-on-Mersey; 3, Mr. Samuel Barrett, Barton Road, Stretford.

Three heads of Celery, Red.—1, Mr. G. C. Jarran, Loughborough; 2, Messrs. J. Biddles & Co.; 3, Capt. Turner.

Three heads of Celery, White.—1, Mr. G. C. Jarran; 2, Mr. John Wilding, Walton-le-Dale; 3, Messrs. J. Biddles & Co.

Six varieties of Gourds.—1, Messrs. J. Biddles & Co.; 2, Mr. J. McIntyre; 3, Mr. J. Casson, gardener to E. Goodall, Esq., Altrincham.

Three Cauliflowers.—1, Mr. Issac Harrop, Timperley; 2, Mr. John Wilding; 3, Mr. T. Taylor, Preston.

Three early White Cabbages.—1, Mr. G. Summers, gardener to Earl of Scarborough, Sandbeck Park; 2, Mr. C. Sherwin, Altrincham; 3, Mr. J. Wilding.

Three Red Cabbages.—1, Mr. J. Wilding; 2, Mr. O. Arbrell, gardener to A. J. Shinner, Esq., Cheltenham; 3, Mr. G. Wilkes, gardener to Mrs. Tambaci, Cheadle.

Three Savoy Cabbages.—1, Mr. J. Wilding; 2, Mr. R. Elphinstone; 3, Mr. D. Wilson, gardener to R. N. Philips, Esq., M.P., The Park, Manchester.

Six early White Turnips.—1, Mr. G. Bolas, gardener to H. C. Pole-Gell, Esq., Wirksworth; 2, Mr. H. W. Cordle, gardener to W. Boulton, Esq., Ulverston; 3, Messrs. J. Biddles & Co.

Six early Yellow Turnips.—1, Mr. Dobbie, Rothesay; 2, Mr. D. Wilson; 3, Mr. J. Caunce, Garstang.

Twelve Altrincham Carrots.—1, Mr. J. Caunce, Garstang; 2, Mr. John Ridsdale; 3, Mr. J. Casson, gardener to E. Goodall, Esq., Altrincham.

Twelve early French Horn Carrots.—1, Mr. James Smith, Cheltenham; 2, Mr. G. Bloxham, gardener to Sir P. Duncombe, Bart., Brickhill Manor; 3, Mr. C. Foster, gardener to H. Greenham, Esq., Metheringham Heath.

Twenty-four pods of Peas of any one kind.—1, Mr. J. McIntyre; 2, Mr. Robert Beale, Thurstby; 3, Mr. E. Burton, gardener to A. Harris, Esq., Kirkby Lonsdale.

Twenty-four pods of French Beans.—1, Mr. J. Miller; 2, Mr. D. Lumsden; 3, Mr. J. McIntyre, gardener to Mrs. C. Pease, Darlington.

Twenty-four pods of Scarlet Runners.—1, Mr. T. Faggin, gardener to G. Wilson, Esq., Sheffield; 2, W. Wallis; 3, Mr. J. Woolman, gardener to Col. Blundell, Crosby Hall.

Twenty-four pods of Broad Beans.—1, Mr. James Dickson, gardener to John Jardin, Esq., Langholm, N.B.; 2, Mr. G. Coulson, gardener to H. Schill, Esq., Didsbury; 3, Mr. E. H. Bradley, Sunderland.

Twelve Parsnips.—Mr. C. Smith, Cheltenham; 2, Mr. G. Bloxholm, gardener to Sir P. Duncombe, Bart., Brickhill Manor; 3, Mr. W. Wildsmith.

Six Beetroots.—1, Mr. W. Wildsmith; 2, Mr. T. Faggin, gardener to G. Wilson, Esq., Sheffield; 3, Mr. J. Miller.

Six Leeks.—1, Mr. Hugh Sutherland, Thornliebank, near Glasgow; 2, Lord Carrington; 3, Messrs. J. Biddles & Co.

Best Dish of Mushrooms.—1, Mr. James Smith; 2, Mr. G. Malcolm, gardener to James Tomkinson, Esq., Tarporley; 3, Mr. J. Morton, gardener to James Fildes, Esq., Chorlton-cum-Hardy.

Three Cos Lettuce.—1, Mr. J. Caunce, Garstang; 2, Sir Philip Duncan; 3, Mr. O. Arbrell, gardener to A. J. Shinner, Esq., Cheltenham.



Three Cabbage Lettuces.—1, Mr. H. Beard, gardener to J. G. Adami, Esq., Ashton-on-Mersey; 2, Mr. W. G. Gaiger, gardener to S. T. Whitehead, Esq., Bakewell; 3, Mr. J. Counce, Garstang.

### Section 6.—Cut Flowers.

Thirty-six Dahlias.—1, Mr. A. Harkness, Bedale, Yorkshire; 2, Messrs. Keynes & Co., Salisbury; 3, Messrs. H. Cannell & Sons, Swanley, Kent.

Twenty-four Dahlias.—Mr. A. Harkness, Bedale; 2, Messrs. Keynes & Co.; 3, Messrs. H. Cannell & Sons.

Twelve Dahlias.—1, Messrs. Keynes & Co.; 2, Messrs. H. Cannell & Sons; 3, Mr. A. Harkness, Bedale.

Twenty-four fancy Dahlias.—1, Messrs. Keynes & Co.; 2, Mr. H. Clark, Leeds; 3, Messrs. H. Cannell & Sons.

Twelve fancy Dahlias.—1, Messrs. Keynes & Co.; 2, Mr. H. Clark, Leeds; 3, Messrs. H. Cannell & Sons.

Twelve Hollyhocks, cut blooms.—1, Messrs. John Thompson & Son, Newcastle-on-Tyne; 2, Mr. Richard Mann, Howden, Yorkshire; 3, Mr. Robert Mann, Shadwell, Leeds.

Best collection of Gladioli, cut spikes.—1, Messrs. Kelway & Son, Langport, Somersetshire; 2, Messrs. John Thompson & Son, Newcastle-on-Tyne.

Twenty-four spikes Gladioli.—1, Messrs. Kelway & Son.

Twelve spikes Gladioli.—1, Messrs. John Thompson & Son; 2, Mr. A. Harkness.

Twelve spikes of Stocks.—1, Messrs. J. Biddles & Co.; 2, Mr. A. Kenyon, Woodhouses, Ashton-under-Lyne.

Twelve Asters.—1, Mr. John Walker, High Street, Thame; 2, Mr. J. Royle, Swinton.

Twelve French Marigolds.—1, Mr. J. Sutherland, Lenzie, N.B.; 2, Mr. R. N. Hill, Water Street, Longtown; 3, Mr. E. Fletcher, Baildon, Leeds.

Twelve African Marigolds.—1, Mr. R. Mann, Howden, Yorkshire; 2, Messrs. J. Biddles & Co.; 3, Mr. H. Clark.

Twelve Phloxes, cut spikes.—1, Mr. Hiliel Marsh, Unsworth; 2, Messrs. John Thompson & Son; 3, Messrs. J. Biddles & Co.

Thirty-six Herbaceous Cut Flowers.—1, Mr. F. Perkins, Leamington; 2, Messrs. John Thompson & Son.

Twelve Herbaceous Cut Flowers.—1, Mr. F. Faulkner; 2, Mr. F. Perkins; 3, Mr. W. Plant, gardener to R. P. Gill, Esq., Ashton-on-Mersey.

Twenty-four Pelargoniums, cut blooms.—1, Mr. J. Walker, Thame; 2, Mr. F. Perkins; 3, Messrs. H. Cannell & Sons, Swanley, Kent.

Twelve Pentstemons.—1, Mr. W. Brownbill, Sale; 2, Mr. A. Harkness.

Eighteen bunches of Cut Flowers.—3, Mr. J. McIndoe.

Twelve French Pæony-flowered Asters.—1, Messrs. Saltmarsh & Son, Moulsham Nurseries, Chelmsford; 2, Mr. John Walker, High Street, Thame; 3, Mr. H. Clark, Leeds.

Twelve Show Pansies.—1, Mr. John Sutherland, Lenzie, N.B.; 2, Messrs. Jas. Dobbie and Co., Rothsay, N.B.; 3, Messrs. W. Paul and Son, Paisley, N.B.

Twelve fancy Pansies.—1, Mr. John Sutherland, Lenzie, N.B.; 2, Messrs. W. Paul and Son, Paisley, N.B.; 3, Messrs. Jas. Dobbie and Co., Rothsay, N.B.

### Section 7.—Bouquets and Objects of Ornament in Natural Flowers and Fruits.

Six Wedding Bouquets.—1, Messrs. Jones and Sons, Shrewsbury; 2, Mr. William Brown, Richmond; 3, Mr. F. Perkins, Leamington.

Six Bouquets for Balls.—1, Messrs. Jones and Sons, Shrewsbury; 2, Messrs. Turner Brothers, florists, Liverpool; 3, Mr. John Stephenson, nurseryman, Timperley.

One Wedding Bouquet.—1, Henry and Co.; 2, Mr. J. Perkins, Leamington; 3, Mr. James Cypher, Cheltenham.

One Bouquet for Ball.—1, Mr. J. Kellett, Oxford Street, Manchester; 2, Mr. Jas. Cypher, Cheltenham; 3, Mr. J. Mason.

Dinner Table completely laid out for twelve persons.—1, Mr. James Cypher, near Cheltenham; 2, Mr. James Mason, Victoria Street, Manchester; 3, Messrs. Jones and Sons, Shrewsbury; 4, Mr. G. Masters, gardener to Col. Cornwall Legh, Knutsford.

One Hand Bouquet of Everlasting Flowers and Grasses.—1, Mr. F. Perkins, Leamington; 2, Miss E. Stuart, Holloway, London; 3, Messrs. Jones and Sons, Shrewsbury.

### Section 8.—Plants.

Twenty Miscellaneous Plants.—1, Mrs. E. Cole and Sons, The Nurseries, Withington; 2, Mr. E. Tudgy, gardener to J. F. W. Williams, Esq., Worcester; 3, John Rylands, Esq., Longford Hall, Stretford.

Eight Exotic Orchids in bloom.—1, Mr. James Hill, gardener to George Hardy, Esq., Pickering Lodge, Timperley; 2, Mr. W. Perry, gardener to H. C. Miles, Esq., Penpole, Bristol; 3, Mr. E. Mitchell, gardener to Dr. Ainsworth, Cliffe Point, Broughton.

Eight Oxotic Orchids in bloom.—1, Mr. B. S. Williams, Upper Holloway, London; 2, Mr. James Cypher, Cheltenham.

Six Crotons.—1, Mr. Paul, gardener to S. Schloss, Esq., Bowden; 2, Mr. W. Lingard, gardener to Henry Samson, Esq., Bowden.

Ten Crotons.—1, Messrs. Ireland & Thomson, Edinburgh; 2, Mr. J. Cypher, and Mr. B. S. Williams, equal; extra special certificate, Messrs. R. P. Ker & Sons, Liverpool.

Six Cape Heaths.—Mr. F. Falkner, gardener to F. R. Leyland, Esq., Woolton hall; 2, Mr. E. Tudgy.

Cape Heaths.—1, Mr. James Cypher; 2, Mrs. E. Cole & Sons; 3, Mr. Thomas Pope, nurseryman, Astley Bridge.

For the best collection of Pitcher plants, Sarracenias.—1, Mr. B. S. Williams.

Ten Pitcher plants, including Sarracenias.—1, Mr. A. Williams, gardener to Joseph Broom, Esq., Wood Lawn, Didsbury; 2, Mr. J. Morton.

Eight Coleus.—1, Mr. G. Herrington, gardener to C. J. Hall, Esq., Hawkesmoor, Fallowfield; 2, Mr. C. Humphries, gardener to J. G. Silkenstadt, Esq., Rose Bank, Didsbury; 3, Mr. Geo. Kemp, gardener to Mrs. Sykes, Edgley House, Stockport.

Six Palms.—1, Mr. B. S. Williams; 2, Mr. James Cypher; 3, Messrs. James Dickson & Son.

Four Palms.—1, Mr. W. Lingard, gardener to Henry Samson, Esq., Bowden; 2, Mr. J. Hammond; 3, Mr. E. Tudgy.

Ten Exotic Ferns.—1, Mr. C. Paul, gardener to S. Schloss, Esq., Bowden; 2, Mr. W. Lingard, gardener to H. Samson, Esq., Bowden; 3, Mr. J. Hesketh, gardener to Arthur Birley, Esq., Woodbank, Pendlebury.

Twelve Dracenas.—1, Messrs. R. P. Ker & Sons; 2, Mr. B. S. Williams; 3, Messrs. Ireland and Thomson.

Six Dracenas.—1, Mr. Pratt, gardener to Lord Hill, Hawkstone; 2, Mr. J. Hammond; 3, Mr. H. Beard, gardener to J. G. Adami, Esq., Ashton-on-Mersey.

Group of miscellaneous plants, arranged for effect and occupying space not exceeding 20 ft. by 10 ft.—1, Mr. G. Smith; 2, Mr. C. Paul, gardener to S. Schloss, Esq., Bowden; 3, Mr. J. Hammond; 4, Mr. G. Wilkes.

Group of plants, occupying space not exceeding 30 ft. by 15 ft.—1, Messrs. R. P. Ker & Sons; 2, Mrs. E. Cole & Sons, Withington; 3, Messrs. W. G. Caldwell & Sons, Knutsford; 4, Mr. R. Simpson, Selby.

Twelve new plants of any description.—1, Mr. B. S. Williams; 2, Messrs. R. P. Ker & Sons; 3, Mr. J. Cypher.

Six new plants, introduced into Europe by the exhibitor, and not found in commerce.—1, Mr. B. S. Williams.

One new plant in flower, and not in commerce.—1, Mr. B. S. Williams; 2, Mr. E. Mitchell gar-

dener to Dr. Ainsworth, Cliff Point, Lower Broughton.

One new plant not in flower, and not found in commerce.—1, Messrs. Ireland & Thomson; 2, Mr. B. S. Williams; 3, Messrs. R. P. Ker & Sons.

Twenty economical and medicinal plants.—1, Mr. B. S. Williams.

Six pots of *Lilium auratum*.—1, Mr. Charles Turner.

Three pots of *Lilium auratum*.—1, Mr. H. Beard.

Six pots of *Lilium lancifolium*.—1, Mr. H. Beard.

Three Pots of *Lilium lancifolium*.—1, Mr. Geo. Kemp, gardener to Mrs. Sykes, Edgley House, Stockport; 2, Mr. John Morton.

Six Fuchsias.—2, Mr. G. Coulson, gardener to H. Schill, Esq., Fair Oak, Didsbury.

Six Pans of *Achimenes*.—1, Mr. G. Coulson, gardener to H. Schill, Esq., Didsbury; 2, Mr. Chas. Ryland, Ormskirk.

Eight Zonal Pelargoniums.—1, Mr. W. McGaw, gardener to F. J. Sumner, Esq., Hayfield; 2, Mr. Chas. Ryland; 3, Mr. C. Humphries, gardener to J. G. Silkenstadt, Esq., Rose Bank, Didsbury.

Eight Variegated Pelargoniums.—1, Mr. Wm. McGaw; 2, Mr. Chas. Ryland; 3, Mr. R. Simpson, Selby.

Eight Filmy Ferns.—1, Mr. B. S. Williams.

Four Filmy Ferns.—1, Mr. C. Goodall; 2, Mr. E. Tudgy; 3, Mr. G. Smith.

50 Succulents.—Messrs. James Dickson & Son.

Eight Greenhouse Yuccas.—1, Mr. B. S. Williams.

For the best collection of Japanese Plants, Maples, &c.—1, Messrs. Sandish & Co., Ascot; 2, Messrs. John Waterer & Sons, Bagshot.

Twelve Dinner Table Plants.—1, Mr. B. S. Williams; 2, Messrs. Ireland and Thompson, 3, Messrs. Jones and Sons.

Six Dinner Table Plants.—1, Mr. Wm. Plant; 2, Mr. H. Beard; 3, Mr. H. German, gardener to T. B. Cutts, Esq., Nottingham.

Twelve Hardy Conifers.—1, Messrs. Jno. Waterer & Sons; 2, Messrs. Paul & Sons.

Twelve Hardy Evergreen Trees and Shrubs.—1, Messrs. W. G. Caldwell & Sons, Knutsford; 2, Messrs. John Waterer & Sons.

Six Golden Yews.—1, Messrs. W. G. Caldwell & Sons; 2, Messrs. John Waterer & Sons.

Six Tree Ferns.—1, Mr. S. Williams; 2, Mr. James Cypher; 3, Messrs. James Dickson & Son.

Pair of Tree Ferns.—1, Lord Howard.

Six Hollies.—1, Messrs. John Waterer & Sons.

6 Balsams.—1, Mr. R. Elphinstone, gardener to John Heywood, Esq., Stretford; 2, Mr. George Wilkes, gardener to Mrs. Tambaci, Cheadle; 3, Lord Howard.

Six Cockscombs.—1, Mr. B. S. Williams; 2, Mr. J. Gould, gardener to Col. Cross, Preston; 3, Mr. R. Murray, gardener to Capt. Turner, Stockport.

### For Cottagers.

Ten hardy herbaceous Cut Flowers, distinct.—1, Mr. Abram Higginbottom, Swinton.

Six spikes of Phloxes, distinct.—1, Mr. Richard, Marsh, Unsworth.

Eight Roses, distinct.—1, Mr. Henry Mercer, Birkenhead.

Six Bunches of Sweet Williams.—1, Mr. Joseph Leicester, Tabley Brook, Cheshire.

Six Carnations.—1, Mr. Samuel Rayner, Sandy-lane, Tonge.

Six Picotees.—1, Mr. S. Rayner, Tonge, Midple-ton.

Six Pansies.—1, Mr. George Whitfield, Bowdon.

For the best miscellaneous collection of Cut Flowers.—1, Mr. Henry Mercer.

One bouquet of wild flowers.—1, Mr. H. Mercer Birkenhead.

For the best collection of Gooseberries, any kind.—1, Mr. Charles Leicester, Tabley.

For the best collection of Currants, any kinds.—1, Mr. M. Bullough, Tarporley.

Twelve Kidney Potatoes, red.—1, Mr. M. Bullough, Tarporley.

Twelve round Potatoes, white.—1, Mr. J. R. Leyland, Altrincham.



Twelve round Potatoes, red.—1, Mr. M. Bullough, Tarpoley.

Six Onions, spring sown, red.—1, Mr. William Tyldesley, Swinton.

Six Onions, white.—1, Mr. Peter Gregson.

Two Cabbages.—1, Mr. Abiam Heggibottom, Swinton.

Twenty-five pods of Peas.—1, Mr. George Goulden, Bowdon; 2, Mr. Charles Leicester, Tabley.

Twelve Turnips.—1, Mr. J. R. Ledland, Altrincham; 2, Mr. John Goulden, Bowdon.

Twelve Carrots.—1, Mr. George Whitfield, Bowdon.

Two sticks of Rhubarb.—1, Mr. Thomas Marsh, Unsworth; 2, Mr. H. Marsh, Unsworth.

Twenty-five pods of Broad Beans.—1, Mr. W. Goulden, Bowdon; 2, Mr. Josh. Leicester, Tabley Brook.

Twenty-five pods of French Beans.—1, Mr. M. Bullough, Tarpoley.

Three sticks of Red Celery.—1, Mr. J. E. Maxted, Loughborough; 2, Mr. John Hansom, Bloxholm.

Three sticks of White Celery.—1, Mr. John Lacy, Bloxholm; 2, Mr. T. Farnworth, Higher Blackley.

### Special Prizes.

For the best six bunches of white Grapes, and the best six bunches of Black Grapes, two or four kinds.—1, Earl of Durham, Lambton.

For the best collection of twelve kinds of fruit, including two Pines, two kinds of Grapes, two Melons, and six other kinds of fruits.—1, Earl Somers, Ledbury; 2, Earl of Harrington, Elvaston Castle.

For the best collection of Vegetables, twelve distinct kinds, any variety.—1, Viscount Eversley, Winchfield; 2, Earl of Carington, Wycombe Abbey; 3, Mr. J. D. Corbett, Shrewsbury; 4, Mr. Chas. H. Frith, Sheffield.

For the best single specimen of Sutton's Hero of Lockinge Melon.—1, Marquis of Cholmondeley, Nantwich; 2, Earl of Elsinere, Worsley Hall; 3, Marquis of Exeter, Burghley House.

For the best dish of autumn Strawberries.—1, Earl of Crawford and Balcarres.

Collection of six distinct kinds of vegetables.—1, Duke of Marlborough, Blenheim Palace; 2, Mr. J. D. Corbett, Shrewsbury; 3, Sir S. Duncombe, Bart., Brickill Manor; 4, Mr. Robert Beale, Thursby.

### NATIONAL ROSE SOCIETY.

Forty-eight distinct, single trusses (nurserymen).—1, Messrs. Robert Mack and Son, Catterick Bridge, Yorkshire; 2, Messrs. Paul and Son, the Old Nurseries, Cheshunt; 3, Cranston Nursery and Seed Company Limited, King's Acre, Hereford.

Twenty-four distinct, three trusses of each.—1, Messrs. Robert Mack and Son, Catterick Bridge, Yorkshire; 2, Messrs. Paul and Son, Cheshunt; 3, Cranston Nursery and Seed Company Limited, Hereford.

Twenty-four distinct single trusses.—1, Mr. John House, Eastgate Nurseries, Peterborough; 2, Mr. John Walker, Thame, Oxford.

Twelve Teas or Noisettes, three trusses of each.—1, Messrs. Robert Mack & Son, Catterick Bridge; 2, Messrs. Paul & Son, Cheshunt; 3, Mr. George Prince, Oxford.

Twelve Teas or Noisettes, distinct, single trusses.—1 Cranston & Co., Hereford; 2, Mr. John House, Peterborough.

Twenty-four distinct single trusses (amateurs). 1, Mr. T. Hall, Larch Wood, Rock Ferry, Cheshire; 2, Rev. S. Reynolds Hole, Cauntton Manor, Newark.

Eighteen distinct, single trusses.—1, Mr. T. B. Hall, Rock Ferry.

Twelve distinct, single trusses.—1, Mr. A. Tate, Roseleigh, near Liverpool.

Nine distinct, single trusses.—1, Mr. E. Mawley.

Six distinct, single trusses.—1, Mr. S. Barlow, Stakehill, Chadderton; 2, Mr. H. Grendon Tippet, Woodhey, Rock Ferry.

Twelve Teas or Noisettes, distinct, single trusses.—1, Mr. T. B. Hall, Rock Ferry.

Six Teas or Noisettes, distinct, three trusses of each.—1, Mr. T. B. Hall.

Six Teas or Noisettes, distinct, single trusses.—1, Mr. Mawley; 2, Mr. Ecroyd, Claxton, Wavertree, Liverpool.

Twelve single trusses of any Rose.—1, Messrs. Robert Mack & Son, Catterick Bridge; 2, Mr. G. Prince, Oxford; 3, Cranston Nursery and Seed Company, Limited, Hereford.

Single trusses of any Rose.—1, Cranston Nursery and Seed Company, Limited; 2, Messrs. R. Mack & Son; 3, Mr. G. Prince.

For the best six heads of Dickson, Brown, and Tait's Eclipse Cauliflower.—1, Mr. J. W. Pease, M.F., Guisborough; 2, Duke of St. Alban's, Bestwood Lodge.

For the best six bunches of Dickson, Brown, and Tait's Queen of Tomatoes.—1, Earl of Durham, Lambton; 2, Mr. N. B. Philips, M.P., The Park; 3, Mr. E. M. Mundy, Derby.

For the best fruit of Dickson, Brown, and Tait's Best of All Melon.—1, Mrs. Tambaci, Cheadle; 2, Baroness L. de Rothschild, Acton; 3, Mr. Charles H. Frith, Sheffield.

For the best collection of Vegetables, in twelve distinct varieties.—1, Earl of Scarborough, Sandbeck Park; 2, Mr. A. J. Shinner, Cheltenham; 3, Earl of Cork.

Three bunches black Grapes.—1, Mr. W. Forbes, Falkirk, N.B.

For the best collection of Apples, not less than three fruits of a kind, in distinct kinds. The fruits to be grown north of a straight line drawn from Carnarvon through Chester and Lincoln to the German Ocean.—1, Mr. C. S. A. Thelluson, Doncaster.

### ROYAL HORTICULTURAL SOCIETY.

AUGUST 23.

This meeting was but thinly attended, and the exhibits were few. First-class certificates were awarded to

Mr. King, gardener to G. Simpson, Esq., Wray Park, Reigate, for—

**Coleus Edith Sentance**, one of the most brilliant Coleuses in cultivation. Its leaves, which are large, are of the richest purple-crimson, round which is a broad band of deep chocolate and a narrow edging of bright green.

To Mr. Wm. Bull, King's Road, Chelsea, for—**Lilium auratum cruentum**, a kind with large, profusely spotted flowers, and a broad chocolate mid-rib.

**Mormodes armenaicum**, a Phaius-like plant, bearing long drooping spikes of rich cinnamon and golden coloured, sweet-scented blossoms.

To Messrs. Low & Co., Clapton, for—**Mascarenhaisia curnowiana**, a Jasmine-like twining plant bearing rosy pink blossoms.

To Mr. Russell, Haverstock Hill, for—**Centaurea ragusina Russellii**, a very dwarf compact variety, with very white leaves. A desirable kind for edgings.

A second-class certificate was awarded to Mr. Rapple, Bedford Hill House, Balham, for—

**Gloxinia Fredericki**, a kind with erect flowers of fine velvety purple-maroon with a white throat. A very refined, well shaped flower.

Messrs. Veitch & Sons contributed several new *Ixoras* and other plants, which, however, were soon removed and despatched for Manchester. Messrs. Low & Co. sent a fine branching variety of *Odontoglossum Alexandræ*, for which a vote of thanks was accorded. Mr. J. G. McKenzie, Wensley Rectory, Bedale, Yorks, was also awarded a vote of thanks for a bushy white-flowered seedling *Lobelia*. Messrs. Carter & Sons, Holborn, showed a basket of *Tropeolum Empress of India*, the colour of which was very striking.

A fine collection of *Zinnias* came from Chiswick; also some well grown specimens of the fine old *Begonia Martiana*; and cut sprays of *B. Ascotensis* produced in the open air. For vases or hanging over low walls this *Begonia* is quite equal to a *Fuchsia*. A collection of seven kinds of *Ceanothus* also came from Chiswick, and an assortment of Dahlias. A basket full of the rosy-purple *Sedum Ewersi* and a group of cut blooms of zonal and Ivy-leaved *Pelargoniums* were likewise sent from Chiswick. Mr. Ware, Hale Farm, Tottenham, showed a magnificent single white *Dahlia* named *White Queen*. The flowers, which measured 4 in. across, were of the purest transparent whiteness, and had an effective golden yellow centre.

A well-grown plant of the double white *Mignonne* (*Reseda odorata prolifera alba*) was shown by Mr. Balchin, Hassock Gate Nursery, Keymer, Sussex, and for which a cultural commendation was awarded. Mr. Morse, Epsom, sent a curious dimorphism from *Aralia Veitchii*; also a fine specimen just coming into bloom of *Yucca gloriosa elegans variegata*. Mr. Riches, Tooting, contributed an interesting collection of cut blooms of hardy flowers, among which were *Veronica Hendersoni*, *Asclepias tuberosa*, *Hieraceum aurantiacum*, *Pentstemons*, *Delphiniums*, *Phloxes*, and *Sunflowers*.

In competition for prizes offered by Messrs. Ewing & Co., Norwich, for cut sprays of hardy shrubs, Mr. Moorman, gardener to Misses Christy, Kingston-on-Thames, was first, and Mr. Morse, Epsom, second. Both collections contained sprays of ordinary shrubby plants, some of which were of very doubtful hardiness.

**Fruit and Vegetables.**—Two new sorts of Melons came from Messrs. Cheal and Sons, Lowfield Nurseries, Crawley, named respectively *Shepherd's Perfection* and *Shepherd's Model*, the first a white-fleshed kind, and the second a green-fleshed sort, both well worth cultivating. Mr. Wilkinson, gardener to Viscount Gage, likewise showed a collection of Melons. Messrs. Cheal and Sons showed a promising new Apple named *Early Lowfield*. A basket of fine fruits of the *Ecklinville Seedling Apple* was sent from Chiswick; also fruits of *Duchess of Oldenburg*; and several kinds of Peas and Potatoes of no special merit were also shown.

### OBITUARY.

MADAME VAN HOUTTE died on the 18th inst., at the Royal Nurseries, Gendbrugge, Ghent, aged 71. She was the second wife of M. Louis Van Houtte, who founded the business, which she has, since his death on May 9, 1876, so successfully conducted. Her son M. Louis Van Houtte, will henceforth carry on the business; therefore little if any change from a trade point of view is likely to occur.

**Compressed Asphalt.**—Although the value of bituminous asphalt for paving has long been recognised, it has always been felt that one of its defects is a want of density, while another is its slipperiness under the influence of slight moisture. To remedy the first of these defects heavy road rollers have been used, while for the second sharp sand or some other similar material has been introduced into the body of the bitumen. The most recently devised method of treating it in order to remove these drawbacks, and apparently the most successful, consists in combining limestone with bitumen and moulding the compound under pressure. The limestone is crushed, heated, and mixed with the bitumen at a temperature of 222°, the stone having a great affinity for the bitumen when heated. The combination is then pressed into rectangular blocks of convenient size in moulds under a pressure of about 50 tons. The blocks are then submitted to a cold-water bath until they are cold and ready for use. They then form a paving material of great density, and in which the angular points of the limestone are always being developed under traffic. A permanently rough surface is thus produced, which, combined with the cracks formed by the joints of the blocks, presents an excellent foothold for horses. A portion of the roadway in Queen Victoria Street, adjoining the Mansion House Station of the Metropolitan District Railway, has just been laid with this material, which has been in use for some time past in the United States with excellent results. If this should save us from the wretched wooden pavements now being laid down, and which wear and smell so badly, it will be a blessing.



"This is an Art  
Which does mend Nature : change it rather : but  
THE ART ITSELF IS NATURE."—Shakespeare.

### BEDDING PLANTS, BOUQUETS, AND FLOWER DRESSING.

THERE has been much written recently in *THE GARDEN* on the subject of "bedding *v.* mixed borders," the proper method of making bouquets, and dressing flowers for shows. It seems to me that to form a correct judgment on these questions, what we ought to do is, to look at them from an artistic and common-sense point of view. In the case of "bedding *v.* mixed borders," regarded in the manner I have just suggested, we want to see plants grown in such a way and under such conditions that we may fairly see them as they would grow naturally, and placed in such positions that they may harmonise with the surrounding vegetation. In "bedding," as usually carried out, the first of these requirements is never thought of; the character and natural growth of the plants is entirely sacrificed by crowding them together to obtain a mass of a certain colour; it matters little what the plants are, whether they have large or small flowers, delicate or bold foliage, so long as a blaze of the desired colour can be obtained by planting them as "thick as they can stick." Surely this is not artistic; nor does keeping houses and frames full of plants and cuttings during the winter at a great expense, merely to fill a garden with bright lines and patches, meet the requirements of common sense. Bedding is now, I am thankful to say, in disrepute, but we need not therefore banish all Pelargoniums, &c., from our gardens, but let us place them where they will harmonise well with other flowers, and let each plant be able to assert its own individuality, and not be crowded with others, so that the form of each plant is lost. In mixed borders properly planted and kept the plants are able to grow naturally, and as summer follows spring, and autumn summer, so the flowers in them are ever varying, and we have the pleasure of watching our favourites bud and blossom, and our borders are always gay and interesting, instead of continually staring at a bright, but monotonous blaze of colour, which is usually considered the perfection of bedding.

Again, in making bouquets the object should not be to cram as many bright flowers as possible into a vase, which is neither artistic nor sensible, but to arrange them in such a manner that each may be seen to the greatest advantage, and to employ a due amount of foliage to relieve them from one another. Bridal bouquets, as usually made, are the types of what bouquets should not be; the flowers in them are so squeezed together that some examination is required before one can make out of what kinds they are composed, and most of the flowers have been wired to bring them into the required positions; and what is the result? A rich white mass, which would have been equally pleasing to the eye if made of artificial flowers. Apropos of artificial flowers, which I detest, why is it that many ladies (their number is happily diminishing) do not object to wear them, while very few, if any, would carry an artificial bouquet in their hand?

It requires some courage to take up the cudgels against "dressing" Carnations and "making up" Azaleas, Pelargoniums, &c., for horticultural shows, as persons who defend these practices must indeed be bold and well satisfied with their own powers if they think they can improve upon Nature. The colour and size of flowers may, I admit, be improved by cultiva-

tion, but that is really only assisting Nature, and plants are not always improved by this assistance. When a plant is growing in its natural manner, for any one to say, This plant has made a mistake; it should grow like a large cone with all its flowers close together; this one's petals should not grow in this way; this Yew tree should grow like a dumb waiter with a peacock at the top; and then proceed to stick, and tie, and clip, and pull about the petals is, in my opinion, guilty of great impertinence and folly; and though much skill, and ingenuity, and time, and trouble may have been expended, can the result be called artistic and sensible? "Girofle's" plea in *THE GARDEN* (p. 182) in favour of the florists' art is not much to the point, for among civilised nations dress is used for the sake of decency and warmth; ladies' hair is dressed for convenience, and must be brushed and combed to keep it clean, as plants are syringed, &c., for the same object.

G. S. S.

### GARDEN LABELS.

SUFFER me to add a few words to the label discussion. We seem to approach it from very different points of view. Mr. Wood writes thus in your impression of the 27th ult.: "I am somewhat puzzled as to how we are to get at the ideal label of those who ask for a clear and legible label to be easily read without stooping and not conspicuous. I will say no more about that, only that I for one give it up." Mr. J. Wood is devoted to zinc, and therefore I do not wonder at all at the conclusion to which he has come, but if he will kindly bear with me for a little I believe I can show him that the part of the problem to which he alludes has been solved to completeness, and, while I discard the notion of an ideal label altogether, I think about this one particular there is little left to be wished for. I must first, however, say that I am pleased at the manner with which this point is emphasised by him. It is very often treated with entire neglect, and one might suppose that if only a label is substantial and cheap every purpose is answered. I approach this question in an entirely different manner. A label is worth nothing in my eyes (I am not speaking of any special use) unless it gives the name of the plant to which it belongs with unmistakable clearness while it remains itself, so to say, in the background, and is content to be unobtrusive and hardly seen. Mr. J. Wood has discerned clearly enough in what the puzzle consists. On the one hand, if we are to have great gawky figure-heads in our gardens which stare us in the face, I, for my part, should say we had better have done with nomenclature altogether, or learn to carry it in our heads; there is something very affronting in labels which overwhelm the little treasures to which they belong with their loudness or their size. Let us never forget that the labels belong to the plants, and not the plants to the labels. But on the other hand, a label is a deceit and a snare if it does not tell you at once all you want to know. There should be no neck-breaking process required, and no stooping at all. It should be as easy to read the names of our plants as we walk along the garden-path as it is to read the pages of a book in the library, and the difficulty, of course, has been for those who go along with all this to unite unobtrusiveness in the label with perfect clearness of the name which is written upon it. But I think it can be done, and the method which I recommend is the following: Let the cross-bar of the label be of no greater size than is wanted to carry the name; let this receive two good coats of white paint (the white must be decided, or the letters will suffer for it afterwards) and then when this white paint is

dry and you have plants to be named, let one surface of deep black be given to it, and let the words that are needed be scratched in before the black paint is set. The effect of it all is that you have names which are inscribed on a black ground in white letters of remarkable clearness, and I will venture to say that from the point of view of good taste, nothing ever will be found that looks better than this. The labels assert themselves in the borders in the very slightest possible manner, while the information you want is obtained from them at once. But there are two or three other points to be noticed. If you want to decipher a label with ease which is stuck into the ground, it stands to reason that the inscription on it must be written horizontally, and not from the bottom to the top, or even from the top to the bottom, and this one consideration will govern a good deal. It leads you straight to what I may perhaps call a composite label. I have, it is true, seen the names of plants written horizontally on labels which are all of a piece, but I have never seen such labels which are handy to use, nor could I get on with them. But the whole thing is managed if you give to each of the little cross-bars two wire supports. This is easily done, and after a trial of several years I can confidently say that success is complete. For these little wire supports are very nearly invisible, they scarcely meet the eye at all, and so the main points which have been referred to above are not in the least interfered with. The background of the label still remains of the smallest, you have a name before you, and only a name. And to this I may add some other very clear gains. These little wire legs never rot in the ground. Unlike wood, they are unaffected by damp, and no fungus will grow on them. Next, they remain quite upright after a frost. Mr. J. Wood is right in the supposition he makes. Wooden labels are certainly lifted out of their places by frost, and zinc labels cut the ground so sharply, they are even less to be trusted; but I would ask anyone to make trial of these little supports, and to report on them next winter; and, thirdly, where cheapness is thought of, iron wire will bear comparison with anything else. I hope I shall not appear egotistical in writing as I have done. I disclaim all originality about the main point of white upon black. I saw it some years ago in a label of which it seemed to me to be the great recommendation, but I could not adopt it at once, because it was hampered with grave difficulties. I take credit to myself merely for discerning its value and for giving it a better adaptation than it had before, and, in fact, for bringing it into use. It runs in my head that the principle of white letters on a black ground had the imprimature of that prince of all gardeners, the late Mr. Wilson Saunders, and it would not surprise me to hear that it was his idea. I am sure it has the approval of that very intelligent man, Mr. Charles Green, formerly in the employ of Mr. Saunders, and now in that of Sir G. Macleay at Pendell Court. I have talked to him about the matter. But, be this as it may, I hope those who have any regard for the general appearance of their gardens will think twice before they adopt glaring colours in them, and that they will find something better. I by no means say that the label which I venture to recommend with such confidence is good for all circumstances, all places, and all plants. I wonder that the thought of an ideal label should ever have entered into any one's head at all. What is suitable for one set of conditions may very likely not be suitable for another, and a wrong judgment may be formed by not attending to this. I do not recommend a composite label with white letters on a black ground



for the back rows of a large border, or for a shrubbery, or for the wild garden, but I think it is invaluable for a rockery where you have hundreds of small plants which should just be distinguished from each other, and which can bear no advertising at all. I have found it to answer in beds which are crowded with bulbs, and where clearness is especially to be desired. It does well for the front rows of the herbaceous border, or for any border which the eye can command at a glance, or for the glazed pit, but I should never let it be covered over by the huge boughs of some *Pinus insignis*, or even do battle with a rampant *Polygonum*. Something more demonstrative is there absolutely required, and chrome yellow would be of use. On the whole, I venture to prophesy that some such label as that which Mr. Brockbank has in use, in conjunction with something that is of a neater and handier description, will do the work of the future. It is possible that in greenhouses terra cotta labels may answer.

I would just say before I put down my pen that I cannot agree with Mr. J. Wood about what he says of the label committee. I wish I could have found time to belong to their number, as they kindly asked me to do. They have found out, as might have been expected, that it is impossible to get an ideal label at all, but they have selected a dozen or so of those which are in their judgment the best, and in effect they have said to the fraternity, and to all lovers of their gardens, "Help yourselves out of these!"

This supplementary discussion in your columns is useful and interesting, as it brings out the merits or the demerits of the chosen few, and we know best ourselves what we respectively want for our favourites. HENRY EWBANK.

*St. John's, Ryde.*

— With reference to my notes on zinc labels (p. 176) you ask, "Can they be used again for other plants? Certainly they can a dozen times if wanted. Mr. Wood recommends removing the writing by means of a grindstone. Few have suitable grindstones beside them, or can send them readily to a grinder. A much simpler plan is to scrape them with an ordinary carpenter's chisel, which is easily done, and they are ready for use.—P. NEILL FRASER.

[That being so, no better label for many purposes could be desired.]

## SOCIETIES.

### MANCHESTER INTERNATIONAL EXHIBITION.

In responding to the toast of "The Judges" at the banquet given by the Manchester Royal Botanical Society on the evening of their international show, the Rev. Canon Hole said: Gentlemen of the jury,—I beg pardon, but as a judge in this the greatest trial (of horticultural skill) on record, it is difficult to forego judicial habits, and, moreover, we may be said, in accordance with some old lines which I remember, to be still in court—

Good judges in the law there be of champagne, claret, and sherry;  
And when their lordships deign to joke, and banish Littleton and Coke,  
They order that the best old port shall henceforth be the rule of court.  
That care shall be the fate of apes, their only circuit be of chaises;  
And happy on such terms as these, they seem a Court of Common Pleas.

Such a court I address to-night, for we are all of us in common pleased with the wonderful exhibition which we have seen to-day, unique

in its extent and its excellence; surely the grandest display of things pleasant to the eye and good for food which has been seen since High in Paradise, by the four rivers, the first Roses bloomed.

We are all of us in common pleased with this re-union of our brotherhood; this gathering of the clans whose kilt is the purple apron (for I am sure that none who have won laurels to-day will ever be ashamed of their baize); and we are all of us in common pleased with this genial company and generous entertainment presided over by the chief magistrate of this great city. This kindly congress is also most opportune. There has been a good deal of electricity of late in the horticultural atmosphere. It has been somewhat oppressive. There have been rumblings of thunder and flashes of angry lightning. It has been bad keeping weather (so far as the temper is concerned); the cream of the milk of human kindness has curdled, and the good beer of our benevolence has turned a little sour. A meeting like this clears the air and gladdens like the sunshine. Now is the winter of our discontent made glorious summer by the sun of York; no, not of York, but Lancaster. We hear a voice saying "Sirs, ye are brethren," and so on, as when those words were first put a thousand years ago, only the one who has done the wrong will refuse to hearken.

We gardeners are poor fighters, and only make ourselves ridiculous when we put on the helmet of battle instead of the billycock of peace. The *Gladiolus*, *Gladiolus*, *Gladiolus*, should be their only sword; their only artillery the Grape upon their shooting Vines; their cannon and ball Muscat and Pearson's Long Gun Cucumber. The garden glove should be our only cestus. Fighting with fists, we hit round and lose our guard; we perspire, we pant; we come up, to quote the language of *Fistiana*, "looking unutterable things;" the tongue hangs out as with a beaten fox, like a raceme of *Lovelies-bleeding*. We long for the termination of the contest to shake hands and be friends, better friends than ever, like boys who have fought at school.

Being, as a rule, and as you see us to-night, men of peace and brotherly love, as a rule, we are content to mind our own business. We do not meddle with politics. If out-of-doors we are Radicals, having so much to do with roots under glass, we are always in a Conserva-Tory position. We are Liberals not only with manure, whenever we can get it from our greedy and malignant enemy, the farm bailiff, but liberal in the best sense of the world, bountiful with our duplicates, seeds, and grafts. We are not Home Rulers, because they who are bachelors have no home to rule, and they who are married have their homes ruled for them.

We are not much perturbed by scientific disputations. We are content to trace our genealogy to "the grand old gardener and his wife." We don't go much beyond two spits into geology; and we have not much faith in growing seed, plants, fruits, or vegetables as we have seen this morning by means of the electric light.

As a rule the gardener minds his own business, and it is big enough for his mind—wild gardens, rock gardens, spring gardens, summer gardens, winter gardens, acres of glass, and he must know something of all. If he devotes himself to one and neglects the rest, they will rise up against him, just as towards the close of the last century (see Chamber's "Book of Days," vol. i, p. 832) one George Miller married thirty wives, and, having spent their money, was finally put in the pillory, and pelted freely by a score and a half of disgusted Mrs. Millers.

No man has more work to do in these days than the gardener, and no man more enjoys a holi-

day. And when and where has such a glorious holiday been provided for him as at this right royal show? This day is to him, as it is to us all who love a garden by choice or by vocation, not only, as I have said, a happy time of fraternal converse, but a complete and unalloyed enjoyment, which will be one of our brightest memories so long as we have power to remember. And in returning thanks for the judges, Mr. Mayor, my lords and gentlemen, you must take the fulness of my heart to overflow the banks and boundaries which that toast suggests, and to express on behalf of the brotherhood of gardeners, to which I have the honour to belong our delighted appreciation of all that we have seen, and our most true thankfulness to those who originated the noble idea of this great enterprise, and to those who made it such a brilliant success.

We shall be unanimous in our congratulations to Mr. Bruce Findlay. I have been congratulating him now for about a dozen years, ever, since that memorable occasion when he persuaded the wise council of the Botanical Society to give £100 in prizes, and to receive £1600, but never with more pleasure than now. He has achieved a greater victory to-day than his illustrious namesake won at Bannockburn, because though there has been some hard fighting between the Scots—

Scots, whom Bruce has often led,

to Manchester and the English, he has laid no pitfalls for the latter to tumble into. Nobody is hurt, and the victors and the vanquished sit side by side in that sweet and calm tranquillity which follows the finish of a good dinner.

But the general wins no triumph without heroic officers and valiant men, and let us honour all to-night. The most accomplished musician is powerless without his instrument in tune. I remember a concert given by Mr. Sims Reeves, at the Albert Hall, in which my friend Dr. Haines sat down at the organ to accompany Miss Antoinette Sterling in her song of "The Lost Chord," and the chord was very much lost indeed, for no sound came, and the doctor left the instrument, and we (the audience) wondered and waited. "There was nobody to raise the wind."

The best piper that ever piped "Tullochgoram" or "Highland Laddie" cannot play with an empty bag.

And, so again, I say all honour and gratitude to those generous noble and gentlemen, who, having faith in the organist and piper, were prompt not only to "raise the wind," but also to "pay the piper."

Mr. Mayor, my lords and gentlemen, as a judge, as an exhibitor, but above all as one who has seen this morning the grandest display of the gardener's art which has ever been brought into one place, I thank those who most deserve our gratitude for all the happiness of this happy day.

Among the more striking objects exhibited at this show last week the most remarkable from a cultural standpoint were the plants were competed for the Veitch Memorial prizes. The *Dipladenia hybrida* which won the prize and medal was quite a floral exhibition in itself, so superb was it in every respect—profusely furnished with large rosy-crimson flowers and healthy green foliage from bottom to top. In competition with this plant was a grand *Eucharis amazonica*, some 5 ft. across, carrying scores of flower-stems, so fine an example of this lovely flower has not been seen since 1866, when Mr. Howard, of Balham, showed his grand plants of it at South Kensington. It was brought on this occasion from Gloucester, and the high commendation bestowed upon it by the judges was well deserved. Such examples of high class culture show in a remarkable man-



ner what can be done with classes of plants that are reputedly somewhat difficult to cultivate. The plants shown for the prize for the best greenhouse plant were not so remarkable, though the prizetaker, a noble specimen of *Erica Eweriana* *superba*, some 5 ft. through, was profusely flowered in every part, and otherwise looked a picture of health. This fine autumn-flowering Heath was shown also in fine condition by other exhibitors, which speaks much for its value as an autumn-flowering exhibition plant.

**Crotons.**—Seldom are these seen in such perfection as they were on this occasion, a circumstance doubtless attributable to the bright warm weather we had some time ago after the plants had perfected their growth. The colouring of the leafage in some instances was gorgeous, and showed well what effect Crotons are capable of producing when brought to the state of perfection in which these were. The kinds that wore the brightest tints belonged to the long narrow-leaved type. A selection of the best in the show included *Wiesmani*, *pictum*, *Lord Cairns*, *variegatum*, *Andreanum*, *Prince of Wales*, *Warreni*, *majesticum*, *Queen Victoria*, *angustifolium*, and *Youngi*. Most of these were shown superbly by Mr. Schloss, Bowdon. The Crotons of small size in the General Horticultural Company's group were in their way fully as remarkable as the large specimens, and what is more many of them were quite of a new character both in respect to habit and colour. There were some handsome Continental kinds which deserve to come into prominent notice.

**Lemons, Citrons, &c.**—Not the least interesting amongst exhibits in the fruit tent was a numerous collection of Shaddocks, Oranges, Lemons, and Citrons, shown by Mr. Muir, Margam Park, Taibach. This was the only collection exhibited, a somewhat remarkable fact, as the class was open to all countries. Mr. Muir's collection comprised fruits, flowers, and foliage, arranged in separate dishes, consisting of Tangerine, Bergamot, Portuguese, Maltese, Myrtle-leaved, Chinese, and flat fruited Oranges, Shaddocks, Citrons, Limes, the whole forming a highly attractive display of about eighteen kinds. It showed well what may be done out of the ordinary run of fruit growing in gardens, and what interest attaches thereto.

**Cut flowers.**—One of the richest features of the show overflowing in horticultural wealth was the display of the above. The first and second prize lots were almost equally fine, and the following is the first prize lot of eighteen varieties: *Statice purpurea*, *Ixora coccinea*, *Lapageria alba*, *L. rosea*, *Miltoia spectabile*, *Allamanda nobilis*, *A. Hendersoni*, *Erica Marnockiana*, *E. Ne Plus Ultra*, *E. magnifica*, *Dipladenia ornata*, *Tacsonia Van Volxemi*, *Aerides suavisimum*, *Stephanotis floribunda*, *Eucharis amazonica*, *Anthurium Scherzerianum*, *Bougainvillea glabra*, *Kalosanthes coccinea*. The material was not only choice, but it was skilfully arranged in sufficient bulk to tell most effectually without having any appearance of being overmassed or weighted. These and several other of the exhibits were all that could be desired in quality and arrangement, and well deserved the prizes and the admiration they excited. Dahlias were fine. The season in the south at any rate has not been favourable to the development of large well-formed blooms. Trips have been very abundant in some districts, and the hot weather forced the plants into bloom prematurely towards the end of the season. The principal prizes were gained by a Yorkshire grower, Mr. Harkness, of Bedale. His blooms were very large, in some cases inclining to coarseness, but most of his blooms were remarkably good. Messrs. Keynes, of Salisbury, and Cannell, of Swanley, were also prominent exhibitors. The best Dahlias exhibited were *Criterion*, *Harry*, *Jas. Service*, *Yellow Boy*, *Delicata*, *Flag of Truce*, *Flora Wyatt*, *Lord Derby*, *Alexander Crammond*, *Ovid*, *Louise Veate*, *Royal Purple*, *John Standish*, *Thomas Goodman*, *Joseph Ashby*, *Royal Queen*, *Lord Chelmsford*, *Mrs. Percy Wyndham*, *J. C. Reid*, *Mrs. Harris*, *Julia Wyatt*, *Prince Arthur*, *Mrs. Dodds*, and *Goldfinder*, all excellent sorts. The fancy Dahlias were very fine,

the flowers being large, evenly matched, and well arranged on the stands, and less formal than the show varieties. The best exhibited were John Lamont, Henry Glasscock, Egyptian Prince, Edward Peck, Annie Pritchard, Fanny Sturt, James O'Brien, Robert Burns, and Professor Fawcett. Hollyhocks were so poor that the judges withheld the prize. On the other hand, there were good single blooms exhibited, those from Mr. Thomson, of Newcastle-on-Tyne, being particularly good. Messrs. Kelway, of Langport, showed *Gladioli* well. They exhibited a collection containing 200 spikes, as well as another of 24 spikes, and received a first-class certificate for a variety that has a well-formed spike of rich crimson-scarlet flowers named *Henry Tait*. A collection from Messrs. J. Thomson, of Bedale, was the finest in the show, and speaks well for the climate of that part of Yorkshire for *Gladiolus* culture. Asters were shown numerous and well by several exhibitors, the French and quilled varieties being particularly fine. African Marigolds were very fine; the first prize dozen from Mr. Mann, of Howden, Yorkshire, contained large well-formed blooms of orange and lemon coloured varieties. The French Marigolds were not so fine. Pansies were shown well from Scotland by two nurserymen, the sorts being well selected and fine.

### Vegetables.

That gardeners who exhibit for prizes do give their attention to the production of something else besides things to look at or to please the eye was pretty evident at this show. The largest collections were those shown by provincial or other horticultural societies, and though only three lots were sent, yet they were widely representative, coming from Rochdale, Bristol, and Cheltenham respectively. How much more the Gloucester and Somersetshire districts are climatically favoured, compared with the more northern manufacturing country about Rochdale, was very evident in the wide range of the exhibits and their superior quality; indeed, whilst the two former societies showed some 50 kinds each, Rochdale had but 20, and several of these were of indifferent quality. Still, unlimited collections of this sort, however instructive, have much less interest for the gardener than collections from good private gardens, especially when staged by men who have high reputations for good vegetable culture. Thus the competition in the class for twenty kinds excited much more interest, not only because certain good growers were competing, but because in this particular class the highest average quality was looked for. Indeed, it would have been difficult for any one to have excelled the quality of the vegetables shown by Mr. Miles, of Wycombe Abbey, and Mr. Muir, of Margam Park—two collections both so near in all the twenty kinds, that not more than a couple of points could have separated them. Setting up a collection of vegetables admits of a display of some taste, and where this is shown the exhibitor has an undoubted advantage. Mr. Miles, usually foremost in this matter, was at Manchester unduly crowded, whilst Mr. Muir had ample room, and set up his products with good effect. That the first prize went to Mr. Miles shows that the judges were swayed solely by a proper regard for average quality above other considerations. The very handsome and high class collection shown by Mr. Snowden, of Thirsk, stood out prominently, and better has rarely been seen; whilst from the three prize lots, twelve dishes might have been selected that would have been perhaps unsurpassable.

**Special prize collections** offered by trade firms were remarkably good. There were no fewer than twenty-three lots of twelve kinds and eight lots of six kinds, so that good vegetable growers are abundant. In these classes some of the exhibitors showed a singular lack of good taste or judgment in putting up for these special prizes various vegetables bearing the name of some opposing seed house. Probably it would occur to most persons that if Smith offered prizes

for vegetables, it was not in good taste to label some of the things shown in the competition as Brown's or Jones' kinds.

Among the most noteworthy of Messrs. Sutton's productions were *Hero of Lockinge* Melon, evidently a fine kind; Best of all Pea, the leading sort among 66 dishes; Duke of Connaught Cucumber, Reading Giant Brussels Sprouts, Student Parsnip, Marvel Lettuce, Improved Reading Onion, Snowball Turnip, and Improved Telegraph Cucumber; and, of course, the competition would not have been complete without Sutton's *Magnum Bonum* and *Woodstock* Kidney Potatoes. Messrs. Dickson & Robinson's *Eclipse* Cauliflower was shown numerous and in fine condition, and Dickson, Brown, and Tait's *Queen of Tomatoes* was shown well, particularly from Lambton Castle. There was a fair competition for Messrs. Webb's prizes, *International* Kidney Potato and *Kinver Marrow* Peas, which are now so highly spoken of, being particularly fine among the collections.

**Single dishes.**—Of these there were not less than twenty-eight, with about 800 entries. Of Peas alone there were fifty-three dishes, and it may be said with truth that out of these, so erratic are judgments, that any six sets of judges would have made six diverse selections. It is utterly impossible with such entries to do all full justice. Marrows were a marvellous class and nearly all good. Onions, in four classes, remarkably fine. Celery, in some cases, superb, the prize sticks evidently having been blanched by some other material than soil, as the stalks presented an appearance quite distinct from that seen in the other plants. Amongst Broad Beans, *Seville Long Pod* was the finest, and amongst dwarf French Beans, the *Canadian Wonder*. There are not many places where yellow Turnips are favoured; at Manchester they had a class to themselves, but it was not largely filled. Autumn Giant and *Eclipse* Cauliflowers were very fine and solid. Cucumbers, represented by a score of sorts, of which the most favoured was a dark spined kind, named *Stretford Defiance*, and in Beet the prettiest was *Dell's Crimson*.

**Potatoes.**—It was very unfortunate that, owing to somewhat imperfect arrangements or an unusual press of space, the vegetables were dispersed in not less than four different places, several kinds and all the collections of Potatoes having to find a resting-place on the lawn, where the tables, partly protected by awnings, gave the appearance of an out-door vegetable market; certainly the vegetables would have sufficed to furnish a large market had any such place been their destination. In the three classes for 24, 18, and 12 kinds of Potatoes respectively, there were not less than 1150 dishes shown—by far the largest display of Potatoes yet seen out of London. Generally the quality was good, but the average was not nearly so high as may often be seen at the *International Potato Show*. That such growers as Mr. Miller, Mr. McKinlay, Mr. Wildsmith, Mr. Kerr, Mr. Gilbert, and Mr. Ross should take prizes was not to be wondered at, but many of the exhibitors showed considerable unacquaintance with what constitutes a handsome Potato. In not a few cases there were duplicates shown of the most glaring description, some of the prize lots not being free from this defect, but they were apparent only to those who know Potatoes. In one case, for instance, *Bresee's Prolific* was exhibited in a prize collection as two distinct kinds, and in another case four dishes were the same sort. Rough or netted skins was a distinctive feature in nearly all the tubers shown, a result due to the summer drought. Mr. Kerr's *Scotch-grown* tubers were the exception. As a rule there was a preponderance of size, and where this is seen it is invariably at the expense of beauty. Still some collections, and notably Mr. Miller's first prize 24 dishes, stood out prominently as of superior quality and beauty, and if those who put up big, ugly, dirty tubers having seen these and other good ones will take the lesson to heart it may be all the better for them when next they exhibit Potatoes at Manchester or elsewhere.



### Implement Department.

This department of the exhibition was held in a field adjoining the Botanic Garden. Considering the extent of the other sections of the show, this was not so numerously represented as we anticipated. There were, however, some interesting exhibits, and had it not been for the bad condition of the ground through the wet it would have been visited more largely.

#### Hothouses and conservatories.

Among these were some of excellent construction exhibited by Messrs. Lowe & Son, Manchester and Edinburgh, who, with an extensive exhibition of other garden structures, and boilers, and other appliances, took the gold medal, were highly commended for good workmanship by the judges. Messrs. Halliday & Son, Middleton, had span-roofed plant houses, vinery, and Peach house, and an elaborately decorated conservatory, designed to harmonise with certain styles of modern architecture. Plant houses and frames fitted with patent ventilating apparatus came from Messrs. Foster & Pearson, Nottingham; and Messrs. Tracey, of Ilford, had a convenient span-roofed house glazed with their patent system, which is one of the most efficient yet invented. A handsome span-roofed house was exhibited by Messrs. Richardson, Darlington; also other plant house, especially suitable for amateurs; they had likewise some wall-tree protectors. Messrs. Wright & Holmes, Birmingham, had houses showing their patent and simple mode of glazing without putty, and a house was also erected by Messrs. Mackenzie & Moncur, Edinburgh.

**Boilers.**—These were numerous shown. That which won the medal, as being the best both practically and scientifically considered, was shown by Messrs. Bramham & Co., Liverpool. It is a huge saddle with a watery back. Examples were shown of it in an unfitted and fitted state. It seems to be a powerful and efficient boiler, capable of heating 10,000 ft. of piping. Ben's boiler, the kind that won one of the medals this year at South Kensington, was shown by Mr. Warhurst, Highgate, as well as a span-roofed house. Messrs. Green & Sons showed their Kensington medal boiler which we described some time ago; and Mr. Wagstaff, Dukinfield, had his upright tubular saddle boilers; and Mr. Watson, St. Albans, exhibited several examples of his patent wedge, which is no doubt an excellent one, especially for small houses. Other boilers were exhibited by Messrs. Graham and Fleming, of Halifax, and Mr. Harlow, of Macclesfield.

**Lawn mowers** were shown by Messrs. Green, who had a large assortment of their well-known make; the Chadburn & Coldwell Company, London, had their patent Excelsior, an excellent machine in every respect; and Messrs. Bradford, of Manchester, and Messrs. Follows and Bates likewise had their fine machines on the ground. Among the other numerous exhibits, Mr. Matthews, Weston-super-Mare, had a large display of his well-known pottery, to which a medal was awarded, and a similar distinction was accorded to Mr. Inman, Stretford, for a large group of rustic summer-houses, bridges, seats, &c.

The following is a list of awards of the judges, the prizes in each class being the Society's medal: The best constructed greenhouse for durability and lightness, Messrs. Foster & Pearson, Beeston, Nottingham; the best conservatory suitable for smoky neighbourhoods, Messrs. Richardson & Co., Darlington; the best collection as a whole, including houses, boilers, valves, frames, handlights, &c., Messrs. Halliday & Son; the best boiler, practically and scientifically considered, Messrs. Bramham & Co., Liverpool; the best garden seat, Messrs. Leech Bros., and Hoyle, Manchester.

### NATIONAL CARNATION AND PICOTEE SOCIETY.

The northern section of this society held its annual show in conjunction with the International Show in the Manchester Botanical Gardens last week. It was a good one, considering that it was

necessary to hold a supplementary exhibition two weeks previously to enable the growers in the early districts to exhibit. Some of the principal flowers were past their best, but Mr. Robert Lord, of Todmorden, was prominent on this occasion, gaining the principal prizes for the "pan" blooms, and taking more prizes in the classes for single blooms than all the other exhibitors collectively. One thing remarkable in Mr. Lord's Carnations was the large size and rich colours of the bizarres. Such splendid blooms of Admiral Curzon were never seen before. Mr. Flowdy, Gateshead, came next to Mr. Lord. His collections were remarkable for the high quality of the pink and purple bizarres, Sarah Payne and Falconbridge being very fine. The same exhibitor had splendid blooms of a Picotee raised by himself, viz., Thomas William (red edge). A bloom of this variety gained the prize "premium" as the best bloom of a Picotee in the whole exhibition. The best Carnation was a bloom of Mr. Robert Lord's Admiral Curzon. Mr. Thomas Bonner, of Bradford; Mr. Rudd, of Bradford; Mr. T. Mellor, Ashton-under-Lyne; Mr. Simonite, of Sheffield; Mr. S. Barlow, of Stakehill; Mr. R. Scott, Newcastle-upon-Tyne; Mr. Beswick, of Middleton; Mr. Chadwick, Dukinfield; and Mr. W. Taylor, Middleton, were also exhibitors. The varieties shown were very much a repetition of those seen at South Kensington rather more than a month previously. Mr. Lord exhibited a number of the beautiful Carnations and Picotees raised by Mr. E. S. Dodwell, of Larkhall Rise, which materially helped to place him in the high position he gained. The best scarlet bizarres were Admiral Curzon (Easom), Robert Lord (Dodwell), George (Dodwell); crimson bizarres—Lord Wilton (Ely), Shirley Hibberd (Dodwell), a very fine bloom, Rifleman (Wood), Albion's Pride (Headly), and Eccentric Jack (Wood); pink and purple bizarres—Sarah Payne (Ward), Falconbridge (May), Unexpected (Turner); purple flakes—James Douglas (Simonite), Earl of Wilton (Holland), Sporting Lass, a spark from Sarah Payne, Squire Meynell (Brabbin); scarlet flakes—Sportsman (Hedderly), Wm. Harland (Flowdy), Clipper (Fletcher); rose flakes—Lovely Ann (Ely), Mrs. Dodwell (Lord), John Keet (Whitehead), Maid of Athens (Hepworth). Picotees, heavy red edges—John Smith (Bower), Brunette (Kirtland), J. B. Bryant (Ingram); light red edges—Thomas William (Flowdy), Elsie Grace (Dodwell), Violet Douglas (Simonite); heavy purple edges—Mrs. Summers (Simonite), Zerlina (Lord), Mrs. Vinen (Morris), and Medina (Fellowes); light purple edges—Minnie (Lord), Ann Lord (Lord), Mary (Simonite), and Silvia (Simonite); heavy rose edges—Fanny Helen (Vinen), Edith Dombain (Turner), Miss Horner (Lord); light rose edges—Mrs. Alcroft (Turner), Teresa (Simonite), Miss Wood (Wood).

### NATIONAL ROSE SOCIETY.

This society also held its autumn provincial show in connection with the international exhibition. It was well supported by the principal Rose growers, though the blooms could not be expected to be so good as they are in the summer, even if the weather had been favourable previous to the exhibition, which it was not. Prizes were offered in the nurseryman's class for 48 distinct Roses, and the first prize was gained by Messrs. Robert Mack & Son, North of England Rose Nurseries, Catterick Bridge, with good blooms, nearly all of the Hybrid Perpetual class, consisting of Marie Baumann, Gen. Jacqueminot, Annie Wood, Dr. Andry, Sir Garnet Wolseley, John Stuart Mill, Mad. Bravy, Duke of Wellington, and Alfred K. Williams. Catherine Mermet was fine as a Tea in this stand. Messrs. Paul & Sons, The Old Nurseries, Cheshunt, also exhibited a very beautiful collection, containing a large proportion of Tea Roses. The best of them were Clothilde, Jean Ducher, Perle des Jardins, Niphotos, Marie Van Houtte, Madame Welch, and Madame Willermoz. There were good trusses of Roses shown in trebles by the same exhibitors, and also by the Cranston Nursery Company, Hereford. Tea Roses also in trusses of three blooms were exhibited,

Messrs. Mack were again placed first, which was surely an error of judgment on the part of those who awarded the prizes. Messrs. Mack's flowers were largest, but they were rough, and not nearly so refined as the beautiful stand exhibited by Messrs. Paul, which for the season were in every way excellent. The best blooms in the two collections were Madame Berard, Madame Lambert, Rubens, President, Perle des Jardins, Catherine Mermet, Madame Hippolyte Jamain, Madame Bravy, and Souvenir d'un Ami. In the amateur classes there were some very beautiful Roses exhibited. Mr. T. B. Hall, Larch Wood, Rock Ferry, Cheshire, exhibited remarkably fine blooms in the class for 36 and 24 distinct Roses. Amongst local exhibitors Mr. Samuel Barlow, of Stakehill House, Slattscocks, and Mr. J. Brown were most prominent.

### CRYSTAL PALACE FRUIT AND FLOWER SHOW.

AUGUST 29, 30, 31.

THE annual fruit show this year, though not so extensive as we have seen it formerly, was a fair display, and, on the whole, the quality of the exhibits was creditable, in some instances particularly fine.

THE COLLECTIONS of twelve kinds were only four. The best of these, from Elvaston Castle, was similar to that showed by Mr. Goodacre last week at Manchester. There were first-rate Black Hamburgh and Canon Hall Muscat Grapes, the latter particularly fine in bunch and berry, but, of course, not so bright in appearance as Muscat of Alexandria. Two heavy Pines, a Queen and a smooth Cayenne, fair fruits of Violet Hâtive Peaches, good Lord Napier Nectarines, and Hero of Lockinge, a luscious and melting Melon, were among the most noteworthy of the other dishes. Some superb bunches of Madresfield Court and Golden Champion Grapes were in Mr. Roberts' collection, as well as fine fruits of William Tillery and Golden Perfection Melons and Barrington Peaches. In the other collections Grapes were uniformly fine, especially the Black Alcantes from Badminton Gardens, which were excellent in every respect. Summer Franc Real Pear, a medium-sized attractive sort, was shown; and of Apples, Irish Peach and Duchess of Oldenburg, by Mr. Roberts, large and highly coloured, but both sorts seemed as if they had been grown under glass in order to get them in condition.

The sets of nine were more numerous, there being seven competitors, and the first three had some remarkably fine productions. From the Marchioness of Lothian's garden at Blickling Hall came the finest. There were creditable Madresfield Grapes, excellent Acton Scott Peaches, a handsome sort above average size; Pitmaston Orange Nectarine and Hero of Lockinge Melon, finely netted, a contrast to some other fruits of the same sort shown, which were quite smooth and of a golden hue more like Golden Gem. The Pears were not ripe, a circumstance attributable to the climate. The second, from Wycombe Abbey, was scarcely inferior in merit; indeed, some of the dishes were a long way superior to the Norfolk grown lot. The Pitmaston Duchess Pears were excellent; the Bellegarde Peaches and Lord Napier Nectarines the best in the show. The Hamburgh Grapes were fair, as were Easton Castle Melon and Magnum Bonum Plums. Morrello Cherries were likewise large and well coloured. In the other collection were Princess of Wales Peach, shown by three exhibitors, and from Bletchingley and Winchfield very finely. Quarrenden Apples, both the red and the Devonshire, were excellent, but some of the other dishes were below mediocrity; and on the second day the soft fruits showed but too plainly the ill effects of bad packing.

Grapes were shown numerously in most of the classes, and on the whole in fine condition. The class for two bunches of six kinds was particularly well represented, there being about a dozen competitors. The best collection, from the Duke of Beaufort's garden, contained excellent



black kinds, but the Muscats were inferior. Lady Downes were fine in berry, highly finished, and in fair sized bunches. Muscat Hamburgs were the best of the six, and exemplified high class culture in a striking degree. Black Alicantes were perfect in every respect, but the Black Hamburgs were uneven in quantity of berry. In the second, Gros Maroc and Trebbiano were shown in their true character, though not of unusual size. Lady Downes, too, were excellent, and the Alexandrian Muscats large, but not well coloured. These were from Wycombe Abbey. Alnwick Seedling, that much-commented-on sort, was shown as the raiser (Mr. Bell) has shown it by the Duke of Northumberland's gardener at Syon. Grown thus, it is a handsome Grape, fine in berry, and of excellent colour, and with that thick overlay of bloom which adds so much to the appearance of a Grape. Mr. Woodbridge evidently has either the true form (if true and false there be), or he knows how to manage the Grape better than most gardeners who have tried it. From the same garden came also Golden Champion with as fine berries as "The Duke," excellent Foster's Seedling, and Madresfield Court. In the other collections we noted Gros Colmar, as handsome in appearance as it can well be, but there was no indication by whom it was grown. The same collection also contained the Duke of Buccleuch, though not in large bunches, fine in berry, and of that semi-transparent amber which is such a desirable quality in white Grapes. The Madresfield Court and Black Alicantes from Stuart's Hill, Beckenham, were excellent, but the other bunches did not support them well. It was interesting to observe in what a variety of conditions that excellent sort Foster's Seedling was shown; some had it as green as Gooseberries, others with the soft transparent lustre so characteristic of the Grape when well done. The majority of the Alexandrian Muscats looked as if they had better hung on the vines for a few more weeks. The class for ten kinds was a good one. The best, from Elvaston Castle, contained some excellent products. Pearson's Golden Queen was large in bunch, but the variety always appears to us to possess a forbidding appearance, like an unripe Plum. It does not attract by the brightness that characterises the best of the other white Grapes. Gros Colmars were perfect, scarcely a berry being rubbed, or otherwise injured, by such a long journey. Canon Hall Muscat seems a favourite with Mr. Goodacre, for he showed it here as well as in his collection of fruit. The Alicantes and Madresfield Court left little to be desired. The only other collection was that from Berkhamstead Nurseries. The best in this were the fine Barbarossa, Gros Colmar, and Madresfield Court, but on the whole Messrs. Lane were scarcely up to their usual high state of perfection.

The classes for special kinds were for Madresfield Court, Alicante, Muscat of Alexandria, Gros Colmar, and Black Hamburg, though there were very few competitors in either. The finest Alicantes were grown by Mr. Elphinstone, Shipley Hall, Derby, a young Grape grower who is becoming one of our most prominent exhibitors. His productions on this occasion were of a similar high quality as those he showed at Manchester, and we need scarcely say they are marvels of skilful culture, far excelling the exhibits of his rivals, though the two best of the six other exhibitors of this sort showed the Grape in excellent condition. There were eight exhibitors of three bunches of Madresfield. The three placed first were large, but the colour, which in the opinion of most of the judges is the paramount quality, was conspicuously deficient, and the second lot with smaller bunches possessed the quality and high finish that renders this Grape above all others so fine. The Gunnersbury Park bunches are scarcely up to their usual high standard this season, although the examples shown were as regards colour the best of all.

Of the seven collections of Black Hamburg, only one was remarkable for more than average quality. This was from Badminton, and though we have seen large bunches this season, it would

be scarcely possible to have better fruit in other respects. Gros Colmars were shown by four, the Shipley Hall bunches being the finest, the bunches being broad, the berries plump and large and of perfect finish. The least said about the Alexandrian Muscats the better, for even the visitors did not express a wish to eat them.

**Peaches and Nectarines.**—These were much out of proportion in point of numbers to the Grapes, neither was the quality so high. Whether the judges were led away by size we cannot say, but they put the biggest fruit first. These were half a dozen fine fruits of the Princess of Wales, from West Park. Though a large sort, it is generally deficient in colour, and in our opinion inferior in flavour to others. The eight collections of three kinds contained some fine fruits, and some that would scarcely be bought by a third-rate fruiterer. The best three dishes were from Elvaston Castle, and were uniformly fine, Royal George, Noblesse, and Bellegarde being the sorts, all large and highly coloured. In the second were fine Barringtons and Princess of Wales. Dr. Hogg and Early York were included in the other, but if no better than exhibited, it would have been better had they remained in obscurity. The Nectarines were of rich colour, but not remarkable for size. The Pine-apple, Violette Hâtive, and Lord Napier were the three best of the single dishes. Prince of Wales is a handsome sort. Lord Napier and Victoria were shown from Haigh Hall, but the fruits were unripe. The best of the collections of three contained Pitmasdon Orange, Lord Napier, and Elruge, and other kinds shown finely were Pine-apple, Stanwick, and Violette Hâtive.

**Pine-apples** were few, but of high quality; a superb smooth Cayenne from Wycombe Abbey is the finest we have seen this season; and from Gunnersbury Park came an excellent Queen; and Mr. Miles showed a big and finely-formed fruit in the class for one of any other kind.

**Melons.**—Some thirty of these were shown. William Tillery, a fine fruit from Gunnersbury Park, was the best of the green-fleshed, and the same sort took the second, while Bailey's green-fleshed, by no means a handsome fruit, was third. If the judges had not adjudicated upon the "proof-of-the-pudding" principle, the prizes would have been awarded to the handsome-looking fruits. The best of the fourteen reds was Read's, grown by Mr. Miles; the same sort from Stisted Hall was second, and Hero of Bath was third. Other kinds shown well were Blenheim Orange, Golden Queen, and Hero of Lockinge. Read's was shown by several. Messrs. Cheal showed two large and handsome fruits of Shepherd's Perfection and another of Mr. Shepherd's seedlings, both of which were good in flavour, but scarcely so delicious as their Crawley Paragon.

**Plums.**—These were excellent and numerous, and being shown from widely separated districts indicating that the Plum is everywhere in good condition this year. The finest three dishes, from Lord Cowper's garden, at West Park, were of Washington, Fonthill, and Magnum Bonum. Remarkably fine Kirke's, Jefferson, and Washington were next, and Emperor, Belgian Purple, and Jefferson third. Diamond, Victoria, Belle de Septembre, Myrobella, and Murschelle were among the other six collections shown. Green Gages were poor, and of the dozen single dishes Pond's Seedling, Belgian Purple, and Bradshaw were the best.

**Miscellaneous class.**—This was not a numerous one. Among fruit was the new seedling Grape named Ollerhead's White, shown by the raiser from Sir Henry Peck's garden at Wimbledon House. "It was raised by crossing Foster's Seedling with Muscat of Alexandria. It is equally as early as Foster's, and hangs a very much longer time. It is one of the freest setting Grapes in existence, the greatest trouble being to thin the fruit in their early stages of growth." Such is the character sent forth with this new aspirant to public favour, but as we did not taste the fruit we shall reserve our opinion till we do. It is much like Foster's, but with broader shouldered bunches.

Messrs. Laing showed from the new Grape nurseries some excellent produce of Black Alicantes, scarcely inferior to any in the show; excellent Foster's of the brightest amber hue, as well as some creditable Madresfield Courts.

A good collection of Apples from Mr. Valentine Wallis, Farningham, was shown, containing some excellent sorts. A collection of Plums from Mr. Fanning, Roehampton, and a miscellaneous collection of fruit from Mr. Wythe's garden, Bickley, were commendable.

**Cut flowers.**—The Gladioli, from Langport, formed as usual at the autumn fruit show one of the chief attractions, so numerous and fine were they in every respect. The supply of new sorts which annually come from the nurseries seems inexhaustible. Messrs. Kelway were the only exhibitors. Dahlias were shown in small numbers, but remarkably fine, by Mr. Turner, from Slough, and Messrs. Cannell, Swanley, and the latter exhibitors had a fine collection of bouquet and single varieties, including a new single white, a lovely flower, together with Pelargoniums. Verbenas and African Marigolds were exhibited in the superb way as usual from these nurseries. Some fine Dahlias also came from Messrs. Rawlings, of Romford, and one, a fine deep maroon, of beautiful form, was considered worthy of a certificate. A collection of cut hardy flowers was shown by Messrs. Cheal, Lowfield, Crawley, who seem to be taking up these popular flowers largely, a plain proof that the demand for them is daily increasing.

**Dinner-table decorations, &c.**—This department of the show was as devoid of novelty as possibly could be, at least as regards a new movement in the right direction, for some of the exhibitors, thinking no doubt to deviate from the conventionalities of table adornment, went so far as to make a hideous display, in which china and glass formed the principal objects. One of the central pieces reminded one of a butter cooler stuck upon an imitation of a Grecian temple, about as inartistic an arrangement as could possibly be conceived. Some of the other tables showed but too plainly that their arrangers had an eye to displaying the contents of the china and glass shop rather than the neat and graceful arrangement of flowers. The three best tables, or at least those that were placed first, were pretty in their way, gracefully adorned with a great variety of slender-growing subjects. The stands were of the usual inverted trumpet style, and it seems as if no other form is beyond the conception of the china manufacturers.

#### Awards of the Judges.

##### FRUIT.

Collection of fruit, to consist of 12 dishes.—1, Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby; 2, Mr. John Roberts, gardener to the Baroness L. de Rothschild, Gunnersbury Park, Acton; 3, Mr. H. A. Mann, gardener to Mrs. R. Hornsby, St. Vincent's, Grantham.

Collection of fruit, to consist of 8 dishes, exclusive of Pine-apples.—1, Mr. Ocele, gardener to the Marchioness of Lothian, Blickling Hall, Aylsham, Sussex; 2, Mr. G. T. Miles, gardener to Lord Carington, Wycombe Abbey, Bucks; 3, Mr. C. J. Goldsmith, Sandhills, Bletchingley.

Collection of Grapes, 10 kinds.—1, Mr. J. H. Goodacre; 2, Messrs. H. Lane and Son, Berkhamstead.

Collection of Grapes, 5 kinds.—1, Mr. W. Nash, gardener to His Grace the Duke of Beaufort, Badminton, Chippenham; 2, Mr. G. T. Miles; 3, Mr. J. Woodbridge, gardener to His Grace the Duke of Northumberland, Syon House, Brentwood.

Grapes, Black Hamburg.—1, Mr. W. Nash; 2, Mr. Thos. Jones, gardener to Lord Calthorpe, Elvetham Park, Winchfield, Hants; 3, Mr. John Roberts.

Grapes, Muscat of Alexandria.—1, Mr. C. J. Goldsmith; 2, Messrs. H. Lane and Son; 3, Mr. Thomas Jones.

Grapes, Gros Colmar.—1, Mr. W. Elphinstone, Shipley Hall, Derby; 2, Mr. George Tucker, gardener to J. L. Lovibond, Esq., Starts Hill, Farnborough, Beckenham; 3, Messrs. H. Lane and Son.

Grapes, Madresfield Court.—1, Mr. C. Crump, gardener to H. Harris, Esq., Stevenon Manor, Micheldever, Hants; 2, Mr. George Tucker; 3, Mr. John Roberts.

Grapes, Black Alicante.—1, Mr. W. Elphinstone; 2, Mr. W. Nash; 3, Mr. C. J. Goldsmith.

One Pine-apple, Queen.—1, Mr. John Roberts; 2, Mr. J. H. Goodacre.

One Pine-apple, Smooth Cayenne.—1, Mr. G. T. Miles.

One Pine-apple, of any other kind.—1, Mr. G. T. Miles.

Peaches, 3 dishes, distinct kinds.—1, Mr. J. H. Goodacre; 2, Mr. Thos. Elsworthy, gardener to A. R. Gladstone, Esq., Court Hey, Liverpool; 3, Mr. C. J. Goldsmith.



Nectarines, 3 dishes, distinct kinds.—1, Mr. J. H. Goodacre; 2, H. A. Mann; 3, Mr. A. Jamieson, gardener to the Right Hon. the Earl of Crawford and Balcarres, Haigh Hall, Wigton.

Peaches, 1 dish.—1, Mr. George Ford, gardener to His Excellency the Earl Cowper, K.G., West Park, Bedfordshire; 2, Mr. Thos. Elsworth; 3, Mr. A. Jamieson.

Nectarines, 1 dish.—1, Mr. J. Woodbridge, gardener to Jas. Morris, Esq., Castle Hill, Bletchingley; 2, Mr. Ocle; 3, Mr. J. Bolton, gardener to W. Spottiswoode, Esq., Combe Bank, Sevenoaks.

Melon, green flesh.—1, Mr. John Roberts; 2, Mr. J. Bolton; 3, Mr. James Dean, gardener to G. W. Levison Gower, Esq., Titsey Place, Limsfield.

Melon, scarlet flesh.—1, Mr. G. T. Miles; 2, Mr. O. Bishop, gardener to O. S. Onley, Esq., Stisted Hall, Braintree, Essex; 3, Mr. N. Kneller, gardener to W. S. Portal, Esq., Malshanger Park, Basingstoke.

Plums, 3 dishes, distinct kinds.—1, Mr. George Ford, gardener to Earl Cowper, West Park, Bedfordshire; 2, Mr. James Fry, gardener to L. J. Baker, Esq., Haydon Hall, Eastcote; 3, Mr. James Bolton, gardener to W. Spottiswoode, Esq., Combe Bank, Sevenoaks.

Plums, Green Gage.—1, Mr. J. Fry; 2, Mr. J. Bolton; 3, Mr. George Goldsmith, Hildenboro', Tonbridge.

Plums, purple or red.—1, Mr. James Dean; 2, Mr. J. Fry; 3, Mr. George Holliday, gardener to James Norris, Esq., Castle Hill, Bletchingley.

#### CUT FLOWERS.

Forty-eight Dahlias, show (open).—1, Mr. C. Turner, Royal Nurseries, Slough; 2, Messrs. H. Cannell and Son, Swanley, Kent.

Twenty-four Dahlias, fancy (open).—1, Messrs. H. Cannell and Son.

Twelve Dahlias, show (amateurs).—1, Mr. H. Glasscock, Rye Street, Bishop Stortford; 2, Mr. G. K. Wright, gardener to the Rev. J. Watson, The Vicarage, Church Road, Upper Norwood.

Twelve Gladioli Spikes (open).—1st, Messrs. Kelway and Son, Lancaster, Somerset.

Miscellaneous class, extra Prizes to.—Mr. A. Lunt, gardener to H. Clutton, Esq., Camden Hill, Chislehurst, for collection of Asters; Messrs. Kelway and Son, for collection of Gladioli; V. Wallis, Esq., Nightingale Place, Farningham, Kent, for collection of Apples; Mr. J. Neighbour, gardener to G. Wythes, Esq., Bickley Park, Kent, for collection of Fruit; Messrs. Saltmarsh and Son, Nurseries, Chelmsford, for twenty-four French Asters.

#### TABLE DECORATIONS AND BOUQUETS.

Most tasteful Table Decoration (open).—1, Mr. W. L. Buster, St. Mary Cray, Kent; 2, Mrs. Thomas Butcher, florist, South Norwood; 3, Mrs. Bishop, 23, Duppas Hill Lane, Croydon.

Best Bridal Bouquet (open).—1, Mrs. Thomas Butcher; 2, Mr. W. Brown, Richmond, Surrey; 3, Mr. J. F. Chater, 204, Camberwell Road, S.E.

Best Ball Bouquet (open).—1, Mr. W. Brown; 2, Mr. C. Hepburn, Crystal Palace; 3, Mrs. Thomas Butcher.

Six Button-holse Bouquets (open).—1, Mr. W. Brown; 2, Mr. Bishop, gardener to F. Peake, Esq., The Waldrons, Croydon; 3, Mrs. Thomas Butcher.

First-class Certificate awarded to Messrs. Rawlings Bros., Romford, Essex, for Dahlia Geo. Rawlings; Messrs. Kelway and Son, for Gladioli Lord Derby, Meleager, Trojan, and Hercules.

#### HORTICULTURAL SHOW AT HAWLEY HOUSE.

AT the annual show of the Hawley, Cove, and Farnborough Horticultural Society held the other day in the grounds of Hawley House, the cottagers' class was extremely well filled, and the exhibits of good quality. Amongst window plants was a well flowered *Lilium lancifolium*. All the vegetables were excellent, and the Potatoes deserve special praise. There was a very good display of fruit, one or two dishes of Plums being very fine. Pot plants, too, were numerous. H.R.H. the Duke of Connaught kindly gave some prizes of garden tools to the winner of the greatest number of prizes in each district. There was a keen competition for the silver cup, given by the Duke of Connaught for the best collection of stove and greenhouse plants, in which the prize was justly awarded to Mr. C. J. Maxwell Lefroy, Itchell Manor. Had there been a second prize it would undoubtedly have gone to Mr. W. Sherwin, of Farnborough Grange, whose gardener (Mr. Crook) showed some well grown plants. The display of plants and fruits not for competition was unusually large and interesting. H.I.M. the Empress Eugénie, who has recently taken Farnborough Hill, sent through her gardener, Mr. Douglas McLaurin, a very good collection, including some very fine pots of *Eucharis amazonica*, some grand Buckland Sweetwater and Black Alicante Grapes, and an interesting lot of Capsicums in fruit. Mr. W. Sherwin showed Geraniums, and a basket containing many fine plants, among them being the charming Duchess of Edinburgh Rhododendron, Tydæa Robert the Devil, and a choice Be-

gonia Mrs. Laing, with remarkably large, well-formed, pure white flowers.

**Royal Horticultural Society.**—*Fruit and Vegetable Committee.*—Meeting at Chiswick, August 19.—The collection of Potatoes was examined, and the following varieties were highly approved for cropping qualities and handsome appearance: Lye's Prolific, Garnett's Seedling, The Druid, No. 1 (Fenn), No. 3 (Fenn), Avalanche, Alderman, No. 6 (Fenn), Surrey Gate-post, Beauty of Kent, Farren's No. 1, Foster's Seedling, Standard (Fenn), Lord Mayor, American Seedling, Bedford Prolific, Matchless, White Emperor, Criterion, Manhattan, No. 5 (Fenn), Mr. Bresee, Alpha, Triumph, No. 30, Rand's Seedling (Bliss). *First-class Certificates.*—On being subjected to the test of cooking, the following were awarded First-class Certificates: Garnett's Seedling, a large flat white kidney; Standard (Fenn), a medium-sized round white; Lord Mayor (Dean), a very handsome rough-skinned white; Foster's Seedling, a large white round rough; No. 5 (Fenn), a large very handsome pale red kidney, resembling Mr. Bresee, remarkably fine in quality; Matchless (Bliss), a half round, very handsome pale pink American variety.

#### NOTES FROM NEWRY.

**Calceolaria pinnata.**—This has become a weed here. It sows itself, and comes up amongst other things. We just let it alone, finding its prettily cut leaves and lemon-coloured flowers very useful for cutting. The best feature of such plants is that one is not afraid of lopping off a big piece, which helps to fill up the flower basket.

**Acæna Novæ-Zelandæ.**—This is one of the most distinct and valuable of all carpeting plants for the rock work. Its curious bristly bright crimson flower heads are produced in such abundance as to quite cover the plant, and, being of such long duration become doubly valuable. It comes from New Zealand, and no cold seems to hurt it in the least.

**Goldfussia amellioides.**—This old inhabitant of gardens we always grow a few of not so much an account of its pale blue tubular flowers which are produced in the dull winter months, but because when put outside in the summer its leaves become a shining black, and being narrow and numerous, the plant has a much nicer appearance than Perilla and the usual funeral plants with dark leaves one sees.

**Venidium calendulaceum** is one of the best and freest growing annuals we have here in good soil some of the plants of it are as much as 2 ft. high by 3 ft. through resting like a huge rosette on the ground, and producing for months and months, their shown orange-coloured flower, in the sunshine are brilliant indeed.

**Coreopsis lanceolata** grows 3 ft. high here, and produces bright yellow star-like blossoms in great abundance.

**Enothera taraxacifolia.**—In your note last week anent this beautiful plant you only mentioned the lovely pink colour of the blossoms. This is only the last condition of them. At first they open pure white and towards noon assume the pink colour. I send a few buds, which I hope may open with you, and allow you to witness the change from one colour to the other.

**Hypericum multiflorum.**—This is one of the best of the free growing forms of St. John's-wort, much dwarfer and more spreading than *H. hircinum* or *H. androsaemum*. The great charm of this is that it blooms for a long period, and one has from the first the brass-like buds, the yellow flowers, the seed-pods first bright vermilion, gradually changing to deep red, and ultimately nearly black. After the first week or so one has all this variety at the same time. How much better such things are than those which come in bloom for a week or so and not seen again before the next year.

**Antennaria sp.** is a rather nice plant; placed at the foot of a wall, it is quite hardy, grows from 2 ft. to 3 ft. high, and produces rather large heads of white everlasting flowers. Its narrow bright green leaves covered on the underside with white felted down are ornamental even when the plant is not in flower. T. SMITH.

**Onychium japonicum.**—To the Ferns mentioned (p. 180) for growing in a north window this should be added. It is evergreen, and has finely divided fronds, and is nearly hardy, all that is necessary being to keep it from absolute frost. It also throws up its young fronds so freely that the plant is always fresh and in good condition.—P. H.

**Dimorphanthus mandschuricus.**—To the permanent fine foliaged plants for the flower garden mentioned (p. 223) I would add *Dimorphanthus mandschuricus*; its large compound leaves are so effective, and the plant pushes up so strongly from the old stool when cut down, that it would form, I should say, one of the best of plants for the purpose just indicated.—ALPHA.

**Shrubs for a north wall.**—Having found that the severe frosts of spring repeatedly injured the bloom of *Weigela rosea*, I determined to try it on a north wall, where it would escape the serious effects of sunshine after severe frost. In such a position it flowers uninjured, though somewhat later than in a warmer aspect. *Berberidopsis corallina* I have grown alongside successfully, and also the double white *Deutzia*.—J. T. POE.

**New varieties of Ceanothus.**—Some of the new varieties recently introduced by M. Lemoine, of Nancy, well deserve the attention of planters. Mr. Barron has planted out a collection at Chiswick, and being in full bloom, a good opportunity is afforded of studying their characters. *Gloire d'Evaile* is one of the best, bearing large branching spikes of pale blue flowers, very fine and good, and there is *Bleu Celeste*, a little paler in colour—quite enough to constitute it a variety, also very good. *Marie Lemoine* is one of the pink flowered varieties, distinct, and very pleasing in association with the blue-flowered forms; and there is *Le Géant*, also pink, but a little paler in colour. In the sub-tropical garden, and against warm sunny walls where protection can be given during the winter, these varieties of the *Ceanothus* well deserve a place.—R. D.

**Marigolds at Manchester.**—As a grower of African and French Marigolds, I looked for the flowers of those staged for prizes at Manchester the other day with considerable interest, and in the end with some disappointment. Only one lot of the large Africans was really good, and of these I noted but the two old-fashioned shades lemon and orange. Most probably the northern growers of these fine old garden flowers are not aware that some four or five distinct yellow shades may now be had in flowers of large size and quality. I have lemon, pale yellow, golden, and bright and deep orange. The Manchester schedule, somewhat loosely worded, asked for 12 blooms, distinct. Of course, that was a slip of the pen, as 12 distinctive flowers could not be found. The French Marigolds also were to be distinct; but I noted that the judges went, as northern judges always do, for striped blooms only; therefore the dozen in the first prize lot were all alike. In other dozens colour and markings varied, and there was more size, but everything, it would seem, had to give place to the one requirement, viz., properly striped. As florists' flowers, I might say fortunately the summer Marigolds are not much grown, but then they are not half enough grown for ordinary borders and garden decoration. Amidst the recent rains the flowers looked bright and effective. The dwarf French strain—plants 12 in. high and covered with fine double blooms—are singularly pleasing and gay. No one would grow the tall loose growing sorts who had once given these a trial. For continuity of bloom I think they excel all other annuals.—A. D.



## THE FLOWER GARDEN.

## THE GAILLARDIAS.

THESE, though constituting a small genus, are of great importance in the flower garden, producing as they do some of the showiest of flowers, alike valuable for their long duration on the plants and in a cut state. The genus is wholly confined to North America, and numbers some half-a-dozen species and numerous garden varieties. It is one of those classes of plants about the names of which there is always some confusion. The numerous kinds now in English gardens appear to fall under three species, but there is a strong family likeness running through the whole series. The kinds are

*G. ARISTATA*, a perennial growing from 1 ft. to 1½ ft. high, with somewhat narrow leaves sometimes deeply cut. The flowers are from 1½ in. to 4 in. across, the ray florets having an outer zone of orange yellow and an inner one of

*G. BICOLOR* and *PINNATIFIDA* are the other two species, but they are both seldom met with in gardens, owing, probably, to their being somewhat tender. The garden varieties, as has been stated, are numerous, but the most distinct of those that have been named are

*G. GRANDIFLORA*, said to be a hybrid, presumably between *G. picta* and *G. aristata*. It is a beautiful plant of vigorous growth, with large and brightly coloured flowers, which are only surpassed by the variety *maxima*, represented by the accompanying woodcut. This flower is in no way exaggerated with regard to its size, and the colour is particularly bright, and the zones well defined. It is by far the finest of all the Gaillardias.

*G. HYBRIDA* is another garden cross much resembling the preceding; the variety *splendens* differs in having brighter tinted flowers. *G. Telemachi*, *Drummondii*, *Loiselli*, and *Bosselari* appear to be synonymous with some of the preceding, and *G. Richardsoni*, another so-called

and a full display of their fine flower-heads obtained as early as upon those which may have withstood the winter in the borders. They are propagated by cuttings in autumn or spring in the manner of general bedding plants, and by division in spring, assisted afterwards by slight heat if the locality is a cold one. The annual kinds might easily be propagated by means of cuttings, and plants thus obtained make far finer plants than seedlings. W. G.

## A MIXED BORDER.

THE mixed border in my garden is now gay with hardy herbaceous plants and with self-sown annuals; from year to year it costs me nothing; as each plant ceases blooming I reduce its proportions as much as is necessary; the rapidly spreading ones I cut into shape with a Dutch hoe. I am careful to see that everything has sufficient space, and that nothing is smothering its neighbour; when seedlings appear where I do not want them I put them where I do. After having had some 150 different plants from January to the present time in bloom, the following now make my garden gay, viz.: *Gloire de Dijon* Roses on the divisional wall; also *Clematis Jackmani* and the wild *Clematis*, which I keep cut back very close; its blossoms are invaluable for table and drawing-room decoration; lovely in a specimen glass with *Gloire de Dijon* Rose, the buds are very chaste. Associated with these are *Virginian Creeper* already turning crimson, *Japan Honeysuckle*, pink *China* Roses, and white *Jessamine*, a few sprigs of which make any nosegay prettier. The foliage of various Roses and creepers now out of bloom give every variety of green and occasional patches of pink; and besides we have *Everlasting Peas*, *Canary Creeper*, and *Sweet Peas* of various shades, all of which are bright and graceful. These are on the wall which forms a background to my border. Then in the first row come *Sunflowers* and pink *Balsams*, which begin to branch from the root and go on until they nearly reach the height of the *Sunflowers*; the stems are rosy and transparent and very waxy in appearance, as are also the flowers; the singular arrangement of their seed vessels enables them to shoot out their seeds to long distances off; therefore when once in a garden they are apt to run riot, but the seedlings are so striking that it is an easy matter to distinguish them, pull them out and throw away, or transplant any that are in undesirable places. In the second line are *Souvenir de Malmaison* Roses, *Althæas*, pink and yellow *Lupines*; the latter, which, in rich soil, form bushes of considerable size, in any sandy border keep well within bounds; they produce large quantities of very beautiful seeds which grow freely. Along with these are pink *Japan Anemones*, an occasional pink or crimson *Poppy*, perennial *Phloxes* of every shade—rose, lilac, white, and two-coloured, which last in bloom a long time; double white *Pyrethrums*, and occasionally a *Polystichum* and *Lady Fern*; although the *Lady Ferns* are rare as wild plants in this neighbourhood, when planted they grow as finely as any I have seen in Devon or Cornwall. This year they keep throwing out fresh fronds, some of which are beautifully variegated. I have also *Globe Fuchsias* kept in drooping form as much as possible; *Lavenders*, round and compact; rose *Agrostemmas*, with pretty grey foliage; the old-fashioned *Bergamot*, a delicate shade of mauve and with leaves deliciously fragrant; double white *Everlastings*; crimson *Snappedragons*; purple *Comfrey* and *Borage*. In the third line are purple *Speedwells*; pink *Campanulas*, kept in successional bloom by removing all seed vessels; patches of double and single, buff and lemon *Marigolds*; double white *Pyrethrums*, and again white *Japan Anemones*. Here are, moreover, masses of *Mignonette*, which has been luxuriant beyond precedent this year; *Nasturtiums* in patches of various colours, and yellow *Snappedragons*. Finally comes a line of patches of plants raised from mixed seeds, between which is



*Gaillardia grandiflora maxima* (natural size).

brownish red, while the centre is a deep bluish-purple. This is the commonest kind, and as it has been raised largely from seed, consequently there are many seminal varieties differing more or less widely from the type and variously named.

*G. PICTA*.—This somewhat resembles the preceding, but may be distinguished by its smaller flowers, and especially by its being only of biennial duration. It is, moreover, dwarfer than *G. aristata*, and the colours of the flowers brighter.

*G. AMBLYODON* is a beautiful annual from Texas, introduced to our gardens a few years ago by Mr. Thompson, of Ipswich. Its flowers are smaller than those of either of the preceding, and the colour is a deep cinnabar red. They are produced plentifully on strong plants for several weeks towards the close of summer.

*G. PULCHELLA* is the oldest cultivated species, having been introduced about a century ago. It grows from 1 ft. to 1½ ft. high, and bears flowers 2 in. across of a bright yellow and purplish-red colour. It is only of annual duration, and now seems to have become very scarce. It is known by various other names.

species, scarcely differs from them, considered from a horticultural standpoint.

**CULTURE AND POSITION.**—All the kinds mentioned above are well worth growing, though two or three well selected kinds would suffice for all the rest if a collection was not the point in view. For instance, *G. grandiflora* and *maxima*, *G. amblyodon* and *G. picta* are representative sorts, but where raising hardy plants from seed is not pursued, the perennial kinds had better be grown. All thrive in ordinary good garden soil of a light friable character, but they refuse to thrive on a cold stiff soil or one that is excessively light and dry. Where possible they should be grown in bold masses, for they thrive better so placed than as solitary plants in a parched border, and there are no plants that have a finer effect in a bed by themselves than the various kinds of these showy Composites.

Where they are apt to die in winter they may yet be used in mixed borders treated as half-hardy annuals, for if sown in a mild hotbed at the end of February or the beginning of March, they may be grown into good plants,



the foliage of various spring plants. Originally I sowed a packet of mixed seeds which produced some 30 species of plants that keep on blooming and are great favourites. Is it generally known what a very pretty margin for cut flowers the foliage of the Tansy makes? A cross, edged with it and filled with scarlet Pelargonium, is perfection. Little or no earth is to be seen in my border; Sweet Woodruff, Wood Laurel, Stonecrops, Violets, and seedlings of numerous spring flowers clothe the ground with a green carpet; but I allow no choke mudde. MARK.

Red Hill.

#### PLANT RARITIES AT EDINBURGH.

SOME of the rarest plants about Edinburgh are in Mr. Anderson-Henry's collection at Hay Lodge. The following, amongst many others, have been introduced by him, viz., *Tacsonia quitensis*, from Ecuador, a greenhouse plant with beautiful pink flowers, succeeded later in the season by large yellow fruit; a *Maurandia*, from parts unknown, with a larger flower than that of *M. Barclayana*, and of a much deeper shade of purple; *Senecio Sinclairi*, from New Zealand, the only plant as yet in this country; it has large, oval, leathery leaves, very woolly at the back; and *Calceolaria Sinclairi*, having white flowers spotted with pink, and of the same section as *C. violacea* (Jovellana, its former name). The former and one other insignificant kind represent this genus in New Zealand. The same collection also contains *Androsace incisa*, a beautiful species from mountains above Rawul Pindee, with white flowers gradually shading to pink as they grow older. This promises to be an excellent kind for the rock garden. *Fuchsia ampliata*, from Quito; *Monardella odoratissima*, a very fragrant plant; a species of *Salvia* from Afghanistan; *Shefferia digitata* from New Zealand, having an Ampelopsis-like leaf; *Monochætum sulphureum*, from the Andes of Ecuador, a new introduction which has not yet flowered; and *Monochætum sarmentosum*, introduced some years ago from the Andes. A new *Cortusa* also comes from Afghanistan. Mr. Anderson-Henry thinks it has been erroneously regarded as *C. Matthioli*, from which it differs considerably, both in flower and leaf. *Pratia macrodon*, *P. perpusilla*, and *Mimulus radicans* come from New Zealand, as do also *Wahlenbergia gracilis* and *W. saxicola*. The latter, the New Zealand Bluebell, somewhat resembles the white form of the Bluebell of Scotland (*Campanula rotundifolia*), but it has a narrower throat and more deeply cut segments—a very pretty flower. I also noticed *Lavatera cashmeriana*, with fragrant flowers; *Rheum Moorcroftianum*, *Morina Coulteriana* (yellow), and *M. Wallichiana* (pink), all quite hardy, as are also *Vaccinium montanum* from Ecuador, *Veronica anomala*, *V. Haastii*, growing at very high elevations, *V. Lavaudiana*, *V. ligustrifolia*, *V. pimelcoides*, *V. Kirki*, the latter growing at an elevation of 4000 ft. All these Veronicas are from New Zealand, and are shrubby kinds, having most of them very small leaves. Some have not yet flowered in this country. Another new introduction is *Veronica chathamica*, from Chatham Island, also found in New Zealand. None of these Veronicas resemble in the least that most curious of all kinds, *V. salicornioides*, which appears to be perfectly uninjured even by such a winter as the last has been. Amongst some of the numerous hybrids raised by Mr. Anderson-Henry is a *Campanula*, named *G. F. Wilson* (*C. turbinata* crossed with *C. pulla*), which will be even a more valuable addition to Campanulas for rockwork than *C. Haylodgensis* has been; also a hybrid between *Haylodgensis* and *Waldsteiniana*, with something of the wire-like character of the latter. I saw, likewise, a *Monochætum* (ensiferum crossed with some other species) and a very distinct *Primula* (rosea crossed with *cashmeriana*) which has the leaves and form of flowers of *P. rosea*, but the blossom purple. Its leaves are slightly sweet scented, though those of both *P. rosea* and *cashmeriana* have a decidedly disagreeable smell.

But perhaps the most beautiful of all these hybrids are some *Clematis*s, including a blue-grey kind called Mrs. Melville.

Besides Mr. Anderson-Henry's own introductions many other rare plants are grown at Hay Lodge; the following, amongst others, viz.: *Gaultheria rupestris*, *Gentiana Parryi*, and some equally rare *Gentians*; a species of *Quercus* from China, with leaves more like those of a Bay tree than of an Oak; *Ramondia sibirica*, *Ranunculus Lyalli*, one of the finest of New Zealand plants, and perfectly hardy; *Veronica caespitosa*, a small hairy kind, sent by M. Max Leichtlin. *Asplenium flabellifolium* seems to deserve the name of the "Walking Fern" better than does *A. alternifolium*. The frond is much longer, and the little plant at the end of it appears to grow more freely than in the case of *A. alternifolium*. C. M. OWEN.

#### PROPAGATING BEDDING PLANTS.

THE time for preparing for next season's summer display has now arrived, and as early-struck, well-rooted cuttings pass through the winter with a minimum of loss compared with those that are put in later, I will briefly refer to those that need immediate attention; for where a large supply is needed we find it the best practice to begin propagating as soon as good cuttings are procurable, and by taking off a few at a time the beds are not disfigured, whereas if the whole supply is obtained at one time the brilliant effect of the garden is marred for a time. Foremost amongst flowering and fine-foliaged plants is the

**Geranium.**—This is so easily propagated and grown that it may seem unnecessary to give instructions as to its culture; yet there is great difference between growing a few in a pot and wintering some thousands in boxes, often in vineries, pits, and other structures far from the glass. It is no rare occurrence to find the young plants very much reduced in spring for lack of attention in autumn; and, after trying many ways of wintering them, we are still in favour of shallow boxes 2 ft. long, 1 ft. wide, and 3 in. deep inside, the bottom being formed of narrow strips, leaving apertures to insure perfect drainage. These are prepared by laying potsherds over the bottom, a thin layer of the roughest soil, and then filling up with finely-sifted soil, such as that from old Cucumber and Melon beds that are becoming vacant at this season. A good layer of sharp sand is then spread over the surface, and the cuttings are inserted in rows in the usual manner. From sixty to seventy cuttings are put in a box; they are then set in an open sunny position, and a good soaking of water is given them, after which they are kept rather dry. If care is taken not to bruise the cuttings in inserting them, almost every one will grow; and when well rooted they must be freed from decaying leaves and removed to pits, where the glass lights can be put over them during heavy rains, and when stored for the winter they should be raised up as near the glass as possible, and kept cool and well ventilated. Keep the points pinched out, and they will be dwarf, sturdy plants, ready for potting off as soon as the days begin to lengthen. This system answers well for all the strong-growing zonals and some of the bronzes and tricolors; but the delicate sorts that make but little growth should be kept entirely in small pots, as also should the Ivy-leaf section, which are so useful for edging vases and baskets, for in boxes they become matted together, and the stems, being of so brittle a nature, are often broken.

**Other Soft-wooded Plants**—such as *Verbenas*, *Pefunias*, *Ageratums*, and fine-foliaged and carpet bedding plants—winter best in broad-mouthed pots or pans; and as they do not require much depth of soil, shallow pans are preferred. They are prepared by putting a layer of potsherds with a little Moss over them, then coarse soil, and then a layer of finely sifted soil and sharp sand on the top. This is well watered, so as to moisten it right through, and the cuttings are inserted moderately thick and at once put in a close frame, where they can be shaded from bright sunshine

and shut up close during the day, but opened at night for the dews to refresh them. At this time of year no artificial heat will be necessary; but as soon as the nights begin to get cold, such tender subjects as *Coleuses* and *Alternantheras* must be removed to heated structures, to be ready for any emergency; but they are all best kept as hardy as possible.

**Blue Lobelia**, a most important subject in summer bedding, is best produced from cuttings, and to have good plants for lifting, a quantity of those planted out should now have all the old shoots cut off; they will then become well furnished with young growths in time for lifting. *Calceolarias*, *Gazanias*, and *Violas* make fine plants wintered in cold pits protected by external coverings; the first week in October is soon enough to get them put in. Amongst plants that need distinct treatment from the above, I may mention *Centaureas* and *Cineraria maritima* and *Clementi*. Cuttings of these should be put in at once, each cutting in a single small pot. If possible, they should be got with a heel of the old wood attached to them, and when inserted the leaves should be tied up to a small stake; they must not be shaded so much as softer-wooded subjects, and they take longer to root, but the soil in which they are potted must not be allowed to get dry. They do not require sprinkling overhead, or they will rot off at the heart; being almost hardy, they may be safely wintered in cold frames, and are valuable on account of the silvery whiteness of their foliage. If any difficulty arises in procuring cuttings, owing to the drought in the early part of summer having retarded growth, a larger proportion of old plants will have to be retained, and in the *Perlargonium* family old plants are really preferable to cuttings, being more floriferous. J. G.

#### NOTES FROM BELVOIR.

I SEE you say some people seem to doubt the value of *Hyacinthus candicans*. If such sceptics had seen it growing in the woodland gardens at Belvoir as I did the other day, they would change their opinion. Masses of it growing to 6 ft. high have a superb effect, while the individual blossoms are lovely.

One very grand effect was produced by *Lythrum Salicaria* in masses with the *Hyacinth*, with the soft colour of *Campanula pallida* to aid the effect. On a hillside opposite, a splendid bush of *Olearia Haastii* seemed to respond to the *Hyacinthus*, and to try and rival its power of lighting up the woodlands.

The garden on the duke's walk at Belvoir being on a hillside, offers a great opportunity of massing large clumps of the above-mentioned plants, as well as *Helianthus rigidus*, *Verbascum Chaixii*, *Bocconia*, and other such plants. *Delphiniums* had gone nearly out of bloom, but are also freely used. There are few people apparently who appreciate the value of massing plants whereby noble plants are made nobler, and those with less individuality are given it by such treatment.

Among smaller things at Belvoir was a charming little plant, *Erythraea diffusa*, with lovely pink blossoms, and pretty foliage. I could say more, but I do not think you would allow me space.

To me, who has known the Belvoir gardens from my babyhood, the way in which Mr. Ingram has made them seems almost marvellous. To him it is in a great measure due that the glories of the woodlands immediately surrounding the gardens have been unveiled, and the gardens themselves brought to their present beautiful state by endless care and toil on the part of Mr. Ingram, and perseverance in spite of many difficulties. He has had the advantage of the duke and other members of the family possessing artistic (not æsthetic) taste, and his efforts have been appreciated.

May I call attention to the value of herbaceous *Asters* for London gardens? They have prospered with me in out-of-the-way corners under trees and in good soil. A. STUART WORTLEY (Colonel).

[Our correspondent, being a nephew of the



Duke of Rutland, having much love for good gardening himself, and having seen the Belvoir gardens grow up, his notes on them are valuable, and we wholly agree with his estimate of Mr. Ingram's labours in them.—ED.]

#### A PLEA FOR PINKS.

ALL Pinks are beautiful, from the old-fashioned white with fringed petals to the choicest laced flowers. There is a pink-flowered variety very common in cottage gardens in the Fens that I do not remember to have seen elsewhere. It flowers very early, before the old white, and the flowers are rather smaller in size. Then, again, there is Anne Boleyn—how good that is for cutting! in fact, all cuttings are. And what an abundance of flowers a bed of two-year-old plants will produce! It is true in the case of exhibition flowers we must propagate every year to secure that perfect lacing that will enable them to pass muster. Pinks are eminently suited for town planting; they will grow in the murkiest atmosphere, provided some fresh loam is worked into the beds just before planting. The old plants may be retained for planting in out-of-the-way corners for cut flowers, but a proportion of the stock should be raised annually from cuttings or pipings. Pinks will strike almost any time from the middle of June to the end of August, but the best time to take the cuttings is about the beginning of July, just when the plants are in the full flush of their beauty, before the exhaustion which flowering produces has set in. Every cutting will strike in a close frame in a partially shaded position kept moderately moist. The best time to plant out permanently is in October. The frost may lift them partially up in winter, but a little care and attention will soon put matters right; and the autumn-planted beds attain a greater and better development than when the planting is delayed till spring. There are several kinds of forcing Pinks, but there is none more useful for early work than the old white, when propagated early and grown specially for that purpose. The cuttings should be taken from plants that have been forwarded in heat, and must be rooted in a gentle hotbed and be planted out when sufficiently rooted and hardened, and be lifted and potted early in September carefully with good balls. They should be planted in loam, as that produces stronger, better plants that will lift with good masses of roots, and it should be a part of the system of culture to give as few severe checks as possible. The Anne Boleyn Pinks may be treated in the same way, and will make excellent subjects for early cutting. Both this and the white may be grown in pots all the summer, the pots to be plunged in some open situation; but those plants turned out altogether make the best specimens, all things being equally favourable. All Pinks seed freely, and there is no other way of raising new varieties. Therefore, whoever grows Pinks should save a few pods of seeds from some of the best flowers marked for the purpose, which may either be sown as soon as ripe, or be kept till February following. They are best sown in pots and pricked off when large enough, as seeds sown in the open border have more difficulties and vicissitudes to undergo than when sown in pots or pans and placed in a cold frame where they can be easily kept in an agreeable state as to moisture and temperature. Of course, a portion of seedling Pinks will produce single flowers, but even these are pretty for bouquet making. E. HOBDAV.

**English native bulbs.**—It is most interesting to collect localities specially favoured by certain plants, natives of England, but coming under the head of our rarer wild flowers. Two of these which have come under my notice lately will, I think, prove interesting to your readers. 1. *Fritillaria Meleagris*.—This I have found in quantities in a field in Middlesex, and have never come across it anywhere else. Both the white and chequered purple varieties grow there in abundance in a meadow sloping down a hill to-

wards the north. They grow about 5 in. high, and flower in June or July. 2. *Tulipa sylvestris*.—The bright yellow flowers of this rather uncommon wild bulb may always be picked in April in a field near Bath. The stalks are slender and light coloured, and the petals are more pointed, and the flowers altogether longer than those of the garden variety. Will any others of your readers give us similar instances?—EDWARD H. ALLEN. [We are rather afraid that if we make particular localities too public, such rarities will soon disappear.]

**Yucca recurva.**—Any one having old plants of this Yucca, one of the best of hardy fine foliaged plants, should take the suckers off with a heel and some roots, and plant them singly; they make excellent subjects for centres of winter beds, vases, &c., and, with careful lifting, will do good service for several seasons.—J. G. L.

**Clematis Viticella.**—In the rush after the large-flowered Clematises, which as regards stem and habit are often poor, weak, bodiless things, we are too apt to forget some of the finer and older species and their hybrids, which, while not giving so large a flower, cover ample spaces, and flower as beautifully as the large ones, or a good deal more so. We were very much struck with a plant of *Viticella*, or probably one of its forms, in a garden in Surrey the other day. It had a run up a wall and half-way over a cowshed that was behind, and was one enormous wreath of purpled—one of the finest things we have ever seen. The *Viticella* race are well worth growing.

**Single Dahlias.**—Any one who wishes to see the Dahlia in its original state, as introduced to Holland Park in 1814, before the present double kinds were invented by our florists, should pay a visit to the gardens of the Apothecaries' Company on the Chelsea Embankment, where it is to be seen in perfection, and as a lady naively remarked on comparing the two flowers, "One is all grace and elegance; the other savours of Sir Gorgius, Midas, and shoddy." The admission to these gardens, which are well worth a visit, is by an order, to be obtained from the secretary of the Apothecaries' Hall Company, Water Lane, Blackfriars.—W. H. TUCK.

**Beautiful Vines.**—The artistic gardener would, at this season, do well to make note of a few of the really beautiful Vines—we mean those worth growing for the simple beauty of their leaves and shoots alone. The American hardy Vines are very fine, and there is a handsome one called *orientalis*, which deserves a place against a wall or scrambling over a low tree. There is also one called *odoratissima*, which is very fresh in scent in spring. Humboldt's Vine, which has an immense large leaf, turning claret-red in autumn, is also worthy of a place against a tree or elsewhere. These plants should be placed in positions where they will require no great care. In fact, we saw one the other day running about on the ground in a shrubbery, the outermost shoots crawling up the adjacent trees, the effect of which was very fine indeed. There can be no kind of difficulty in their cultivation, except that nurserymen may sell old snaggy plants that will not grow freely. There is no great sale for these things, and very likely one may get a thing in a pot or with a stumpy root that will not go ahead when planted. The best way is to get a few eyes and strike them for one's self. With vigorous young plants there can be no failure.—FIELD.

**Hydrangeas in autumn.**—As a late flowering plant for permanent beds, or for groups springing from the turf, few plants are more effective than the old pink *Hydrangea* which under certain conditions of soil or climate sports into a variety of shades of blue. We have at present some beds sheltered by conifers that form strikingly beautiful objects, the large massive heads of bloom bending down the branches, and the various shades of colour very singular in plants each growing within a few yards of the other and treated in the same way in every respect;

some are bright pink, and others pale blue. Under favourable conditions the *Hydrangea* forms large bushes, but during the last few severe winters the points of the flowering wood have been considerably injured by the frost, more especially after dull sunless summers, when the growth has been but imperfectly ripened. Last autumn being fine the wood was well matured, and consequently resisted the severe frosts bravely—with the result that we have now a good show of flower-heads in open-air beds. *Hydrangeas* will grow in any fairly good garden soil, and when once planted only need dead wood and weakly straggling shoots removed to make handsome bushes. They strike readily from cuttings, and the points of strong flowering shoots put into small pots now will make good dwarf flowering plants next summer. In districts where the winters are severe the *Hydrangea* will well repay a little temporary protection, such as that afforded by Bracken, Fern, or Spruce Fir branches.—J. GROOM, *Linton*.

#### THE INDOOR GARDEN.

##### PANCRATIUMS: THEIR USES AND CULTURE.

If the question were asked what flower more than any other adds beauty and elegance to any arrangement of cut flowers, the answer would be differently given by different individuals. Many would, no doubt point to the white *Camellia*; others would select *Roses*, such as the ever-beautiful half-opened buds of the white *Niphetos*; some might choose *Stephanotis*, or the always acceptable *Eucharis*; whilst the admirers of such chaste Orchids as *Odontoglossum crispum*, or *Pescatorei*, or *Phalæopsis*, would urge the claims of these. Yet unsurpassed in their way as are each and every one of these, they all stand in the rear of *Pancratiums*, which combine elegance of form, purity of colour and perfume, so as to give them precedence before any other flowers either in a bride's bouquet or in that of a bridesmaid, with a few bits of blue or pink at the option of the maker. Even when the bouquet is for ordinary use, *Pancratiums* combined with mixed colours are extremely handsome, and the same remark applies to them when confined to a vase, or basket, or similar receptacle. Their long, narrow, elegantly curved petals lighten up indeed any arrangement of flowers with which they are associated. If the other flowers used are crowded too closely together, which often happens, the introduction of two or three *Pancratium* flowers relieves the stiff, over-crowded appearance. One thing connected with their flowers has hitherto been against their use, and that is their liability to injury when packed for travelling, consequent upon their soft texture, and their colour, which from its purity shows the least bruise; but this can easily be avoided. Having recently to take some of these flowers for a long distance, I thought that, in addition to such as were fully expanded, I would try some that were within a few days of opening and see what could be done with them in water. The experiment was completely successful. The flowers opened just as well as they do on the plant, all the difference being that they do not get quite so large. There is, too, another little matter connected with *Pancratiums* that it is necessary to bear in mind, and that is the anthers have yellow pollen, and if not removed stains the flowers and destroys their purity, consequently the pollen masses should be pulled off the same day on which the flowers open. This is especially necessary when they are opened in water in the way above indicated.

The two best kinds for general use are *P. fragrans* and *P. rotatum*. The latter differs little or nothing from the former as to colour and perfume, but is rather smaller in the individual blooms, which is no loss. The old *P. fragrans* has long been cultivated in gardens, and a few often neglected bulbs used frequently to be seen in any place where there was a hothouse, but within late years, when there has been such an increased demand for flowers suitable for cutting,



it is oftener met with, yet rarely in quantity it deserves, for in any establishment where cut flowers are regularly wanted, instead of a dozen a hundred might with advantage be grown. Mr. Speed, at Chatsworth, has them in long rows through the houses, where they thrive and bloom beautifully, filling the houses with their perfume. As decorative plants, even if the flowers are not wanted for cutting, there are few things that have a more charming appearance than *Pancratiums*, with their large umbels of snow-white blossoms springing from healthy green foliage. That these most beautiful flowering bulbs are now being cultivated more than they used to be is evident from the trade that some of the London nurserymen are doing in them. One alone gets through thousands of *P. rotatum* annually. At his nursery they may be seen with their bulbs laid on the floors of the houses just like Potatoes or Onions, and even in this way they push their bloom-spikes up without a bit of soil. Their cultivation is simple in the extreme. Like most other bulbs, they do not need a great deal of pot-room; still they may with advantage be treated more liberally than *Amaryllids* in this respect. Similar to the latter, they require a season of growth and a season of rest, but want more warmth; both during the time of growth and also when at rest they must not be kept so cool. To get the full complement of flowers from *P. rotatum*, it requires to be subjected to a more severe drying process than *P. fragrans*. T. B.

#### SEEDLING V. NAMED CINERARIAS.

FOR a general display, seedling *Cinerarias* have been at times recommended in preference to named sorts, but I do not believe in the former except for early flowers. I have sown seed every year for many years, and always of the best strains procurable, but must say it has always produced a great number of poor flowers and very few really good ones. A table of seedling plants on one side of a house, and a table of named kinds on the other, present a very different appearance; and, considering the one is just as easily cultivated as the other, the preference ought to be given to named kinds whenever a large quantity of plants have to be grown for decorative purposes. I find here that if the old stools be cut down, shaken out, and planted in good light rich soil, behind a north wall in June, they produce strong offsets in July or early in August; and if these be potted off as soon as ready, they will be very little behind seedlings sown in spring, and altogether make much finer plants. For many years our old plants have been put out in an angle of a border formed by an east and north wall, where they never received a blink of sun except early in the morning—a situation which seems to suit them admirably, as, no matter how much green fly may be upon the old plants, when done flowering it soon leaves them, and the effects are always early and strong. They are potted and placed in a frame in a similar shaded position till frost is feared, when they are removed to a cool house and grown on. Some few years since we had an old-fashioned span-roofed house, with a sunken floor some feet below the level of the ground, which was always filled with *Cinerarias* during the winter and spring, sometimes also with *Calceolarias*; and both species always thrived exceedingly well in it—much better and with less care than in a new house now built on the site of the old one. In the old house *Pelargoniums* were subject to “spot” and Heaths to mildew, while the *Cinerarias* thrived amazingly, and never were troubled with insects; but now, in the airier and better ventilated new house, it is just the contrary—our *Cinerarias* require more attention to keep them in good health. The old house was rather close and damp, in winter warm enough, owing to its sunken position, without much assistance from fire heat, and in summer cool—the very conditions that suit *Cinerarias* and *Calceolarias*. They dislike fire-heat, and there is no better position for the first in summer than a north border, and a light but rather damp structure throughout the winter and spring. The *Cineraria* delights, too, in

rather strong loam, nourished by cow manure; and if the plants have plenty of drainage, they are far more likely to suffer from being under than over-watered. With regard to flowering, I have always found that when the flower-spikes were allowed to grow uninterruptedly from the beginning without pinching, they always produced the largest and finest flowers. A *Cineraria* that is grown on liberally from the beginning will show little or no disposition to flower before the plant has reached a mature age and good size, with plenty of broad succulent leaves, like those of a Cabbage more than anything else, and then it throws up a fine flower-stalk of great strength and thickness, which branches out and produces a broad head of flowers. Should the young plants show flowers prematurely, as they will do if allowed to get pot-bound, the stalks should be pinched clean out of the socket, and this practice should be continued till the plants get fairly established in their flowering pots, when they will cease to produce flowers and expend their energies in producing fine foliage, which is the best guarantee of a good finish. We have had plants in 7-in. and 8-in. pots, with leaves nearly 1 ft. across and as stiff as pasteboard, and the heads of flower they produced were quite equal to exhibition plants we had seen in much larger pots, and all staked out to fill up. Our plants received no support of any kind. C.

#### OVER-POTTING PLANTS.

GROWERS for market have long since discovered what kind of plant is best for indoor decoration, and they produce marvellously well developed specimens in a minimum of root space, by means of high feeding with some of the soluble manures now so plentiful. It is well known to all who have indoor decoration to carry out how much better plants in small pots packed full of roots not only flower, but retain their flowers and foliage under the adverse conditions of light and air to which they are too often subjected, compared with those in larger pots only moderately well rooted, as they are so liable to get waterlogged and to quickly lose both flowers and foliage. As a rule the pots become covered with Moss, or are plunged out of sight, where evaporation is reduced to a minimum. There is not the same necessity for large pots now that existed a few years ago when large specimen plants were frequently to be seen grown solely for filling the houses in which they grew, or possibly to figure once or twice a year at some neighbouring flower show. Now, the great increase in the matter of indoor decoration necessitates all available space being utilised by plants that are useful for that purpose. This has caused Palms, *Dracænas*, and other fine foliaged plants to be extensively grown, for in them we have a class of plants that withstand the usage that such materials get in crowded assemblies; and, moreover, they form fine plants in proportionally small pots, that fit vases and other receptacles in which they are required to be placed. The plea generally put forward in favour of the use of large pots is that they require less frequent attention as regards watering in hot weather than small ones; but that is overborne by the fact that a plant in a pot really too large, with a quantity of cold, inert soil about its roots, is in far greater danger of sustaining injury from careless watering than a plant in a small pot full of active fibres, for although the latter may flag or droop from lack of moisture, it soon recovers when water is supplied; but an overpotted plant that gets into bad health from over-abundant root-moisture is by no means so readily recovered. I would, therefore, strongly advise amateurs to rather than over-pot their plants, for with the drainage in good condition it is surprising what a small quantity of soil will sustain even a large plant if liquid stimulants be intelligently applied to it.

JAMES GROOM.

**Tuberose at Birmingham.**—Your observations (p. 222) respecting Mr. Vertegan's

Tuberose in the Chad Valley Nursery induce me to offer a few remarks upon the merits of those which he exhibited at the recent Botanic Garden Show at Birmingham. In a very effective and interesting exhibition of plants there staged by him was a large flat basket containing a group of twenty or more well-grown and flowered Tuberose; about the bases of the stems of these were, thinly arranged, flowering sprays of *Bougainvillea glabra*, the produce of plants grown in small pots, the lovely pink bracts of which contrasted beautifully with the pearly whiteness and purity of the Tuberose, relieved with a groundwork of green foliage, and an elegant edging of foliage which drooped down and completely covered the basket, giving the whole a very pleasing effect, showing what skilful taste may accomplish in the way of decoration. GEORGE WESTLAND, *Witley Court, Stourport*.

#### THE FRAGRANT CLERODENDRON.

I AGREE with all that “T. B.” writes in regard to the beauty and usefulness of shrubby *Clerodendrons*, and have long found those of the squamatum type referred to among our most useful stove plants. Even when the brilliant flowers have faded the panicles of mauve-coloured seeds give them considerable rank among ornamental berried plants. But the scent of *Clerodendron fragrans* is strong rather than sweet, and it by no means deserves the character of “one of the most fragrant of all flowers.” The scent is unique as well as strong, and it is difficult to describe it either by abstract terms or comparison. Choosing the latter, I should say it resembled a mixture of Sweet Pea perfume supplemented with the odour of Pea meal (edible Peas) fresh ground.

Then its double white flowers, used singly for bouquets, is another description or recommendation hardly to be endorsed, for, like a good many more white flowers, these have a large dash of pink in them, as a rule, and I never yet knew a lady who admired the form or could endure the perfume of this particular *Clerodendron*. Still, the plant is useful, the more so as it is comparatively hardy, and stands conservatory treatment well. I have even grown *Clerodendron fragrans* in the open air among other sub-tropical plants with a fair amount of success. In such positions its somewhat fulsome fragrance is less objectionable, as its odour is improved by considerable dilution. No one should grow many plants of this *Clerodendron* in a conservatory attached to a dwelling house, nor introduce any plants into living rooms. As far as I am aware *C. fragrans* is the only double and also the only scented variety, and it is doubtful if either quality can fairly be considered improvements. I wish, however, to endorse all that “T. B.” says of the usefulness and beauty of this class of *Clerodendrons*. Single flowers of the brilliant scarlet varieties, nicely mounted, are among the choicest and most distinct material for contrasting with white *Bouvardias*, *Stephanotis*, and other flowers in bouquets, and the plants themselves either in a large or small state are strikingly effective in the stove. D. T. FISH.

**Pruning *Deutzia gracilis*.**—We are advised to cut back or cut out the old flowering wood of this plant before starting it into growth for the current season's work. My advice to those who want fine blooming specimens is not to do so unless it may be an odd straggling shoot. When the plants have done blooming, take a pair of scissors or a knife and cut out all the old bloom stalks, place the plant in a moderate heat for a few weeks, and repot into fresh soil just as the plant is starting into growth; when it has made its growth plunge it out in a sunny spot to ripen the wood. When cold, wet weather sets in place it in a cold frame until it is wanted for forcing. It will then be found that the wood which had previously bloomed has formed good full flower buds, filling up the heart of the plant with bloom, while the long young growths are hanging in



graceful festoons. This is how Mr. T. Agnew's plants are managed, which are always so fine at the Manchester exhibitions. I have one or two which have been left as they bloomed last spring, and which have not been under glass, and they are full of hard plump buds already on the spurs of the last spring bloom; but my plants are nothing compared with those just alluded to, many of which are more than 5 ft. across. I feel persuaded that most of the failures as regards this plant arise from the cutting out of the old blooming wood, and not fully maturing what is young.

—N. J. D.

## RAMBLES OF A PLANT COLLECTOR.

(Continued from p. 86.)

KIOTO, one of the capitals of Japan, is celebrated for its porcelain, a beautiful cream coloured ware, and generally well painted. It is a good imitation of the old celebrated Satsuma ware, and many a Kioto dish has been sold at a high figure for real Satsuma. I saw a most beautiful pattern in a small potter's shop, a blue and gold, with cherry flowers delicately painted on the white ground. Nurseries here are few and very poor, so I contented myself with visiting the finetemples. One is called the Temple of Gold (Kinkakuji). It was surrounded by a fine grove of trees—Pines, Cryptomerias, an Ulmus, and Laurus Camphora. To see the reflection in the lake on one side of the temple almost makes one believe there is another temple underneath. A beautiful little boulder island, covered with Azalea mollis and a stunted Pine, gives the finishing touch to the scene in front of the temple. Hundreds of golden carp are in the water. The walls inside Kinkakuji are covered with gold leaf. A fine *Pinus koraensis*, trained into the shape of a Japanese junk in full sail, is at one end of the garden, and the priest who was in attendance told us that it had taken 500 years to train it. It was about 25 ft. long and 10 ft. wide, a perfect mass of foliage. I visited many other pagodas and temples, some with gardens celebrated for Pæonies, some Cherries, and some for the Wistaria. One variety I saw had racemes 4 ft. long. One temple had an avenue of *Acer sanguineum*, another collections of Orchids. An industrial exhibition was open during my stay in Kioto, and I visited it one morning. It was held in the old palace of the Mikado, and the Japanese were crowding in by hundreds into a place where 20 years ago the presence of one would be death unless he had special permission to go there. The garden round the building was rather pretty; groups of *Retinospora* and flowering shrubs, such as *Camellias* and *Oleas*, were dotted about the favourite stunted Pines. Fine *Wistarias* covered trellises with masses of flowers. I also noticed a small lake with a summer-house on an island connected with the mainland by a pretty rustic bridge. At a place called Uji there are extensive Tea gardens, said to furnish the best Tea in Japan. The trees are planted in rows 4 ft. apart, and clipped into round bushes.

I left Kioto one morning and walked to Oetz, a village on the shore of Lake Biwa, so named from its supposed resemblance in shape to a musical instrument of that name. It is the largest lake in Japan, and particularly beautiful. Near the road from Kioto to the left, on the hill side, is a grand park, with the remains of some once magnificent temples, finely paved roads under avenues of huge *Cryptomerias*, large bell and drum towers beautifully built and ornamented all going to ruin. Here were fine specimens of the numerous varieties of evergreen Oaks intermixed with *Abies firma*, and in the dense shade were *Aralia Sieboldi*, *Aucuba japonica*, and *Camellias*. *Andromeda japonica* and enormous *Gleichenias* were growing from many of the old

walls in exposed positions. The *Andromeda* is a beautiful flowering low shrub, pure white, with a much larger raceme than that of *floribunda*, and from its very free flowering disposition will prove a valuable plant both for pots and out of doors. I was fortunate in procuring a variegated variety of this, with pretty silver bordered leaves; this has proved quite hardy in England. At one place near the lake a large *Pinus densiflora* is growing, and covers a circle of 64 yards in diameter. The trunk is 9 ft. 3 in. in diameter. I returned from Oetz in the evening, and I arrived in Kobi just in time to catch a steamer going to Yokohama. At nine in the evening we were steaming out of the bay of Osaka in a very rough sea. As we proceeded northwards, however, the weather became much finer, and one morning as I came on deck I was delighted to see the sacred mountain rising up above low hills on our left, for we were within sight of land almost the whole distance from Kobi to Yokohama. The mountain was half covered with snow, and had a peculiar rose tint in the early morning. I became much interested as I thought about my future trip up that mountain, and the expectation of seeing many of the fine plants discovered by the late Mr. J. G. Veitch. As we steamed up the bay of Yeddo the scenery became very pretty—low hills thickly wooded, with here and there bright patches of yellow and green, intermixed with the dark foliage of the Pine trees. We rounded the bluff point at last, and came in full sight of Yokohama, a low-lying town, built on a raised swamp.

The Nurseries at Yokohama are, for the most part, collected together on each side of the road leading over the low hills where most of the foreign merchants live. The first plant that I noticed as being very fine and most common was a pretty *Davallia*, grown in baskets, on blocks, and balls of peaty fibre. It was hanging everywhere. Messrs. Veitch sent out this pretty Fern about two years ago. In one garden which I entered I saw enormous quantities of *Angræcum falcatum* just brought in from the country, and *Dendrobium japonicum* in full flower. In another I saw collections of Orchids under small covered stages, neatly arranged and potted in *Sphagnum Moss*, just as we do them in England, only the rarer the plant the more valuable is the beautiful porcelain pot in which it grows. This is invariably the case. I saw a stunted and of course valuable Pine in a pot for which the proprietor wanted 250 dols. *Rhaphis flabelliformis*, Cycads, and collections of *Cymbidiums* were here in great quantities. The varieties of *Cymbidium virens* are highly prized by both Japanese and Chinese, particularly the variegated-leaved ones. Some are valued at from 50 to 100 dols. per plant, and really sometimes I could not tell the difference between the common and valuable kinds. The *Orontiums* are also a highly prized class of plants, and fetch as much money as the *Cymbidiums*. There were Maples in almost endless varieties, all in small unburnt pots. Large specimens of these had as many as sixteen varieties inarched on one thick stem of polymorphism, and the beautiful combination of colour and form of leaf had a pretty effect. I saw, too, large specimens of *Thuja aurea*, sugar-loaf shaped, as if made to order. A large tree of *R. pisifera* or *obtusata* is chosen, and in the spring thousands of small grafts are put on all over the branches quite thickly. The original tree is allowed to grow till the grafts have taken, and when the latter begin to grow the old branches are cut away, leaving nothing but the grafts; in two years a specimen is thus formed, some of them 20 ft. high.

The nursery belonging to Mr. Aka-saburo is a fine place; at the entrance there is a rustic gate with a solitary Pine branch trained over the top, forming an arch; a specimen border is on each side as one enters, and for a path irregular, flat-topped stones are let in the ground, making a clean footway in wet weather, but bad to walk on, as the stones are about 1 ft. apart. All kinds of shrubs that are most common in England were planted here. Further on is the nurseryman's residence, a neat two-storied house with verandah on the upper and lower stories, built with wood, and splendidly made. The road leads through one end of his plant stages, and here is a summer-house, a large room, a wide, cool verandah, and all round most beautifully furnished; on the walls were hung panels of wood painted with flowers and other beautiful things by some Japanese artist. There were also stands for flower-pots of rare Chinese work; a sort of sideboard was at one side covered with an extremely rare collection of tiny flower-pots and pans, both Chinese and Japanese. Dotted irregularly about the room were ebony flower-stands with some of the best Orchids and other plants in bloom on them. I was met at the gate by Mr. Aka-saburo himself. He apologised for having such a poor house to invite me into, and asked me if I would have a cup of tea. While the tea was being made I looked into a corner railed off from the rest of the nursery with a pretty fence made with bundles of reeds. I found here a most beautiful collection of Orchids and *Orontiums*, and some rare Ferns. The plants were in perfect health and showed signs of skilful cultivation; this was Aka-saburo's private department. I saw a beautiful golden variegated *Angræcum*, and also a variegated *Aerides*. I bought plants of the former, but he would not part with the latter, a really fine plant. In the nursery were long tables on posts 2 ft. high, on which the plants are put, and above them a screen or shade of thin Bamboo which can be rolled up in very sunny weather. There were Palms, Maples, Cycads, Ferns, Geraniums, Roses, Cacti, Pines, and round the outside forest trees and fruits, all in pots; in another corner were Azaleas in endless varieties and *Camellias*. His garden was chiefly devoted to Lily culture, Mr. Aka-saburo having a large business in exporting the bulbs to England. I was several days preparing for my trip overland to the island of Yesso, which is about 500 miles north of Yokohama, and was only able to pay flying visits to the principal nurseries in Yeddo, or Tokio, as it is now called. The plants I saw in the latter nurseries were most of them very common in England. On my way from Yokohama to Yeddo I was invited to pay a visit to

The Shogun's Garden. I had already heard a great deal about it. The garden lies on rising ground near the British Legation. A fine broad road leads up to the gate over a moat, and through immense stone fortifications, a dense line of *Pinus densiflora* and clumps of Bamboo, with here and there an *Abies firma* cropping up above the Pines. At the entrance the road leads through one of the finest groves of Bamboo I have ever seen. The canes are 100 ft. high, and some of them 10 in. in diameter; one variety called *Mo-so* has bluish stems and very feathery. A winding path here leads out to a beautiful park with groups of trees and specimens of rare trees everywhere. A splendid tree of the *Acer trinarvum* of Siebold overshadows the walk; green grassy banks are here, too, full of Ferns in the shade, and sometimes of dwarf Azaleas. A fine racecourse opens up on the left, with a pretty lake densely bordered with



evergreens and Pines on the right. The undergrowth consists of Camellias, Aucubas, and Aralia Sieboldi. A beautiful effect is obtained by the huge pieces of rocks that are thrown irregularly into the water here and there, over which are growing *Ficus stipulata*, *Azalea rose-flora*, and Mosses and Ferns; they look exactly as I have seen rocks in the mountain gorges. There is some attraction to the Japanese at every season of the year in this garden—the Azaleas and Maples in spring and summer, Chrysanthemums in autumn, and Camellias in winter. When I was there (May 19), the Wistarias and Azaleas were in full bloom. The grand effect of the place consists in the groups of trees so judiciously planted; for instance, as we sat on a mound at one end of the garden where a pretty summer-house was built, we saw in one direction masses of double Cherries, large trees planted on a background of evergreen Oaks and *Cryptomerias*. Such a grand effect can hardly be imagined. In another direction were a house and small lake, surrounded with large Maples with their brightly-coloured leaves. *Pinus koraiensis*, too, looked well here, its glaucous foliage having a good effect. It was planted out on the lawn, as was also *Pinus parviflora*. Looking another way, we saw a perfect specimen of *Acer sanguineum*; in another, a splendid *Liquidambar*. In one place I observed the most perfect waterfall I have ever seen, except in the mountains, and the irregular way in which the Azaleas were planted amongst the loosely-thrown-together rocks gave the desired natural effect. Summer-houses, beautifully furnished and built in just the right places, added considerably to our enjoyment, for we were offered cups of tea and also Cherry flower tea in exactly the same style as, perhaps, the old Shogun had it 250 or 300 years ago, when the garden was made; he must have been fond of gardening, and he certainly had good taste and ideas. We rambled a long time in this garden, and a Japanese friend who accompanied me suggested dinner, so we went to the Sayoken restaurant in another park called Weano. We saw again here enormous Cherry trees backed up with Pines. We passed a fine bronze image of Buddha and a drum tower at the entrance to the hotel, which is pleasantly situated on a hill overlooking a portion of Yeddo. I noticed a piece of rock with a stunted Pine, and a large specimen of the pretty *Conandron ramondoides*, which I introduced afterwards into England, being such a curiosity. In the hotel garden was a large bush of *Magnolia Halliana* in full bloom, the scent of which was delicious. After dinner we visited the Shogun's Temple, also in Weano Park, and we saw there the first large *Sciadopitys*. I have seen many since, but this tree at Weano has a pendulous habit, and may be, as the Japanese say, the only one of its kind in Japan. Opposite the *Sciadopitys* is a large *Podocarpus*, a tree which might be easily mistaken for an *Ilex*. Many very large trees of the latter are growing in the dense grove which surrounds this temple. A five-storied pagoda is half hidden amongst *Cryptomerias* and evergreen Oaks, and the building is fast falling into decay; young trees are growing from the roof and otherwise destroying the beautiful structure. It seems a pity that the Japanese Government does not keep these fine buildings in repair. We had such a pleasant day, that I decided to delay my departure for the north for a short time, so next day I visited

THE BOTANICAL GARDENS, which are under the charge of Mr. Yatabi, a Japanese, who has studied in America, and I found him a well informed man, and evidently a good botanist. The Botanical Garden itself is nothing more than a trial ground for foreign plants and seeds

at present, a very small portion only being planted with specimens of plants for the botanist to study. It is a portion of a once very beautiful garden, belonging to one of the principal daimios. I was taken to a portion of the old garden that was said to be useless; to me it was almost Paradise, although in ruins and desolation. It exhibited a splendid piece of landscape gardening. The shrubs and trees were left unpruned and neglected; weeds choked up the paths and rare plants on the rockeries; the pools, once full of the finest varieties of *Nelumbiums*, a few of which remained, were Grass-grown; beautiful specimens of Azaleas, perfect masses of flower, were everywhere, for this portion had evidently been set apart for Azaleas and Pines. Huge masses of rocks were irregularly placed about the overgrown lawn with perhaps a fine *Azalea mollis* spreading over the Grass and covered with flowers. The *A. obtusa* section was also here in bushes 10 ft. high, and the sight cannot be imagined—masses of white, crimson, lilac, and salmon everywhere. A small cavern in a rockery was at one end of the place overgrown with Azalea bushes. Formerly a waterfall flowed over the top of the cavern and fell about 20 ft. below; a small winding path led up through the bushes and under the fall. I saw a similar one in the mountains at Nikko, but on a grander scale. The summer-houses, rustic bridges, and gates were falling to pieces. As I sat waiting for Mr. Yatabi I thought what fine taste and pleasures these old daimios must have had in such quiet retreats as these away from the city. Scarcely one of these fine old gardens, however, now exist as of old, and it is seldom one meets with the beautiful gardens spoken of by Fortune. The present attempt of the poorer classes at gardening near Yeddo is not worth mention. Like many other old good things, gardening is fast dying out in Japan, and can only be spoken of as a thing of the past.

IN ANOTHER DAIMIO'S GARDEN I saw a splendid collection of Iris grown in shallow, muddy ponds, with quite 3 in. of water up their stems—in fact, aquatics. I obtained many of the beautiful varieties which I introduced from this garden. I also found a most curious and ornamental Bamboo here, a square-stemmed one. I was very fortunate in sending a lot of this home alive, and it now grows at Messrs. Veitch's Coombe Wood Nursery. It differs from all other Japanese Bamboos in the growth of the young shoots, the latter being sent up in the autumn instead of the spring in Japan. The stem is in many instances perfectly four-sided. I saw here also a new Fir—*Abies yessoensis* of Siebold. I take it to be. It has, however, been named *A. ajanensis*. It was here that I made up my mind to visit Yesso, as the old gardener told me his former master (Meto Daimio) brought the plants from the West Coast of Yesso. This garden was almost a repetition of the Shogun's place, but I never saw finer specimens of evergreen Oaks and *Ilex latifolia*. There were many interesting plants; one Maple, a crimson-leaved one, was cut into the form of the Japanese lion, and was growing on a background of *Cryptomeria*. We were entertained here in the old summer-house by the principal of the arsenal, and I spent a very pleasant day. I afterwards visited the place many times.

C. MARIES.

**Carpeting big trees.**—There is no more pleasing feature to be seen just now at Hampton Court than the dense carpets of greenery which cover the borders beneath large trees that overshadow the broad walk leading from the Lion Gates. Here small Laurels, Aucubas, Privet, Mahonia, and similar evergreens are planted somewhat densely, and no doubt frequently renovated, as it is not

possible that these shrubs would remain so healthy beneath these lofty trees for any lengthened time. No doubt the flower-beds, especially the carpet-beds, present the greatest attraction to the multitude, but no gardener could fail to appreciate the great effort thus made to make these tree borders look so green and full of vigorous leafage. A. D.

## NOTES AND READINGS.

The following rule from the prize schedule of a noteworthy Floral and Horticultural Society is suggestive, and upon the whole, I submit, unfair: "If any member try to impose upon the society by extracting the eyes of Dahlias colouring the disc, adding false centres, or by painting the petals of flowers, he shall (if detected) forfeit all prizes awarded to him; and if any person has previously been found guilty of such fraud, he shall not be eligible to compete at any exhibition of this society." "Girofle," I think, permits bad petals to be extracted; why, therefore, should an eye not be operated upon in the same manner, a disc coloured, or a false centre added? The rules bearing upon the art of the florists want revising to bring them into harmony with the principles laid down on the subject of dressing.

"Girofle" is such an honest and unaffected believer in the florists and their fancies that one does not care to be too critical or severe with him, but surely he must have felt that he had an uncommonly weak case when he had to draw a parallel between florists' flowers and the human form as it leaves the hands of the milliner or a Madame Rachel. It is a necessity of civilised society that human beings have to dress themselves; but florists have no such excuses for dressing their flowers as they do dress them. Dressing adds no permanent quality or improvement either to the plant or the flower, and it can never gratify any one but the few who grow flowers to be shown on an exhibition table and to be afterwards cast aside. Upon the whole, the conversation between the ladies which "Girofle" heard is rather a good sign, as showing that popular taste is setting in in the right direction. \*

The prettiest and most artistic dinner-table decoration of the past season was, according to *The World*, "an immense Worcester bowl of wild flowers—*Marguerites*, Poppies, bright blue Cornflowers, and feathery flowered Grasses. This arrangement in field flowers was a positive relief and delight to the eye after the gorgeous bloom of exotics, the waxen beauty of *Stephanotis* and *Cape Jasmine*. But when I inquired at a suburban florist's for *Marguerites* and Poppies, I was told they were not to be had. There would be too much trouble in collecting them. It was worth nobody's while. But by means of the post-office our rooms might be decorated with wild flowers all the year round. Friendship has beautified my drawing-room at all seasons with flowers from the New Forest: Snowdrops in February; Daffodils, Primroses, Violets, Bluebells, Forget-me-nots in March, April, May; Water Lilies in July; and still lovelier children of the woodland—pale, perfumed, fragile—whose very names, alas, I know not." \*

"Good" and "bad" stocks of seed is a subject that every now and then engages the attention of dealers and their customers. I believe that the stocks held by respectable seedsmen are in the main true to name and description, but it cannot be denied that there are



many bad or untrue stocks of both vegetable and flower seeds distributed. If it were not so we should not hear so often of bad stocks of this, that, and the other thing. A wrathful gardener, the other day, pointed out to me a large plantation of a well-known and important vegetable, hardly two plants of which were alike, although the variety is perfectly well known and easily procured by those who are willing and can afford to go to the best sources for their supplies. It was plain that the seed had been harvested from a stock in which "rogues" and all had contributed to the common store. "Rogueing," or the eradication of spurious varieties, is a work which the *bona-fide* seed-grower faithfully performs, but there are others less particular and have no qualms of conscience in that respect; but they contribute in some degree to the general supply nevertheless. There are some firms who pride themselves on having this or that particular strain of something "grown for them" specially, and sometimes the productions of these specialists are good, but quite as often they are bad—all depends upon the integrity of the grower. It is pretty well known that the wholesale seed trade in this country is in the hands of a very few individuals whose stocks, as I have said, are, as a rule, good and true, because they are procured from the best growers in this country and on the continent, and these houses in time supply the bulk of the retail trade; hence the greater portion of our garden seeds do not go through many hands before coming to the gardener who deals with good firms.

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Some of the subjects among which bad stocks are proverbial, are such as *Calceolarias*, *Cinerarias*, *Primulas*, *Hollyhocks*, *Auriculas*, &c. There is already a bad stock of single *Dahlia* seed in the market which produces very inferior double flowers of the old pattern, and that do not appear to have the least affinity with the new single kinds. We have seen scores of these lately, and heard of extensive plantations of the same kind having been put out. All sorts of people save flower-seed specialities, hence the difference in the strains, some being almost worthless. "Sealed packets" bearing the name and stamp of the raiser or authorised vendor of any subject is not always a guarantee of excellence, but they ensure one getting the real article, whether good or bad, and it is best to buy these.

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Among vegetables, bad stocks of Peas seem to be more common than anything else. We fear they are not all bad stocks one hears of, however, but only badly grown examples. If a variety does not produce as many Peas to the pod as may appear in some illustrated advertisement in which the contents of each pod are displayed like a regular set of good teeth, the grower is apt to imagine that his stock is bad, and that he has been victimised, but this is a mistake. Wonderful examples of Peas can be produced by thin sowing and high culture; but thick sowing and ordinary, and sometimes poor culture is the rule in gardens, and under such conditions the highest degree of excellence is never attained. There seems to be more bad stocks of the old and much esteemed *Ne Plus Ultra* Pea, for example, than good ones, if we are to believe all we read about it. Those who estimate examples of this excellent Pea by the length of the pod and the number of Peas in it will be apt to think most stocks of it inferior. It is not an exhibition Pea, and it was never described or recommended as a large podder, *Ne Plus Ultra* seldom produces more than seven or eight full-sized Peas to a pod under ordinary garden culture, and nine Peas is the greatest

quantity it has been credited with. It is chiefly esteemed as being a prolific pod bearer, and especially for producing Peas of large size and excellent flavour, in which point it is unsurpassed. Veitch's Perfection is even a more disappointing Pea to look at. It is big, and in quality of the highest excellence, but as Peas go now it cannot be called prolific, neither as regards the quantity of pods produced, nor the Peas inside of them. A very prolific bearing habit cannot indeed be expected in early or very dwarf Peas. In these the crop is soon over. Great crops and prolonged bearing are only found in kinds that produce plenty of straw like some of Laxton's, and mostly all the late Marrow varieties which usually bear well and long.

A correspondent of the *Journal of Horticulture*, who says he is not particularly favoured in the matter of soil, states that by the aid of semi-scientific manuring, he never takes less than 30 lbs., and often near 50 lbs. of Grapes from each of his Vine rods. Assuming that the rods are of the average length, this weight of crop will be regarded by most Grape growers as extraordinary. It is a pity the writer does not give particulars further than telling us that his secret consists in encouraging ample foliage, and giving ample manure in conjunction with free ventilation and low night temperatures, no heat being afforded at night from hot-water pipes, no matter what the weather may be. An average weight of 40 lbs. to the rod year after year is the heaviest ever recorded, and we venture to think names and particulars regarding such success should be furnished.

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One can have very little doubt that feeding has much to do with it. It is beginning to be surmised by many, indeed, that feeding by the periodical and frequent application of manures in a solid and liquid form has more to do with the constant production of good crops of Grapes than the original preparation of the border. A conversation took place, not long ago, among some good Grape growers, and it seemed to be generally conceded that, provided the border was of a healthy texture and composition, it did not matter much whether it was poor or rich, provided the feeding was frequent and ample. It was mentioned that one noted cultivator who believed in healthy crops was so confident on this point, that he contemplated planting some of his Vines in pure leaf mould and cow manure if he had not already done so, and of another it was stated that he attributed his success principally to the fact that he always kept a sack of guano steeping in his vinery tanks from which the borders were watered.

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That correspondent of a contemporary who labels himself "Special" no doubt appended the adjective by way of bringing out his personality a little better. He need not have had any doubts, however, about being recognised as something out of the common way. No "ordinary" correspondent who was a gardener would have made admission that he had to "scrutinise minutely" a three-quarter-mile herbaceous border in order to discover its merits. Nor is it to be wondered that our "Special" could "discern little beauty" in it. The queer thing about it is that Mr. McIntyre, who has so much improved the Victoria Park, "as far as it is possible to extend the hand of progress consistently with discretion," should have made a herbaceous border of such proportions and such character. Poor "Special"; stumbling upon such a border does not appear to be an event of every-day occurrence to him. He "was curious" about it. Is he quite sure it was a hardy border he saw?

Fennimore Cooper in one of his novels introduces a rather unsophisticated naturalist who, always pursuing his vocation in season and out of season, one night encountered an animal which appeared, against the clear moonlight, to be of such protentious shape and size, that his first thought was to find his tablets, and take down a description of what he regarded as a new and wonderful addition to the vertebrate family, but which, on his return to the camp, he discovered had been the donkey which carried the luggage during the day and had been turned out to graze. We sincerely trust our "Special's" first impressions of a herbaceous border may in time come to be similarly modified and corrected. Hopes are to be entertained of him if he will only extend his peregrinations. His minute descriptions of those formal beds he came upon is too tiresome to wade through, but we gather that his idea of what is "unquestionably a work of art" in gardening was a succulent round bed "in three tiers," which was planted with the usual occupants of such designs. The narrative, for it cannot be called a descriptive report, of our specially-commissioned reporter smacks immensely of your local newspaper man, to whom carpet beds, Prince's-feather, and Feverfew, &c., always appeal strongly, and whose "we comes," "come nexts," "now comes," and "must not forgets" always convey the idea of a guide and chaperone within call, and with the names of things at his tongue's end.

Of all wearisome reading on horticultural topics nothing surpasses these particularised reports of bedding in large places; very few people trouble to read them, and to fewer do they convey any clear idea of the effect produced. Reports of parks and gardens of note have always an interest for readers of horticultural papers, when they do not come quite too often, and it is seldom there is not something or other interesting or new to record by those who know where to look for information, but the everlasting particulars of no end of no way particular flower beds and such like weary the most patient reader.

PEREGRINE.

#### KINGSTON LACEY, DORSET.

FROM Wimborne Minster, a station on the South-Western Railway, the distance to Kingston Lacey is about four miles, a charming walk for a summer's day. Albeit it is very uphill, yet the beautiful trees that line the roads and lanes are sufficient protection to the wayfarer. The house overlooks the valley of the Stour and stands high, yet one is not sensible of it, as the park is level, and the ground is also level for some distance beyond, the highest point being the ancient British camp of Badbury, in itself worth the pilgrimage—the ditches as deep as an ordinary house, and the stupendous breastworks above, well cut from the chalk, would make it if armed one of the strongest fortresses in the world. An ancient palace of the Saxon kings formerly existed on the site of the present mansion, which is an elegant example of the Italian style. Near the gates and lodge is a very fine group of Cedars of Lebanon. I believe the young trees were brought from Lebanon, but it must have been many years ago, for they are of large size. This Cedar seems to me to be better adapted to park scenery than any other Conifer. The house is no great distance from the lodge on the Blandford road, and is concealed by a belt of trees till you are full upon the front—a well intended stratagem devised to surprise the visitor. Yet, although the house is all that could be desired, to my idea it does



not harmonise with the woodland scenery of England. It seems better adapted to the shores of Lake Como or the banks of the Arno, or even the Thames. The old perpendicular, with its labelled and mullioned windows, or the Elizabethan would be my choice in such a locality. The builder evidently had a great leaning to Italian art, for the same taste is shown inside as well as outside; the marble staircases, the painted and gilded ceilings, the pictures, carving, and all accessories are admirable. Some of the pictures, especially the portraits, possess great interest. There is one of Prince Rupert, the model of an English officer, showing undaunted courage and perseverance. A portrait of Charles the First, by Vandyck, in his best manner is well worth the amount inscribed on a small strip of paper and framed, to the effect that he acknowledges the receipt of £500 from Mr. Bankes, the proprietor of Kingston Lacey, in the king's own handwriting. There is a noble portrait of Philip the Second of Spain, by Velasquez, a painter with whose works we in England are hardly acquainted. There is also a landscape by, I think, Bergham—a mountain pass, with castle—one of the best I ever saw by this master.

But we came to see the gardens and conservatories—not the pictures. When the visitor arrives at the house he looks naturally enough for the gardens to be in the vicinity of the dwelling, as is usual in most cases, but at Kingston Lacey they are about a mile from the house, and until lately (about four years ago) very little glass existed here. The present proprietor appears to have made the resolve to remedy this defect, and now the Kingston Lacey houses are second to none in the county. The conservatories are arranged in the form of a square, the sides apparently being about 100 yards each. This seems an admirable arrangement; all the indoor work is, as it were, brought together, and it is not unlikely that a considerable amount of heat is thereby economised; on one side only is a lean-to house heated and devoted to Grapes. Several kinds are there. Black Hamburgh, Alicante, and Muscat of Alexandria are the chief sorts, and finer fruit it would be impossible to have than is at this moment in that house. Many of the bunches weigh from three to five pounds. The gardener, Mr. Loader, practises both the long-rod and spur system of pruning, and the result in both cases is entirely successful. One of the houses is devoted to pyramidal fruit trees, consisting of Plums, Pears, and Cherries. They are cultivated on the bush system, and the proof of success is that they are all absolutely fruited to the very ground. The other two houses contain Peaches and Nectarines, planted some little distance from the sides, so that there is a walk between the trees and glass on each side; thus the trees are trained towards the centre and form a beautiful arch and all are heavily laden with fine fruits. The brickwork is so arranged that arches are left for the roots to find their way into the borders beyond, and though, doubtless, everything was done to supply the roots with proper nutriment, yet the natural soil of the whole of Kingston Lacey is so favourable, that if the trees had had no artificial aid whatever they would have done well enough. The natural soil is loam, not a light yellow, but somewhat of a light brown colour, and as soft in the hand as flour—an advantage not possessed by many localities. The same kind of loam may be found in various places in the neighbourhood. The centre of this square is a flower garden, and the central point is a fountain. At the present time the show of Asters is most beautiful. One thing Mr. Loader insists upon, even with the advantages he

possesses, and that is cleanliness—plenty of soap and water being a course dreaded by all the pests and destroyers that intrude into glass houses. Notwithstanding their productiveness, it is, as I have said, but a few years ago since these houses were erected. W. T.

Dorset.

## THE GARDEN FLORA

### PLATE CCC.—THE MEGASEAS, OR LARGE-LEAVED SAXIFRAGES.

THE genus *Saxifraga* is one of the largest amongst hardy plants, embracing as it does an extremely wide variation as regards habit of growth, every intermediate size being represented, from the Lichen-like *S. squarrosa* to the largest of the Megasea or Ligulate section, that often attains 3 ft. or more in height, and the large *S. peltata*, the leaves of which are almost as massive as those of the Rhubarb.

The Megaseas or the Ligulate group of *Saxifraga* are entirely different in aspect to the dwarf sections. All the species are characterised by having large undivided leaves, of a leathery consistency, not fleshy, as the name *crassifolia* would lead one to imagine. These are attached to a stout stem, that either runs along the surface of the ground, or sometimes grows erect, which stems often represent the growth of a series of years, branching, of course, as the process of flowering goes on. They have but a comparatively local distribution, being confined to the Himalayas and the far-east mountains of Siberia, and possess no European or New World representatives. There are about a dozen species and varieties in cultivation, all of which are worthy of culture, and all, with the exception of *S. purpurascens*, grow without much care. These are

*S. CRASSIFOLIA* (Linnæus).—In this well-known species the leaves are large, broad, and obovate in shape, with the base tapering down the sides of the petiole. The margins are slightly indented, and perfectly free from hairs, as also is the surface of the leaf; its flowers are produced in dense paniced cymes, rising from the terminal shoots in showy pendent masses; they are of a light rosy colour with the slightest lilac tint, and they are produced in the months of March and April; in spite of the somewhat coarse appearance of the leaves, they form a very gay and useful accessory to the beauty of the spring garden. It is a native of the mountains of Siberia, and has been in cultivation since 1765. *Var. ovata*, as the name indicates, has oval leaves, the blades scarcely narrowing at all into the foot-stalks. It throws its flowers well above the foliage, which are of a deep rose colour. *Var. rubra*, similar to the last, but flowers of a deep tinge of rose. *Var. orbicularis*, sometimes ranked as a species is nothing more than a small growing form, with the leaves rather broader than those of *ovata*, and a more branching habit. A free bloomer, producing an abundance of light rosy flowers, which are well elevated above the foliage. *Var. media*, a distinct and ornamental variety, with large dark shining green leaves, bright rosy pink flowers, produced in very large clusters on strong stems, in great profusion. There is also a variety with variegated foliage called *aureo-marginata*.

*S. CORDIFOLIA* (Haworth) is by far the most frequently met with in cultivation, obtaining its name from the heart-shaped character of the leaves. Compared with *crassifolia*, the leaves are much larger, nearly as broad as they are long, and distinctly heart-shaped at the base, also indented along the margin with a series of rounded little notches. The inflorescence is

similar to *crassifolia*, but produced in bolder masses; the individual flowers are larger, not so pendent, and of rose colour without the lilac tinge. This is the plant so frequently met with in old shrubberies, where it grows in broad patches. It thrives under trees, enjoying the summer shade they afford, and are bright with the masses of pink flowers in early spring. It is a native of Siberia, and appears to have been introduced about the same time as the last species, but overlooked by Linneus, or perhaps considered only as a variety. *Var. purpurea*, a new variety, much finer than the type. The foliage is broad and handsome, and the stout flower-stalks rise high above it, bearing large dense clusters of rich pinkish-purple blossoms.

*S. LIGULATA* (Wallich) is a Nepaul plant with broadly obovate leaves, slightly crispate at the margin, and distinctly, but not densely, ciliated; the upper and under surfaces are glabrous. The flowers are produced in small cymose panicles, white, with a rosy tint towards the margin of the petals; the anthers, before expansion, are of a deep crimson colour, which adds much to the beauty of the flowers. Coming from Nepaul, and with the tendency to very early spring growth, it is liable to suffer from frosts; this form of injury occurring in three or four consecutive seasons so weakens the plant as ultimately to kill it; care, therefore, should be taken to give it a nice sheltered situation, where it may also have the benefit of a bit of shade. The varieties *rubra* and *speciosa* are finer than the type in every way, the latter being particularly so.

*S. CILIATA* (Royle).—Under this name two plants, perfectly distinct, are figured respectively in the *Botanical Register* and the *Botanical Magazine*; the former represents a plant with leaves devoid of hairs, except at the margin, where they are densely arranged, and hence give rise to the appropriate specific title; the latter represents a plant whose entire leaf surface is covered with an array of erect somewhat bristly hairs, rendering the ciliated character quite inconspicuous. Royle, in his description, says that the leaves are sometimes suffused with scattered hairs over the surface both above and below, but may it not be possible that he has mixed up two distinct species under one description? Taking *S. ciliata*, figured in the *Register* as the true one, and referring that of the *Magazine* to Lindley's *S. thysanodes*, the following is a brief description: The leaves are broadly obovate, slightly cordate at the base, perfectly glabrous on the surface, but margined with a dense array of somewhat bristly ciliae, accompanied by a conspicuous line of red colour; the flowers are whitish, not nearly as large as in the previous species, arranged in a lax branching panicle; the segments of the calyx are deeply divided and fringed with hairs. This plant comes from the Mussoree range of hills, where it grows at an elevation somewhat lower than *S. ligulata*, hence the cultural remarks given above apply equally to this species.

*S. THYSANODES* (Lindley) is undoubtedly the same plant as is figured in the *Botanical Magazine* as *ciliata*. It is of very dwarf habit; the leaves are broadly oval, supported on short thick fleshy petioles; they are covered with erect bristly hairs, both above and below; broadly crenate as to the margin, not cordate. The flowers are produced in small numbers on an almost simple inflorescence; the petals are of a creamy white colour tinted with crimson, short, expanded, and not unguiculate; the calyx segments are entire, not fringed; the scape is a beautiful bright crimson, as also is the tube of the calyx. This plant was sent home by Royle from the Mussoree Hills, and is a much more tender species than *ciliata*, but at the











same time more attractive, and well worthy the protection of a frame, or even a cool greenhouse.

*S. PURPURASCENS* (Hooker and Thomson) is, perhaps, the very finest of the whole section. It lays claim to Sikkim as its native habitat; there, at an altitude of some 12,000 ft. to 14,000 ft., it revels in atmospheric purity high above the *Rhododendron* zone of the Himalayas. Its leaves are smaller than any of the preceding, broadly ovate, perfectly glabrous and shining, with a smooth margin, neatly edged with red, the same colour being also conspicuous in the mid-rib. The scape rises to a height of 10 or 12 in., is considerably branched, and sparsely covered with dark glandular hairs; the flowers are produced in pendent masses, both calyx and corolla being alike as to colour, which consists of an unusual combination of red and purple. Though the plant is by no means a rapid grower, yet it possesses a good vigorous constitution, and is perfectly hardy. Unless increased by seeds it will be some time before it becomes plentiful in the country. Our plate was drawn by the late Mr. Noel Humphreys, shortly before his death, from plants flowering in Mr. Parker's nursery at Tooting, where this as well as all the *Megaseas* are grown well.

*S. STRACHEYI* (Hooker) is a strong-growing plant, somewhat closely related to *cordifolia*. The leaves are nearly as broad as long, slightly undulate; the margins obscurely indented, and lined with very short hairs; its flowers are produced in broad branching panicles, of a light pinkish colour with a shade of lilac therein. Its closest ally is *S. ciliata*, from which it possesses the following well-marked distinctions: A greater breadth of leaf as compared with the length; a more irregular arrangement of the leaves, which are supported on shorter foot-stalks, the blooming cymes being larger and more floriferous; and the plant, as coming from a higher altitude (some 12,000 ft. on the Himalayas) being hardier, and quite capable of standing our climate. It blooms in March, and should have in cultivation a special nook allotted to it, sheltered either by shrubs in the border or by protecting masses in the rockery, otherwise, if exposed to the bleak winds with which the month of March is usually and unhappily associated, the plant would soon be shorn of the delicacy and beauty of its blossoms. The species *crassifolia*, *ligulata*, and *cordifolia* with their varieties grow and flower in any soil or position, and are thoroughly hardy; but it is desirable to encourage their early-flowering habits by placing them in warm sunny positions, where the fine flowers may be induced to open well. They are perhaps more worthy of association with the larger spring flowers and with herbaceous plants than with dwarf alpine, and are well worthy of being naturalised on bare sunny banks, in sunny wild parts of the pleasure-ground, or by wood walks. They may also be used with fine effect on rough rock or root work, near cascades, or on rocky margins to streams or artificial water, their fine, ever-green, glossy foliage being quite distinct. They also make valuable pot-plants for decorating the conservatory in winter and spring. Plants well grown in a warm border during summer, and potted in autumn, would make handsome greenhouse or window plants in full flower soon after Christmas. It is easily propagated by dividing the old roots. In small gardens these plants should be both well known and well grown; and they are pre-eminently fitted for town gardens, as they do not appear in the least to mind the smoky atmosphere, but thrive well and bloom plentifully every year. G.

## THE FRUIT GARDEN.

### FORCED STRAWBERRIES IN AUTUMN.

I IMAGINE the time is not far distant when the forcing of Strawberries during the months of October and November, and perhaps also December—though that is too late to expect good-flavoured fruit—will become a common practice in gardens of any pretensions, or at least where Strawberries are forced in spring. The practicability of forcing the Strawberry in autumn has been long known and understood among gardeners, but it has not been considered an urgent matter, as other kinds of fruit are then plentiful, which is not the case in March, April, and May, when Strawberries are the most acceptable fruit on the dessert table. They would fill a gap, however, in October and November, when Peaches and Plums are pretty well over, and would doubtless be appreciated. Nor is their production so late in the season such a difficult or uncertain matter as it is in spring, for the plants are surer to fruit and need less forcing. Plants that have been forced in spring should be employed for autumn work. It is usual to plant these out for the chance of an autumn crop, and principally because they always bear well the following season, but for forcing they require to be potted. In order to be able to use the plants both for forcing and planting out afterwards, we have on some occasions shaken the plants out of their pots in June and July, or thereabout, and planted them out in good soil in a shallow frame. The plants grew and flowered well without any protection, and the lights were only put on the frame later in the season to ripen the fruit perfectly; and as soon as the crop was over the plants were planted out in the quarters. Of course they had then made great quantities of new roots, and when put out they were much in the same condition as they would have been had they been outside from the beginning. As it is, however, late before plants treated in this way can be planted out, they should be mulched, to protect the roots from severe frosts. In one case the plants bore a famous crop the following year; that is, three good and certain crops from the same plants, in little less time than twelve months. When planted in the frame at midsummer, the old forced leaves are shorn clear off, which induce a fresh growth and fresh vigorous flowers. We mention this plan of managing the plants, but it is hardly practicable when the fruit is wanted in November or later. In this case the spring-forced plants should be potted in July and August (they are apt to fruit too soon if potted earlier) and grown on in the usual way. Of course all the old leaves must be cut clean off, and the balls of old roots broken up and shaken out sufficiently to permit of the plants going back into the same sized pots again, and they should be potted in good soil. Many of the plants will produce flowers as soon as they begin to grow; but those early flowers should be pinched off, as they come to nothing—it is the flowers that appear after a fresh growth of leaves has been produced that bear the true autumn crop of fruit. This second and main crop of flowers is easily distinguished from the intermittent bloom that is cropping up here and there on the plants previously; the scapes are stronger and the flowers larger and more numerous, and the plants all flower at the same time, just like the outdoor plantations at the beginning of summer. Last autumn, in many instances, I counted as many as forty, fifty, and sixty good flowers on single plants of *Black Prince*, *Vicomtesse Héricart de Thury*, and *Keen's Seedling*, and where it succeeds *Prince of Wales* as well as other early kinds do just about as well. This will give your readers some idea what kind of crops they may expect from such plants. Much, of course, depends upon the weather, but it will hardly be found necessary to house the plants till they come into flower, unless it be later than the end of September or beginning of October, and when they are placed under glass, little forcing and less fire heat will be needed till the weather grows colder. A good deal will, of course, depend upon the time when

the fruit is wanted; but in any case no one can go wrong in treating the plants as forced Strawberry plants are generally treated, and a good deal may be done by pushing or retarding the crop according to circumstances. Those who think of going in for autumn forcing we should recommend to pot their plants at different intervals—say, one batch in July for coming in in September and October, and the remainder in August to succeed the October batches. I have here simply recorded the result of our practice as carried out occasionally during past years, for autumn forcing has not yet been reduced to a system with us, but in future it probably will be. Hitherto scarcity of kitchen garden space has compelled us to plant out most of our forced Strawberries for summer crop. J. S. W.

### TWO STRAWBERRY PLANTS IN A POT.

It is only under exceptional circumstances that the practice of laying two runners, or of placing two Strawberry plants in the same pot is advisable. The Strawberry is such a free-growing subject that if good runners can be laid anywhere during June, and the plants are treated with ordinary care, some four or five good sound crowns will be formed by the autumn, and where a Strawberry plant attains these dimensions it is quite large enough for culture under glass. In fact, I consider that three crowns are quite enough. In the case of a pot Strawberry there should be development enough of foliage to ensure the pots becoming well filled with roots by the close of the summer; more than this is scarcely desirable, or the labour of watering becomes too great a task, especially in the case of late crops, when the plants are during the swelling and ripening season subjected to the full force of a May sun. It sometimes happens, however, that when a large number of plants are required the supply of early runners does not meet the demand, and that runners made in July have to be taken. Occasionally, too, these are not quite so strong as one would like to have them, so that when laid into 6-in. pots they frequently fail to furnish the same satisfactorily by the end of the growing period. When such is the case, the grower will do well to lay two runners in the same pot, and if he so wills it he may in August lay three together, by which means he will by the end of September be provided with good specimens, each one having three good crowns, the said being well packed with roots. Some of the finest fruit I ever saw were grown on plants of this description. The plants intended to supply the runners were not put out until the beginning of June, so that the runners were late, but they were extremely vigorous, and I never saw plants carry off a crop so well as they did the following spring. When through any unforeseen cause runners are not forthcoming at the early date considered best for laying, or when they do not appear to be quite up to the work in point of strength, the best way will be to lay two or even more in a pot together, angling them so that each one stands in a measure free from its neighbour.

The great point is to secure a good plant capable of ripening off a fair average crop of fruit, and when through tardy laying or deficiency in vigour in the runners it is feared that they may not fill the pots full of roots or develop the desired fruit-bearing capacity, then make sure by putting two runners or two plants in the same pot. Better far have two good plants in a pot than one bad one, and this is sure to be the case if the single runner when laid has not time or rooting power sufficient to fill the pots full of fibres by the autumn. Happening sometimes to be short of plants of the late kinds, such as *Sir C. Napier*, we have often quite late in the season put two good healthy plants in a pot together, and generally speaking they have done very well. The best plan is to lay a strong runner early, but when this cannot be done, two runners or two plants may be placed together in the same pot.

J. CORNHILL.



**Strawberries.**—Can "Cambrian," as a practical man, seriously entertain the notion that two plants in a pot will produce more fruit than one? As to not "offering argument against the practice," I considered, and do still consider, the whole thing so preposterous as not to require argument, at least not to convince ordinary cultivators of the fallacy of the practice; but if, perforce, one must be argumentative, I will put the case thus: At the present moment we have some hundreds of plants, one in a pot, be it understood, the said pots being already so full of roots that on turning them out there is not a particle of soil visible, the roots are so matted together; what, then, would be the result were there two plants instead of one? The answer is palpable, viz., premature ripening, or rather starvation ripening of crowns to the proportionate deterioration of fruiting properties. No, no, "Cambrian;" the poetical allusion to the "two blades of grass" is not appropriate here. Should you think so, in the interest of horticulture you should put your theory into practice next year, and invite us to see the results.—W. W.

#### THE ORCHARD HOUSE.

Now is the proper time to pot maiden plants of all kinds of fruit trees which may be required for this structure. The pots need not exceed 8 in. or 10 in. in diameter; while trees that may have been shifted about this time last year may be placed in their fruiting pots, and these need seldom exceed 12 in. or 14 in. in diameter. In the case of older trees, which may have been some years in their respective pots, and to which rich elevated surface dressings have been applied, these latter should now be removed, and the exhausted soil will generally be found to be full of roots, which must also be removed to a depth, if possible, of not less than one-third the depth of the pots, while all roots which may have penetrated into the bed of soil upon which the pots have been placed must necessarily be severed, and this should be done carefully by a clean cut with a sharp knife. It is desirable that the pots in which fruit trees are intended to remain and bear fruit for many years should be provided with several holes in the bottom, in order to allow the roots to pass freely from the pots into the bed of prepared soil; for, although it is very desirable to encourage by rich surface dressings the production of feeding roots near the surface, it is nevertheless a safe practice to allow a certain amount of rooting into the border on which the pots are placed. I say a certain amount, because any tendency to over-luxuriance is readily checked at any time by merely raising one side of the pot and severing a portion of the roots.

It will, I think, be readily admitted that a plant with a portion of its roots at liberty to search for suitable food in a border of properly prepared soil is less likely to suffer from anything like neglect in the matter of watering than where it is entirely dependent upon what is given to it day by day. It is not, however, advisable to place newly potted trees at once upon a border of rich soil, as the roots might not unlikely pass into it before they had thoroughly filled the pots—a circumstance easily prevented by placing a slate or tile between the bottom of the pot and the surface of the border. The bed of soil on which the pots are to be placed should be well forked over and all roots carefully picked out, and, if considered necessary, the border should have fresh material added to it in the form of rich loamy soil, with an admixture of well-rotted manure, bone dust, or road scrapings, and should then be made perfectly level and somewhat firm, and the pots may then be placed in their proper position upon it, and such pots as have had the exhausted surface soil removed should have this at once replaced by fresh rich compost, composed chiefly of rich turfy loam and manure. Where plants of the Peach or other fruit trees are planted out in the borders of the house it is in most instances necessary to partially lift and annually subject them to more or less root pruning, according to the health or

condition of the plant, in order to prevent over-luxuriance and their occupying more space in the structure than is desirable.

When all has been finished in the way of potting and repotting, the pots, as well as the entire surface of the borders, should be neatly covered with dry Fern or light stable litter, which will exclude frost and drought, and keep all in a healthy and comfortable condition throughout the winter while all pruning should be deferred until spring. I am assuming that the orchard house is an unheated structure; but should this be otherwise, and should space in it be required for the purpose of wintering or bedding plants, &c., the fruit trees may then be placed as closely together as is possible in the coolest part of the structure, with the pots well covered with litter of some kind, so as to prevent as much as possible undue evaporation; and they may remain in this position until the buds show indications of returning spring, when all should be properly arranged, and the trees should then be pruned, and water carefully supplied to them as may be found to be necessary. G.

**The Hampton Court Vine.**—One sees, hardly with regret, that a large branch of this Vine is dying. The old Vine has played its part, and may well be permitted to die in ripe old age. Its bunches now are small and produced in too great abundance for the fruit to ripen well.—A. D.

**Strawberry plants for an acre.**—The number of plants required for an acre at any given distance apart may, says Messrs. Ellwanger and Barry, be ascertained by dividing the number of square feet in an acre (43,560) by the number of square feet given to each plant, which is obtained by multiplying the distance between the rows by the distance between the plants. Thus Strawberries planted 3 ft. by 1 ft. give each plant three square feet, or 14,520 plants to the acre.

**Vine growing in Germany.**—I was very much interested this year in the different modes in which they grow Vines in the wine country which fringes the Rhine for so long a distance. I observed them chiefly at Neuhausen on June 10, and found two modes of culture pursued. In the first instance the Vines were trained up a 6-ft. pole, and stopped at that height. Six or seven stems were trained up the pole from the same root, encouraging side growths for the fruiting wood. In the other method, one leading stem was grown up and bent down, and tied to the footstalk, so as to form a hoop, round which the growth was made and the fruit borne. It was too early to fully appreciate the full merits of these respective modes, but any of your readers who are now on the spot may perhaps enlighten us.—EDWARD H. ALLEN.

**Uprooting bush fruits.** In THE GARDEN (p. 223) "C. M. O." describes how steam power is used for rapidly uprooting timber trees. I have not seen steam power applied to such a purpose, but about here old plantations of bush fruits, such as Currants and Gooseberries, are uprooted by horse power; a chain is slipped round the stem of the bush, and the horse draws it out of the ground, a good portion of the roots adhering to it. After lying for a time to dry, the uprooted bushes are drawn together, and made into a bonfire along with hedge trimmings, weeds, &c., and the ashes make a valuable manure. The land is then ready for cultivating. In many orchards consisting of standard trees undercropped for a certain number of years with bush fruits, the latter are removed as soon as the shade from the standards becomes too dense for them to be productive, and then the land is sown with grass for sheep feeding. This system has many merits; the standard trees get up to a large size more rapidly when the soil is cultivated for several years after planting, but they are decidedly more prolific when the surface is converted into pasture as they attain mature age, or say 10 or 12 years after planting.—J. GROOM, *Linton.*

**Strawberry plants for forcing.**—A good beginning in this matter is of so much im-

portance, that most cultivators will agree that layering in small pots is better than taking up rooted runners; the plants are more vigorous, and ready for shifting into their fruiting pots earlier. As to the best sized pot for fruiting the plants in, much depends on the time when they are ready for potting, and when they are to be started. If a good crop of fine fruit is desired, the plants should be in as large pots as they will pack full of roots by the end of the season (a little earlier or later, according to the date at which they are to be started), but not larger. This year my plants were ready for potting by the middle of July, and those to be started first are now in 6-inch pots; the variety is Sir Joseph Paxton, and the second batch (President) potted at the same time are in 7-inch pots. If the plants had not been ready for potting before the end of July or first week in August, they would have been potted in 5-inch and 6-inch pots. Nothing is gained by putting the plants in smaller pots, for sufficient space must be allowed for the foliage. Certainly plants in 4-inch pots will occupy a little more space than those in 5-inch pots, but the fruit will be in proportion, and in a given space a greater weight of finer fruit will thus be obtained.—W. CRANE, *Quartertown Park, Cork.*

**Cause of Pear blight.**—Professor Burrill says that "the immediate cause of this disease is a living organism, which produces a fermentation of the material stored in the cells, especially those of the liber." Others have discovered this same organism, which is always present in trees affected with blight. But the matter does not rest here. It was necessary to know and not to guess that these organisms were the cause and not the effect of the blight. If they were the cause, it was reasonable to suppose that their introduction into a healthy tree would produce the same disease. That has been tested by experiment. An isolated acre of ground, on which were ninety-four Pear trees, was selected for the trial. One method of experiment was to cut off small portions of the diseased bark and insert the same into healthy trees. Sixty-three per cent. of all such trees took the disease. These experiments were varied, and every experiment tended to the same result. The peculiar form and character of this organism is well known. It requires glasses of great power to discover it, but with these there is no difficulty in understanding its true character. The yeast that is used in making bread contains the germs of vegetation that will propagate itself, under the right conditions of heat and moisture, so rapidly as to produce the desired effect of raising the bread. This principle in the yeast belongs to the same class as this organism in the blight.—*Country Gentleman.*

**Digging Strawberry beds.**—The present is decidedly the most favourable period for the digging up the intervening spaces in Strawberry beds, and where they are dug at all no time should be lost in getting the work done. In fact, the sooner it is done after the crop is gathered the better, for the custom of digging them in winter or spring does far more harm than good; and if unable through press of work to get them done before the end of this month, I would prefer letting them go entirely undisturbed at the root for the year round. Our custom is to plant out of pots such plants as have been forced under glass in rows 2½ ft. apart, and the plants 2 ft. apart in the row, digging the ground as we proceed, which, if in good condition, will not need any fresh manure; but before winter sets in a good coat of partially decayed manure is spread evenly over the bed, which acts as a protection to the plants from severe frost, and works in gradually to the roots, preparing them for a vigorous start in spring. This manure is left rough during the winter, and in spring is raked down fine, all weeds, stones, &c., being removed as soon as the growth of young foliage is observed. About the time the flower-spikes of the Strawberries begin to show, a good mulching of stable litter is worked in between the rows, that tends to keep the fruit clean and roots moist, while the rain in cleansing the litter washes down the nutritive properties to the roots, thereby greatly invigorating them, and



causing the plants to send up strong bold flower-stalks able to carry a full crop. After trying several other substitutes, I find nothing to equal stable litter, which at this time, when it has served the purpose for which it was intended, may be dug into the soil between the rows, and the same routine adopted the following year, after which, as soon as the crop is gathered, we cut off the plants with a sharp spade, and insert any kind of late Broccoli or winter greens, the soil being forked up between the rows after the plants get fairly established. Strawberries thus treated will yield enormous crops, but after the second year they begin to fail, and are no longer kept.—J. G.

**A few market Pears.**—Market growers are pretty well agreed that it is both capital and labour lost to plant choice dessert kinds of Pears as standards on the ordinary orchard system, for although the Apple does so well in that form it is only a very limited number of sorts of Pears that make healthy vigorous trees and bear regularly as standards. I have proved the following sorts to be well adapted for the purpose, viz., the Sweet-water or Chalk Pear, an early very prolific kind which scarcely ever fails; Green Chisel, an early useful variety; and the Lammas, a pretty Pear, and an abundant cropper, but one which only keeps good a few days; the Hessel or Hazel is a good continuous bearer, but perhaps the best market Pear grown is Williams' Bon Chrétien, a really excellent Pear, and when large and fine, as they are in some places this year, I question if any fruit tree that we can grow pays better. Marie Louise does well as a standard in some soils, and is of even better flavour than from a wall. The Ashdown Park or Crassane forms a fine drooping pyramid, and bears prodigious crops of really good flavoured medium-sized Pears; Verulam, a large stewing Pear, is also a profitable sort to grow; and the Windsor, Old Swan's Egg, and Autumn Bergamot are all good useful kinds. Amongst new ones, Fertility (Rivers) is highly spoken of; Jersey Gratioli is an excellent Pear, but if anyone wants to go in for collections of Pears they must have trained trees; dwarf pyramids or bushes would, however, in certain cases prove profitable.—J. G., *Linton*.

**Brushing the foliage off Peach trees.**—The question raised by "F. B." (p. 144) is an old one. I should say it is very seldom advisable to brush the foliage from outdoor Peaches in autumn, because out of doors the leaves are seldom or never ripe till they fall of their own accord; but it is different with indoor trees, and in regard to these I do not look upon "F. B.'s" "pressure" test as worth much, if anything. It is perfectly well known that any Peach trees, and trees under glass generally, carry their leaves green long after the wood is ripe, but the leaves are ripe and ready to fall nevertheless, and the slightest brush in any direction, or a good tap with the hand on the tree trunk, will bring them down in showers. I used to think it a wrong practice to brush the leaves off, but under these conditions I am now quite satisfied it does not do the slightest injury. The reason the leaves hang green so long after the wood is ripe is simply because they have not been subjected to the necessary degree of cold. I have noticed more than once in our late houses when a little heat was kept up in any of the divisions longer than on the others, as we have had to do occasionally, for the sake of a late crop of Tomatoes, for example, that the leaves remained on the trees, while in the divisions which had been thrown open to the air, they turned yellow and fell in a few days afterwards. The temperature will indeed make a difference of two or three weeks as regards the fall of the leaf. The same thing may be noticed out-of-doors in the case of our native trees; the leaves will remain comparatively green if the weather be warm and mild, but let one or two chilly nights come, or a slight frost, and forty-eight hours or less will bring them all down. It is also the same with early Vines, which, if healthy, keep their foliage on long after the wood is quite ripe and the crop is cut, and it is quite a common practice to prune

with the leaves on the Vines; no harm results. It is not safe to brush Peach-tree leaves off if the wood is not ripe and the leaves do not come away readily, but when a touch brings them off it will do no harm at all.—J. S. W.

**Espaliers.**—Mr. Roberts (p. 216) cannot surely have ever seen a good espalier or taken the trouble to consider the fact that a wall gives a tree a better climate! I never put a tree on walls that I find does well as a standard, but walls are essential for the successful culture of many fruit trees. I am afraid Mr. Roberts has only "looked over the garden wall" as regards fruit growing.—V.

## BOOKS.

### THE FIG, THE MULBERRY, AND THE QUINCE.\*

THIS is a useful pamphlet on these subjects by Mr. Fish, who gives their history, varieties, cultivation, and diseases. The following on the Fig house is instructive:—

A Fig house need hardly differ in size or form from a vinery or Peach house. A very good arrangement is to have a front roof trellis, reaching to about two-thirds of the length of the roof, the back wall in this case to be also covered with Figs trained to a single stem to a height of 3 ft. or more. The Figs should then be trained fan-fashion to cover the wall. With span-roofed houses a better arrangement can hardly be adopted than, say, 5-ft. borders all round the sides of the houses, furnished with bush Figs from 3 ft. to 6 ft. high, clothed to the ground, and having a path 3 ft. or more wide, according to the size of the house, leaving the centre to be furnished with large bushes or standard trees. Unheated figgeries can scarcely be recommended, as the protection of glass alone will hardly suffice to save the young figlets from destruction by winter frosts; besides, cool Fig houses would barely ripen one crop in our uncertain climate, unless extra care was taken in the admission of air, &c., as many orchard and other houses are far colder than a sunny south wall. With a very moderate amount of heat one good crop a year is rendered certain, and two are made possible. A Fig house should be heated to the same extent as an early vinery. Figs require a higher temperature to start them than either Peaches or Vines, and luxuriate when growing in a semi-tropical temperature and a very moist atmosphere. They will scarcely thrive well in a lower temperature than 55° to 65°, and in ripening 70° to 75° will assist in adding to their richness. When successive crops are running pretty closely on the heels of the ripe or ripening Figs, a sort of compromise must be struck between the two. The ripe fruit should have a high temperature and an arid atmosphere to finish it perfectly and prevent its rotting in the last or finishing stage; whereas the green fruit enjoys a semi-saturated atmosphere, and may be swept off the tree with a rush, should the temperature exceed 60°. The dropping of the growing crop may also proceed from dryness at the roots. The Fig, especially when grown in pots, may be treated as a semi-aquatic during its earlier stages. Overwatering near the finish produces a sort of wet rot near the upper end of the fruit. These are the chief and most vital points to keep in view in the culture of the Fig under glass. Of course, where only one crop a year is aimed at, the treatment of the Fig becomes more simple. When the plants are well furnished with fruit they require liberal feeding. Under all circumstances, a rather poor soil for Figs is best. Having plenty of these in good health, it becomes an easy matter to feed them with liquid manure or solid dressings of well-rotted manure. These, as soon as they have answered their purpose, may be either withheld or removed at pleasure; whereas, if Figs are planted in rich soil, they cannot be got out of it when their growth becomes rank or excessive.

Overhead syringing at least twice a day is most useful to Figs under glass. It keeps the leaves in robust health and free from red spider, a great pest when once it gets established. Before the fruit gets ripe syringing must, however, be dispensed with. Stopping the growing shoots is another most important point. Where only one crop a year is wanted, the shoots, as a rule, are better unstopped, unless where they are too strong or more wood is needed to fill up the space. Where two crops are wanted, stop every young shoot as soon as it has made three or five leaves. The results are twofold. The stopping sends back or retains—practically it matters not which—more nourishing sap into the swelling Figs. It also forces forth a young figlet in the axil of each young leaf, and causes them to grow much faster and ripen much sooner than if the young shoots had not been stopped. The next shoot should, however, never be stopped, unless a third crop of Figs is desiderated within the year. Some also pick out the end of vigorous dormant shoots before they break. This may be useful at times in breaking up its strength and producing several shoots of medium size instead of one strong one, but, as a rule, the practice is neither to be commended nor followed, as generally the Figs will produce sufficient bearing wood without it. With the proper stopping of the young and the vigilant removal of any weakly, useless, or worn out shoots during the summer, Fig trees under glass will need little or no pruning in winter. When the leaves fall they should, however, be thoroughly overhauled, and any useless snags or other matters removed. As brown scale also frequently attacks them under glass they should be carefully examined and scrubbed with soap and water if any scales or tracks of them are found. Then make up a smear of equal parts of soot, lime, and sulphur, with a dash of paraffin oil in it, and paint the whole tree. Keep the frost from the Fig trees throughout the winter, and start them in January or February if two crops are wanted, but let them start themselves if one will satisfy the cultivator.

**The Chandos Classics.**—Messrs. Warne have just added to their excellent and very cheap Chandos Classics H. Lockhart's "Memoirs of the Life of Sir Walter Scott."

**The Bijou Biography of the World** is a very interesting little book, published by Messrs. Warne. It contains 30,000 references to distinguished individuals past and present, and, like most of Messrs. Warne's books, we presume it is produced at a low figure, but this is not stated. No doubt publishers have a reason for not printing the price on their books, but we think the public would like the plan.

**Scribner's Magazine.**—We are sorry to see this magazine, which we have praised more than once, going from bad to worse as regards the illustrations. The proprietors prided themselves at first on the artistic variety of their illustrations, but now they are all alike, as Peas. The fact is that "Scribner's Magazine" was indiscriminately praised, and particularly for the work done that deviated from old European ways. So far as the cuts were right, European engravers were followed exactly, that is to say, such work as that of Whympers in London or Cooper, or Panne-maker in Paris. The so-called attempt to show the artist's work, which generally ended by spreading a thin calico texture alike over foreground and sky, is ending badly. The figures and faces are ridiculous. Whether this is owing to ignorance of the human face on the part of the engraver, or partly owing to large sketches being reduced by photography on the wood, so as to intensify such defects as they had on a large scale, is not always clear, but the lines of the face are dealt with most ignorantly.

**How to Make the Best of Life** is the title of a little work by Dr. J. Mortimer Granville, being one of a series published by David Bogue, 3, St. Martin's Place, Trafalgar Square. While some very sound remarks on health, breath-

\* Bazaar Office, 170, Strand.



ing, drinking, feeding, overwork, &c., are to be found in the book, and which to a thoughtful reader would prove of some value, there are a good many matters which, treated in so discursive a manner, are of none to the general reader. One's attention is simply *drawn* to the subjects enumerated on the cover of the book. The fact is, medical men—we presume the author is one—when they write for the public always feel bound to disclose as little as they can. To do the right straightforward thing is not etiquette. Then why write a book with such claims if the spirit of the profession is against the whole truth? It were certainly better not write than raise expectations which are not fulfilled. Even where the work is good and the words wise, as in the essay on eating, the total absence of any particular proofs or definite guidance as to what to avoid and use makes the work not at all so useful as one feels the author should have made it.

## A HOLIDAY IN DEVON. Powderham Castle.

WE catch the first glimpse of the turrets of this grand old building as we approach Starcross Station, from which it is distant about two miles. The kitchen garden is about a quarter of a mile from the castle, and contains within the walls about four acres. The fruit forcing houses are built against the upper wall, and the ground in front slopes to the south. The soil is very productive, as could be seen by the fine growth of such plants as Strawberries, Peas, Asparagus, &c. The plan of planting Asparagus in trenches at rather wide distances apart, so often recommended in *THE GARDEN*, is driving out the old bed system here, as in nearly every other place which I have visited of late years. The trees on the walls are being renewed piecemeal; thus a group of Morello Cherries, perhaps, may be renewed one year, next, a Plum wall is replanted, and so on, till the walls are all refurnished with healthy fertile trees. By doing the work in this way without haste it is well done, and the trees rendered more permanent. Excellent crops of Grapes were hanging in the vineries, both of Black Hamburgs and the later kinds, such as Alicante; and the young vines in a third house only planted last spring looked very promising. Peaches in the open air were not satisfactory, but some in an unbeated house built against the same wall were all that could be desired. The difference a covering of glass makes to Peach trees is truly marvellous. The conservatory, a handsome detached building standing on a terrace with grass slopes in front, and sheltered by trees, forms a special feature in the particular part of the grounds in which it is placed. It contains a fine collection of Camellias, each plant growing in a raised circular bed, which it fills, the lower branches drooping on the walls. The beds, which are about 8 ft. in diameter, are walled with brick, cemented, and have an ornamental rim, which gives them a vase-like appearance. These, with their occupants, form an avenue down the back of the house, and the plants being well grown have at all times a striking effect. Creepers cover the roof, Tacsonia Van Volxemi being particularly fine; *Luculia gratissima*, *Habrothamnus elegans*, *Bougainvillea glabra*, *Jasminum gracile*, *Plumbago capensis*, and *Stigmaphyllon ciliatum* (the latter a pretty yellow-flowered Brazilian creeper not often met with) covered walls and pillars with luxuriant growth and blossoms. There were also numbers of handsome standard Heliotropes and a very fine display of seedling tuberous Begonias. In front of the conservatory on the lawn was growing a small plant of *Araucaria brasiliensis*. It had withstood the late severe winter, and was apparently in good health.

The Grotto Garden is a very interesting spot, both on account of the fine trees which surround it and the beautiful view of the country which it commands. It is a wide open Grass plot that slopes rapidly to the south, with a gravel path running round its borders. At the upper end is the grotto from which it takes its name, and on either side of the entrance are what is believed to be the two oldest Camellias in England, said to have been brought to this country by Sir Joseph Banks. Though the last winter has punished them, there is yet much vigorous life in them. Mr. Powell, the gardener here, stated that in one day last year he cut 600 blooms from the larger of the two, a white one; the other is red flowered. The trees round this garden have been very skilfully grouped; forest trees form the background, and Cedars of Lebanon, purple Beeches, Cupressus Lawsoniana, Thujopsis borealis, Evergreen Oaks, Rhododendrons, &c., occupy the salient points in the foreground and middle distance. On the turf to the right of the path are two large Hydrangeas, just showing flower—they have suffered from the effects of the last winter but are still marvellously fine, and the flowers are always tinged with blue, a circumstance which denotes the presence of iron in the soil. The largest plant of the two has in previous years borne in one season as many as 700 trusses of flowers, a fact which will give some idea of the grandeur of such plants when in flower. There are beds of flowers—ordinary bedding plants—on the Grass in front of the grotto, but I could not help thinking that bedding plants in such a beautiful spot were rather out of place. The view across the vale of the Ken was exceedingly lovely, lighted up by the rays of the declining sun. In the distance was the picturesque village of Kenton with its beautiful church and fine Norman tower. Mamhead Park still further away seemed like a mere speck of verdure set in a framework of trees.

The Grounds are extensive, and the woods with their miles of walks are very charming. In some places so dense is the shade from overhanging trees that the full daylight scarcely ever enters. The river Ken, which flows through the grounds, widens out to a considerable stream, and as we follow the path that runs by its side we come upon two grand old Cedars of Lebanon, one a perfect specimen with a straight bole more than 20 ft. in circumference, its lower boughs overhanging and almost touching the water. The second, although as widely spreading, is not so handsome, as its trunk 4 ft. or 5 ft. up divides into several limbs, so that instead of possessing one straight majestic trunk there are several smaller ones, which detract from the grandeur of the tree. Near this spot are many handsome and rare trees, and turn which way one will the eye rests upon objects of natural beauty. On the rising ground on our right is a Tulip tree some 80 ft. high, and of grand proportions; to the left a fine specimen of *Abies Douglasi*; to the right again a purple Beech, somewhat hidden, and, therefore, toned down by the Tulip tree; a little lower still, projecting into the foreground, is a very handsome Cedar of Lebanon, and all around are groups of Rhododendrons and other shrubs. A little further up the hill is a fine specimen of *Magnolia acuminata* and a charming bed of Azaleas; still further to the left is a fine example of *Picea cephalonica*, and near it, in happy contrast, *Taxodium distichum*, whilst down below the dark waters of the river are lit up with the white flowers of Water Lilies. A little further on, but still in view from our position, is a very large Aspen Poplar, the leaves of which quiver and rustle in the breeze. Hollies do well here, and I noticed a

plant of the New Zealand Flax that has safely passed through the winter. A little further on we came upon one of the oldest trees of *Eucalyptus coccifera* in England; it is about forty years old, and although it appears to have suffered somewhat from the last severe winter, yet it has plenty of vigorous life in it yet. Altogether, it is a very striking tree, its silky gray bark giving it a peculiar and interesting appearance, though it is never likely to be of much value to the planter in this country. Higher up is a *Wellingtonia* 65 ft. high and 19 ft. round the bole—one of the best specimens I have ever seen. Oaks overrun with Ivy are common, but growing near one of the woodland paths is an Oak 50 ft. high with the common Honeysuckle clambering up into it and throwing out its wreaths of fragrant flowers from its topmost boughs. As we descend through one of the wide undulating glades we come upon a fine *Pinus Morinda* and a variegated *Wellingtonia*, not altogether happy; indeed, I have seen this tree planted in many situations, and it is never altogether satisfactory.

The Castle overlooks an elegant flower garden tastefully designed and planted, and beyond the flower garden the view extends over the well timbered park and adjacent country. One of the finest specimens of *Magnolia grandiflora* I have ever seen adorns the south side of the building. It is 70 ft. high, its breadth being in proportion, and its creamy white flowers scent the air. In the grounds near the Castle, a good specimen of the Cork Oak is a conspicuous object, and a fine *Cupressus macrocarpa* is associated with large plants of *Thujopsis dolabrata*, *Magnolia purpurea*, and *M. grandiflora*.

As we emerge from the trees on the open brow of the hill where stands the Belvedere Tower a new scene presents itself. Down in the hollow is the pretty village of Powderham, overlooking the river Exe. Away on the right in the far distance is the open sea; for a moment the eye rests on the white houses of Exmouth, then rapidly takes in the many interesting objects on the opposite shore of the Exe, which is here several miles wide. Nutwell Court, the residence of Sir T. Drake, is a conspicuous object; so is the pretty village of Lympstone at the water's edge; and further up the Exe valley we can distinguish in the deepening twilight the little town of Topsham.

**St. Leonard's Cottage.**—This, on the Topsham Road, is not more than a quarter-of-an-hour's walk from High Street, Exeter, and is noticeable more especially for its pleasant situation, and for the excellent examples of plant culture which are to be found in its stoves and greenhouses than for its extent. Unfortunately, both Mr. Lawless, the proprietor, and his gardener, Mr. Cole, were from home at the time of my visit, but I was conducted round the place by the under-gardener, and thus had an opportunity of seeing the best collection of exhibition plants to be found in the neighbourhood of Exeter. The *Ixoras* were especially fine. I noticed large plants of the following, either in flower, or full of buds coming forward, viz., *Ixora Dicksoniana*, princeps, Williamsi, amboynensis, Duffi, Colei, Prince of Orange, *salicifolia*, *coccinea superba*, and *Fraseri*. A noticeable feature was their freedom from bug and other insects and their luxuriant Willow-like growth and floriferous habit. Crotons were represented by some grand specimens good in colour. Heaths also were well done, though fewer in number than that of some other classes of plants. Palms and Ferns were in fine condition, full of health, and many of them of large size. I noticed many handsome *Gleichenias* and many fine plants of the usual kinds of Ferns seen at exhibitions. I took the size of a few, of which



the following are samples: *Nephrolepis davalloides furcans*, 7 ft. through; *Adiantum farleyense*, 5 ft.; *Davallia Mooreana*, 7 ft.; *Adiantum concinnum latum*, 4 ft.; and *Dicksonia antarctica*, 10 ft. Flowering stove and greenhouse plants were also remarkably well grown. *Allamandas*, *Dipladenias*, *Eucharis*, *Anthuriums*, and *Stephanotis* were in considerable force, and that useful old plant *Rondeletia speciosa* also was in good condition. In addition to being a first class plant grower, Mr. Cole also grows good fruit, for I saw some excellent Grapes and Peaches in the houses devoted to their culture. E. HOBDAV.

## TREES AND SHRUBS.

### SPRUCE HEDGES.

IN answer to "J. S." (p. 196), who seeks information respecting the Yew, the Spruce, and the Larch, for the purpose of forming hedges to afford shelter, &c., I may say that I should hardly consider the Larch suitable for this purpose. The common Yew makes one of the most ornamental of hedges, but it grows slowly, and ought never to be planted in any situation where stock of any kind is likely to obtain access to it. The Spruce grows rapidly, and with proper attention proves little inferior to the Yew as regards appearance, and quite equal to it in affording shelter. The common Beech tree is also very useful for this purpose, as when kept in the form of a hedge it retains its old leaves until the young ones are about ready to take their place. In some parts of Norfolk and Suffolk, where the land is so light and poor that quick or common Whitethorn which is generally employed for hedges, refuses to grow upon it, the common Scotch Fir is frequently used for the purpose, and generally answers well, but in the course of a few years the lower branches are apt to die off, a fault not possessed by the Spruce. If "J. S." was in this neighbourhood I could show him hedges formed of Spruce some 6 ft. or 7 ft. high, and from 15 years to 20 years old, which at a short distance off he would think were Yew hedges. The soil where Spruce is intended to be planted should be prepared by being deeply dug or trenched, and the trees may be put in any time between the beginning of October and that of March, but the first named month is the best. The plants should be healthy, young, and well furnished—i.e., plants which have been once or twice transplanted, and that have retained their lower branches, which will not be the case if they have been allowed to become crowded too long in nursery beds. They should be some 2½ ft. or 3 ft. in height, and should be planted at a distance of 2 ft. from each other; but if larger, this distance may be increased. But little attention will be required the first year after planting beyond freeing them from weeds, and as soon as growth commences, say towards the end of April, the hedge shears should be passed along each side so as to shorten the side shoots, and to some extent give form to the hedge. But the top or leading shoots should not be interfered with until they have attained the desired height, when they should be stopped, an operation which will induce the lower part to thicken or fill up; and at first the width should not be allowed to greatly exceed 2 ft., as the hedge, as it becomes older, will to some extent unavoidably increase in width. The main stem of the Spruce being pretty strong, the hedge may be allowed to grow to any desired height, and it may also be allowed to assume any desired form, such as wide at bottom and tapering towards the top, or in what is known as the hog's-mané form; or it may be made, as it were, to form a dark green wall of any reasonable height, and exactly the same width at top as at bottom. The latter form is certainly the most ornamental. Such hedges must be annually clipped with the ordinary hedge shears, an operation which should be performed in August, or, if great neatness is

desired, twice in the season, say in July and October.

Bury St. Edmunds.

P. GRIEVE.

**The variegated Thorn.**—We have fine trees of the variety referred to by Messrs. Saltmarsh & Sons (p. 220), but, as a variegated tree, I do not consider it a success, as after the first few weeks the foliage becomes dull and rusty, and not by any means striking or distinct compared with Maples, *Cornus Mas variegata*, &c. It is no improvement on the type in the general sense of the word.—J. G., Linton.

**The variegated Dogwood.**—There are now several good varieties of *Cornus*, or Dogwood, that make beautiful shrubs, either as single specimens on Grass, or in the foreground of mixed shrubberies. *Cornus alba sibirica variegata* is very pretty, and a newer variety, called *Cornus Mas aurea elegantissima*, is a beautiful addition to this useful group. They are thoroughly hardy, and the beautifully variegated foliage assumes lovely tints in autumn, rendering this Dogwood a most effective object in the pleasure ground.—J. G. L.

**Longleat timber sale.**—This annual sale of timber, saplings, poles, and faggots took place at the Bath Arms Inn, Horningsham, on the 23rd ult. The result on the whole was fairly satisfactory considering that the timber was mostly of small dimensions and of second class quality. Oak hardly realised so much as last year. Ash is still in demand and was well sold. Beech is in no great request; it went for exactly the same price as last year. Larch was in good demand. For Scotch, Spruce, and Silver Fir the trade is dull. Saplings and poles sold remarkably well for pitwood. Faggots fetched a fair price. The timber trade generally is far from being in a brisk state. The following are the average prices realised:—

	Average contents.	Prices ranged from		Average price per ft.
		s. d.	s. d.	s. d.
Oak timber . . . .	13 feet.	1 2½	1 9½	1 5½
Ash timber . . . .	11 "	1 6 "	3 6 "	2 "
Beech timber . . . .	34 "	6 "	9½ "	7½ "
Sweet Chestnut timber	11 "			11½ "
Larch timber . . . .	10 "			1 0½ "
Weymouth Pine . . .	17 "			8½ "
Scotch, Spruce, and Silver Fir . . . .	21 "			6½ "
Oak and other saplings . . . . .		2 2 "	6 5 each	
Larch poles . . . .	2s 8d ea.			
Fir poles . . . . .	2s 0d "			
Faggots . . . . .	18s 0d per hundred of six score.			

G. B.

## GARDEN DESTROYERS.

**Protecting trees from rabbits.**—Mr. McCorquodale, writing in the *Journal of Forestry*, recommends the use of common gas or coal tar properly prepared for this purpose. Before using it, it should be thickened by boiling to such a degree, that when cold it would barely soak through any cotton or woollen cloths dipped into it. When using it the operator should have the tar by him in a bucket, and it should be applied not by a paint brush, but by a large cloth rag, alone, in the bare hand, just as if he were washing the young tree stem with water, and not coating it with tar, and a man should be able in this manner to do 450 trees or thereabouts in a day. It should not be applied when the trunks are wet, and warm dry weather is the most suitable. If the tar is too thin it may not only soak through the young bark too much, and prove more or less injurious, but it is so much more perishable, being less able to withstand our variable climate than when it is thick. As often as it is found too much faded, a fresh coat in a similar manner should be applied. Where appearance is of importance, young trees should be planted within rabbit-proof wire netting enclosures, or each tree should have a wire-netting guard round it, say 2 ft. high by 5½ in. diameter,

painted green or grass-colour, and tied to light rough wooden pegs, driven into the ground, for say 6d. each; and might, with but little care or attention, suit for similar purposes for many years.

**Identification of a hitherto unknown garden enemy.**—Some time ago I thought it advisable to warn growers of tuberous Begonias through the columns of THE GARDEN of the necessity of examining their tubers carefully from time to time while at rest during the winter, and especially when repotting them in the spring, and carefully searching for and removing therefrom, if found, a fortunately conspicuous white larva of some unknown insect which, if left undisturbed, bored a hole through the tuber, often causing it to rot. This same larva is most destructive to all members of the Primula family when grown in pots, frequently killing the plants altogether. Its identity has at length been determined by a doctor in the French navy named Roussel, apparently a learned entomologist, to whom specimens were submitted by M. Pondaven, of the Brest Botanic Garden, who writes to the "Révue Horticole" that the larva is that of one of the family of Coleoptera named *Otiorhynchus sulcatus*, a native of the south of France, and, unfortunately, of enormous fecundity.—W. E. G.

**The Pine sawfly.**—A short time since, says Miss Omerod in the *Journal of Forestry*, I received a large spray laden with an enormous number of caterpillars of the Pine sawfly (*Lophyrus pini*), and having waited till they were apparently perfectly recovered from the journey, and were feeding heartily, I tried the effect of syringing them with a mixture of a piece of common washing soda, about the size of a large walnut, dissolved in two gallons of water, in which there was a little soft soap. This was a remnant left at the bottom of a pail, so the quantity was not exactly appreciable, but it was somewhere about the sixteenth of a pound. Many of the caterpillars fell off at once, but I picked them up, and gave them all a second syringing, and in a short time they became motionless, and in ten minutes all appeared to be dead. On careful examination next morning two were found still to have the power of crawling, the others appeared to be either dead or past recovery, and I was informed that a packet of them returned to the sender as an example of the effects of treatment were all quite dead on arrival. I noticed that the mixture was fatal in proportion to the extent to which it was allowed to remain (or to dry) on the caterpillar. Such as remained thoroughly wetted with it on the spray, and on which it gradually dried—died; also those which had fallen off and remained gradually drying appeared more certainly and rapidly destroyed than a selection which I laid out on a sheet of blotting paper, so that the destructive mixture was partly absorbed. I think this would be serviceable treatment for young trees in nurseries, as the large number that fall (as far as experiment goes) clear the attack very much at once, and the wash clinging amongst the leaves is very detrimental to the caterpillars remaining, both as an external application, and from the effects of such amount as they cannot avoid swallowing. It is well worth bearing in mind that most of the sawfly caterpillars when full fed go down into the ground to form cocoons; but sometimes, as with Pine sawfly, some of the cocoons may be formed on leaves, or crevices of bark, or, as with Turnip sawfly, the summer broods may soon come up again. It is, however, very likely (speaking of the kinds of which we have not yet the life-histories worked out in this country) that, as with Gooseberry sawfly, the grubs turning to chrysalis may remain unchanged through the winter, and from which the sawfly will appear in the following spring. Where this is the case (for instance, under infested Elms) a good scraping of the soil and throwing down a dressing of caustic lime, or, better still, a thick sprinkling of gas-lime, that has been about two months exposed to atmospheric action, would be highly beneficial, either in winter or summer.



## THE ROSE GARDEN.

## ROSE BUDS.

WITHIN a month from the time of budding it is well to go over the plants and remove or renew the ties. Where the buds have taken and the wounds healed, the ties should be taken off. But where the uniting process is not quite completed, a new and looser tie should be substituted for the older one. In all cases, too, where there is any doubt about the union being complete, a fresh tie should be given. As the sudden exposure to the sun of only partially healed wounds often causes them to open afresh, and renders them very difficult to heal, this untieing is really all that should be done, except in special cases, such as when the Brier seems to be taking away most of the strength from the Rose, or when the Rose bud has already burst into a shoot. In the former case the point or a portion of the Brier should be pinched out or cut off; in the latter the end of the shoot is better pinched off after it has made three or four leaves. The stopping of the Brier shoot causes the bud to fill the better and the sooner. This practice should seldom be resorted to in the case of early-budded Roses, as it might force the buds to break into shoots; but with later-budded plants it is safe and also useful. For at times these do not plump out so much as to produce vigorous breaks the following spring. Most Briers budded in August may be safely stopped in this way early in September. The pinching in of the Rose shoots prevents their being blown out by the wind in cases in which they have not been tied to stakes attached to the stem or branch of the Briers. The weight of the Rose shoot alone seems almost sufficient to wrench it from the Brier, when the union between the two can hardly be said to have grown into solidity. The stopping of course reduces the weight to very small proportions, the three or four leaves left affording but slight purchase for the wind. But this practice has other and more permanent advantages. Started buds left un-stopped mostly throw their strength into the crowns of the shoots. Their vital force is not seldom thrown away in flowers, which amateur budders are proud of pointing to as triumphs of skilful budding, but the production of which experienced budders discourage. And if these premature shoots do not flower, their best buds are almost sure to be found on their growing extremities. The result is that when cut back in the autumn or spring they break weakly from thin and undeveloped buds at their base; whereas, by stopping the shoots, the bottom buds are all well developed. Consequently, the following spring these are ready to produce a good shoot each, and thus lay the foundation of a healthy symmetrical Rose tree or bush the first season. On the whole, there is no doubt that dormant buds yield as a rule the best results. But some Roses are so excitable, that almost before they have taken to their new quarters they begin to grow; and wherever such is the case the pinching plan is far better for the future plant than letting them run.

**Spring and summer treatment.**—Early in February or in March, according to the season and locality, just before any great growth is made, cut back the Brier to within 3 in. of the Rose bud. In a week or so, after the Rose bud has started, disbud the Brier beyond it, so as to throw the whole of the sap into the Rose. If the Brier is beheaded too soon or cut too close to the Rose bud, the latter does not grow so well. By allowing the Brier to start, the whole of the roots are aroused to action, and thus the growing force of the plant is diverted into one or more Rose buds. The few Brier buds left ahead of the Rose are useful for a time in drawing up the sap and preventing a paralysis of root action, were the plant cut back to a dormant bud. They also prevent the drowning or flooding off of the buds, which not unfrequently happens when one bud is forced to receive all at once the food of so many. As the first sap has but little healing power or virtue, no time is lost by leaving the final shorten-

ing back of the Brier and the Rose bud till May or even June. The Rose then in active growth will speedily heal the wound, and long before winter the Rose plant is thoroughly established, and has taken complete possession of the Brier—in a word, becomes in fact a Rose only. But never is the proverb, "More haste, less speed," more true than in regard to the rapid conversion of the Brier into a flowering Rose within three months or so of the time of budding. D. T. FISH.

## DATE OF FLOWERING OF TREES AND SHRUBS IN NEW ENGLAND.

THE following record of the time of flowering and fruiting of hardy native and introduced trees and shrubs in the vicinity of Boston, Massachusetts, has been made chiefly at the Arnold Arboretum, West Roxbury; the Botanic Garden, Cambridge, and from trees and shrubs growing naturally in Essex County, during the year 1880. Unless otherwise mentioned the time of flowering is intended. A few warm days in January sufficed to develop the flowers on the Red and White Maples, and the catkins on some of the Alders, Willows, and Poplars were quite conspicuous; but the season of flowers can hardly be said to have commenced before the first of April.

Mar. 20, Corylus Avellana	May 3, Salix tenuifolia
Corylus americana	Salix cordata
Alnus incana	Salix triandra
Alnus glutinosa	Salix purpurea
April 1, Populus alba	Salix Andersoniana
5, Populus tremuloides	Abies balsamea
Acer rubrum	Thuja occidentalis
Salix discolor	4, Ostrya virginica
6, Epigaea repens (for sale in Boston streets)	Berberis Aquifolium
13, Salix viminalis	Amelanchier canadensis
14, Ulmus americana	Amelanchier canadensis var. oblongifolia
Salix caprea	Salix alba
Salix acuminata	Salix fragilis
Salix stipularis	Magnolia Lemnii
Salix Forbesiana	May 4, Fraxinus excelsior
Salix ferruginea	6, Picea alba
Rhododendron chrysanthum	Vaccinium pennsylvanicum
Rhododendron dauricum	Juniperus virginiana
Corylus rostrata	Fraxinus americana
Cornus mascula	7, Pyrus Malus var. floribunda
Shepherdia argentea	8, Fraxinus pubescens
Daphne Mezereum	9, Daphne (theorum)
Erica carnea	Betula lenta
15, Salix humilis	Betula alba var. populifolia
Ulmus campestris	Prunus pennsylvanica
16, Andromeda japonica	Vaccinium corymbosum
Forsythia Fortunei	Arctostaphylos Uva-ursi
19, Larix europea	10, Salix babylonica
Larix leptolepis	Spirea prunifolia
21, Laurus Benzoin	Spirea oblongifolia
Andromeda floribunda	Cercis japonica
Ulmus montana	Berberis Thunbergi
Salix sericea	Vaccinium corymbosum (tall form)
25, Populus grandidentata	Sassafras officinale
Populus balsamea var. canadensis	Celtis occidentalis
Populus dilatata (Lombardy Poplar)	Rhodotypos Kerrioides
April 25, Myrica Gale	Sambucus pubens
Cassandra calyculata	Sambucus racemosa
Dirca palustris	Celastrus Orna
Salix livida var. occidentalis	Kerria japonica
Salix tristis	Acer glabrum
27, Corema Conradii (at Plymouth, Mass.)	Acer polymorphum
Magnolia conspicua	Rhus aromatica
Larix americana	Xanthoxylum americanum
Acer platanoides	Cotoneaster vulgaris
28, Magnolia Soulangiana	Amelanchier vulgaris
May 1, Prunus domestica	Lonicera caerulea
Vinea minor	Ribes prostratum
Chamaecyparis sphaeroides	Prunus spinosa
Prunus americana	Pyrus japonica
Ribes rubrum	Betula nigra
Buxus sempervirens	Betula papyracea
3, Prunus persica	11, Lonicera tatarica
Berberis repens	Cornus florida
Lonicera ciliata	(bracts opening)
Erica carnea	May 11, Pyrus baccata
Ribes cereum	Pyrus Malus
Ribes aureum	Picea excelsa
Spirea Thunbergi	Rhododendron Rhodora (R. canadensis)
Nesundo aceroides	Thuja (Biota) orientalis
Betula lutea	
Acer saccharinum	

May 11, Fagus ferruginea	May 21, Rhododendron (Azalea) nudiflorum
Acer pennsylvanicum	Rhamnus cathartica
Rhododendron (Cunningham's White)	24, Euonymus americanus var. obovatus
Taxus baccata var. canadensis	Euonymus pulchellus
Syringa vulgaris	Lonicera diversifolia
Comptonia asplenifolia	Lonicera Maximowiczii
Ptelea trifoliata	Berberis sibirica
12, Juniperus Scedolii	Berberis canadensis
Crataegus coccinea	Berberis sinensis
Staphylea Bumalda	Berberis petiolaris
Pyrus arbutifolia	Berberis dulcis
Schizandra sinensis	Berberis vulgaris
Ribes floridum	var. purpurea
Prunus maritima	Berberis emarginata
Lonicera Ruprechtiana	Ptelea angustifolia
Andromeda polifolia	Spirea alba
Canadensis microphylla	Spirea botulifolia
Quercus dentata	Spirea Fortunei var. Van Houttei
Pyrus spectabilis	Spirea anemoneifolia
Cornus sibirica	Juglans cinerea
Spirea heizata	Cotoneaster microphylla
13, Esculus flava	Morus rubra
Esculus Hippocastanum	Morus nigra
Chamaecyparis (Retinospora) pisifera	Syringa persica
Prunus Cerasus (double)	Rhamnus infectoria
Halesia tetraptera	Acer tataricum
Crataegus tomentosa	Viburnum Opulus
Quercus Robur	Menziesia globularis
Quercus rubra	Rosa alpina
Quercus coccinea	Rosa blanda
Lycium vulgare	Pinus strobus
Juglans regia	Gaylussacia resinosa
14, Rubus deliciosus	Neviusia alabamensis
15, Quercus tinctoria	Cytisus purpureus
Picea nigra	Spirea perovskiana
Pyrus aucuparia	Smilax rotundifolia
16, Salix nigra	Calycanthus floridus
Salix lucida	25, Spirea trilobata
Ribes oxycanthoides	Viburnum plicatum
Quercus ilicifolia	Viburnum Lentago
Quercus bicolor	Crataegus Oxycantha (double and single white and pink)
Quercus alba	Rosa rugosa
Platanus occidentalis	Viburnum Opulus var. Snowball
Vaccinium vacillans	Rhododendron (Azalea) mollis
Wistaria sinensis	Rhododendron (Azalea) pendulum
17, Carya alba	Rhododendron (Azalea) calendulaceum
Carya tomentosa	Pyrus hybrida
Pinus pungens	Deutzia gracilis
Esculus flava var. purpurea	Pinus Pumilio
Lonicera Mariana	Pinus Lariois var. austriaca (Austrian Pine)
Lonicera involucrata	Pinus resinosa
Acer cissifolium	Laburnum vulgare
Xanthoxylum applifolia	Myrica cerifera
Esculus Hippocastanum (double)	27, Robinia Pseudacacia
Acer spicatum	Chionanthus virginica
Magnolia acuminata	Diervilla (Weigela) rosea
Acer circinatum	Ledum latifolium
Acer Pseudoplatanus	Leucothoe Catesbaei
Pyrus (Cydonia) vulgaris	Magnolia Fraxei
Salisbury adiantifolia	Magnolia Umbrella
Spirea obovata var. hypericifolia	Rosa pomifera
19, Cryptomeria japonica	Gaylussacia ursina
Pinus sylvestris	Tamarix gallica
Crataegus subvillosa	Lonicera caprifolia
Exochorda grandiflora	Cornus alternifolia
Leopodium buxifolium	Calycanthus glaucus
Cornus sibirica	Calycanthus Levigatus
Caragana arborecens	Rhododendron Catawbiense
Chamaecyparis (Retinospora) obtusa	Berberis Fendleri
Rhamnus lanceolata	28, Rubus villosus
Rosa acicularis	Rubus hispidus
Pterocarya fraxinifolia	Pinus parvifolia
Morus alba	31, Rhus Toxicodendron
Pinus inops	June 2, Magnolia glauca
Pinus Banksiana	Philadelphus hirsutus
Acer tataricum var. Ginnala	Viburnum acerifolium
Carya amara	Colutea arborescens
Ribes nigrum	Nyssa multiflora
Ribes lacustre	Celastrus scandens
Ribes grossularia	Amorpha frutescens
Ribes rotundifolium	Philadelphus coronarius
Fothergilla alnifolia	Crataegus pyracantha
Vaccinium stamineum	Gleditsia triacanthos
20, Paeonia Moutan	Rhus cotinus
Prunus virginiana	Vitis Labrusca
Cornus florida (true flowers)	Rosa (garden varieties)
Berberis vulgaris	



## THE KITCHEN GARDEN.

## MONA'S PRIDE POTATO.

THIS variety was recommended by me some years ago. I have planted it ever since, and experience more than confirms the value of the advice then given. I wish to recall the special habit of the Mona's Pride on which the advice was grounded. There are more important points connected with or dependent on it than we might suppose. The habit under review is that of concentrating its productive powers on a few tubers rather than on the far greater number which distinguishes Myatt's Ashleaf and others. One result of this was pointed out. Those few tubers are of size for table use at an earlier date than the larger number which are produced by Myatt's or Rivers' Ashleaf. Mona's Pride is thus, in effect, an earlier Potato than the others. But that which principally induced me to give it a trial was its probable fitness, on account of that habit, for my poorish soil. It contained the germ of a promise that the general crop at maturity would on such soil be of more useful size, and therefore a more valuable crop than the more prolific kinds would yield. This expectation has been fully verified, and in no way more convincingly than in forking up the weaker and feebler plants, which yield two, or three, or four tubers large enough for seed or table use, instead of a cluster of starved and useless things. Next, as to loss by disease. I grew first bushels and then sacks, year by year, of Mona's Pride after reading the short article in the *Field* concerning it, and I have not had as many diseased tubers all that time as might be numbered by the years I have grown it. This exemption is evidently connected with a tendency to early maturity. Some reader may call to mind the advice years ago to plant large breadths of the earliest kinds, which might produce their crop before the arrival of the disease. The lesson afforded by Mona's Pride teaches us to look for such early maturity in limited productiveness. They seem to go together. My Mona's Pride are now ripe, or nearly so, while Rivers' Royal and Veitch's Ashleaf, grown for experiment and comparison, are yet green. Myatt's, much more prolific, is also longer lived, and July rains, which usher in the disease, bring it under the destructive action of the disease by exciting it to renewed growth. Some years ago I had this result most disagreeably impressed on my mind, after looking for the rain to improve the crop of Myatt's. Although this year the heavy cropping early kinds seem likely to prove exceptionally valuable, yet the persistent visitation of disease teaches us not only to cultivate Mona's Pride largely, but to aim at limited productiveness in new kinds of early Potatoes. I had a valuable early round Potato in Cheshire thirty years ago, which I unfortunately lost, on removing to the south, which never bore above six or eight tubers, and evaded the disease by ripening out of its way. The real notable point in both cases is, that this action does not seem determined only by time, as though it were due to the Potato happening to be ripe when the disease comes. It is probably due to incipient ripeness that the fungus is slow in laying hold of the foliage; but when it does, the haulm ripens off at once, and that so suddenly as to show that the ripening has been accelerated by the attack. It is needful to add that earliness of maturity has been aimed at always in my treatment of this Potato, both as regards soil and management, and I cannot say what result might follow on an opposite course of treatment.

—J. M. TAYLOR, in *Field*.

**Late Peas.**—I find that Peas sown on June 1 are much more satisfactory than those sown later in the month; the latter blossom and form plenty of pods, but do not fill up so well as those sown on the date just named. From repeated experiments I find June 1 quite late enough to sow for main crops of Peas, from which we always keep gathering as long as the weather remains mild enough for them to make any growth. This year we sowed our main latest crop on June 2 in

trenches, well manured, as if for Celery, scattering the seed thinly all over the trench, so as to make a broad row. The plants were staked as soon as high enough, and the soil between the rows, which are 6 ft. apart, was covered with long stable litter to retain moisture, the soil being very dry at that date. By means of copious waterings a rapid and luxuriant growth was the result, and they are now bearing a fine crop, which promises to last as long as green Peas are procurable out-of-doors. The sorts which we grow principally are Ne Plus Ultra and Champion of England, both kinds difficult to surpass either for quantity, quality, or continuous bearing. Ne Plus Ultra is an especial favourite in the kitchen from its deep green colour, and if confined to one sort I should prefer it to all others. For late tall Peas good supports are necessary, and I find Chestnut branches much more durable than Hazel, as they are perfectly sound the second year, while Hazel only lasts the season.—J. G., *Linton*.

## CLUBBING.

"A SUBSCRIBER" writing to us says: "My Cauliflowers, which were all very good, are getting lumped at the root and dying. What is the cause? and is there any preventive?" Accompanying his letter was a small box containing a sample of a diseased root, its clubbed deformity, equal to the size of a good Potato. In some seasons clubbing is more prevalent than in others, and the present may be one of them. This abnormal and diseased condition of the root and stem in Cauliflowers, Cabbages, Turnips, and other cruciferous plants is only too familiar under the popular name of "club root," and "clubbing" or "finger and toe" in the case of Turnips. It has hitherto been generally attributed to insect agency. Stem or root punctured, egg deposited and hatched in the interior, and consequent derangement of sap and tissue, causing the abnormal gouty, unhealthy development of which our correspondent's specimen is a very good example. The long-accepted belief in insect agency has been permitted to remain unchallenged, and a microscopic fungus analogous to that which plays such havoc with the Potato is by some credited with being the cause, at all events in the case of finger and toe in the Turnip. This theory obtains among Continental microscopists, notably by M. Woronin, of St Petersburg, who does not fail to support his theory by very plausible arguments and carefully conducted experiments. So much for our correspondent's inquiry as to the cause; and now for a reply to his second and practically important question as to a preventive. He says nothing of cure; rightly too, for we apprehend there is none. Well, in the way of prevention, we would suggest, in the first place, not to plant Cabbages or Cauliflowers in the same ground, but allow a considerable interval, during which crops of a quite distinct kind should take their place. Secondly, to pare lightly the surface and burn, and in digging or trenching to incorporate with the soil a very liberal dose of hot lime, slaked on the spot, and worked in while hot or nearly so. Thirdly, in lifting the plants from the seed beds previous to planting, to examine each carefully and reject and burn any showing, or suspected of showing, the least trace of the malady. Fourthly, when planting, have at hand a bucket or other vessel containing a very thick paint or puddle comprised of yellow or sifted clay and soot (sulphur, wood ashes, or both, if convenient, might, we apprehend, be advantageously added), and dip the roots and stem of each plant up to the base of the leaves before planting. Puddling the roots of Cabbages before planting is a very old practice and a very good one.—*Irish Farmer's Gazette*.

**Cauliflowers.**—Like "E. H.," I am cutting Cauliflowers dwarf, white and firm; not, however, from seed sown in December, but sown at the end of March, and planted out where watering was

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| June 3, <i>Philadelphus coronarius</i> var. <i>nanus</i><br><i>Philadelphus grandiflorus</i><br><i>Andromeda Mariana</i><br><i>Rubia viscosa</i><br><i>Buckleya distichophylla</i><br><i>Rosa rubifolia</i><br><i>Rosa spinosissima</i><br><i>Rosa multiflora</i><br><i>Aristolochia Siphon</i><br><i>Cornus circinata</i><br><i>Jonesia americana</i><br><i>Lonicera flava</i><br>5, <i>Hudsonia tomentosa</i><br><i>Rosa cinnamomea</i><br><i>Rosa pimpinifolia</i><br><i>Rubus strigosus</i><br><i>Pinus excelsa</i><br><i>Lonicera sempervirens</i><br><i>Lonicera japonica</i><br><i>Diervilla</i> (Weigela, white and dark red varieties)<br><i>Syringa Josikea</i><br><i>Neillia opulifolia</i> (Spiraea of gardens)<br><i>Vitis aestivalis</i><br><i>Cornus paniculata</i><br><i>Spiraea callosa</i><br><i>Ptelea trifoliata</i><br><i>Gymnocladus canadensis</i><br><i>Phellodendron Amurense</i><br><i>Clematis fusca</i><br><i>Spiraea salicifolia</i><br><i>Potentilla fruticosa</i><br><i>Celastrus paniculata</i><br><i>Kalmia latifolia</i><br><i>Ilex laevigata</i><br><i>Cytisus nigricans</i><br>10, <i>Sambucus canadensis</i><br><i>Liriodendron tulipifera</i><br><i>Rubus occidentalis</i><br><i>Tamarix sinensis</i> (first flowers)<br>14, <i>Magnolia glauca</i> (at Gloucester)<br><i>Styrax japonica</i><br><i>Ligustrum vulgare</i><br>16, <i>Wistaria frutescens</i><br><i>Viburnum dentatum</i><br><i>Genista tinctoria</i><br><i>Rosa lucida</i><br>17, <i>Rubus odoratus</i><br><i>Rubus canadensis</i><br>18, <i>Rhododendron punctatum</i><br><i>Andromeda speciosa</i><br><i>Philadelphus Gordonianus</i><br><i>Philadelphus inodorus</i> var. <i>grandiflorus</i><br><i>Rhododendron</i> (Azalea) <i>viscosum</i><br><i>Tilia europaea</i><br><i>Halomodendron argenteum</i><br><i>Calophaca Wolgarica</i><br><i>Solanum Dulcamara</i><br><i>Kalmia angustifolia</i><br>19, <i>Rhus venenata</i><br><i>Cornus circinata</i><br><i>Cornus paniculata</i><br>19, <i>Mitchella repens</i><br><i>Linnaea borealis</i><br><i>Rhus typhina</i><br>23, <i>Euonymus europaeus</i><br><i>Gaylussacia frondosa</i><br><i>Ailanthus glandulosus</i><br>26, <i>Ceanothus americanus</i><br><i>Cornus sericea</i><br><i>Andromeda ligustrina</i><br><i>Amelanchier canadensis</i> (fruit)<br><i>Vaccinium pennsylvanicum</i> (fruit)<br><i>Vaccinium corymbosum</i> (small form, fruit)<br><i>Castanea vulgaris</i> var. <i>americana</i><br>28, <i>Rhododendron maximum</i><br><i>Rosa rubiginosa</i><br><i>Rosa lucida</i><br>July 2, <i>Spiraea Douglasii</i><br><i>Ligustrum lucidum</i> var. <i>ovalifolium</i><br><i>Genista sibirica</i><br><i>Rosa setigera</i><br><i>Ligustrum japonicum</i><br><i>Morus alba</i> (fruit) | July 3, <i>Koeleuteria paniculata</i><br><i>Tilia americana</i><br><i>Hypericum Kalmianum</i><br>4, <i>Rosa carolina</i><br><i>Rubus occidentalis</i><br><i>Catalpa bignonioides</i><br><i>Chimaphila umbellata</i><br>8, <i>Ribes rubrum</i> (fruit in market)<br><i>Hydrangea radiata</i><br><i>Hydrangea arborescens</i><br><i>Buddleia curvifolia</i><br><i>Spiraea sorbifolia</i><br><i>Spiraea Nobleana</i><br><i>Spiraea Fortunei</i><br><i>Castanea pumila</i><br><i>Cephalanthus occidentalis</i><br>12, <i>Æsculus parviflora</i><br><i>Erica tetralix</i><br><i>Amorpha canescens</i><br><i>Catalpa Kœmpferi</i><br><i>Symphoricarpos racemosus</i><br><i>Clematis Flammula</i><br>20, <i>Ampelopsis quinquefolia</i><br><i>Rhus glabra</i><br><i>Menziesia polifolia</i><br><i>Menziesia polifolia</i> var. <i>alba</i><br>28, <i>Clematis campaniflora</i><br><i>Clematis graveolens</i><br>29, <i>Clethra acuminata</i><br><i>Lepedeza bicolor</i><br><i>Aralia japonica</i><br>30, <i>Rhus copallina</i><br><i>Clematis virginiana</i><br><i>Ampelopsis tricuspidata</i> (Veitchi of gardens)<br>Aug. 3, <i>Clematis paniculata</i><br><i>Clematis ligusticifolia</i><br><i>Clematis purpurea</i><br><i>Clematis Pitcheri</i><br><i>Euonymus pulchellus</i> (fruit)<br><i>Ribes floridum</i> (fruit)<br><i>Ribes nigrum</i> (fruit)<br><i>Rhus semialata</i> (R. Osbeckii)<br><i>Calluna vulgaris</i><br><i>Clethra alnifolia</i><br>9, <i>Hibiscus syriacus</i><br><i>Tamarix chinensis</i> (full flower)<br>20, <i>Prunus persica</i> (fruit)<br><i>Euonymus Sieboldianus</i><br>Sept. 4, <i>Berberis Fortunei</i><br><i>Prunus maritima</i> (fruit)<br>7, <i>Quercus rubra</i> (fruit)<br><i>Æsculus flava</i> var. <i>purpurea</i> (fruit)<br>13, <i>Æsculus Hippocastanum</i> (fruit)<br>20, <i>Quercus</i> (fruit of all species falling)<br><i>Tilia europaea</i> (fruit falling)<br><i>Aralia japonica</i><br><i>Æsculus parviflora</i> (fruit)<br>23, <i>Hamamelis virginiana</i> (fruit and flowers)<br><i>Gaultheria procumbens</i> (fruit)<br><i>Mitchella repens</i> (fruit)<br><i>Viburnum acerifolium</i><br><i>Sophora japonica</i><br><i>Quercus Cerris</i> (fruit)<br><i>Lepedeza</i> (Campylotryps) <i>sinensis</i><br><i>Artemisia filifolia</i><br><i>Celtis occidentalis</i> (fruit)<br><i>Cornus florida</i> (fruit)<br>25, <i>Æsculus glabra</i> (fruit)<br><i>Castanea vulgaris</i> var. <i>americana</i> (fruit)<br>30, <i>Erica vagans</i><br><i>Fraxinus americana</i> (fruit falling)<br><i>Magnolia acuminata</i> (fruit falling)<br>Oct. 2, <i>Berberis canadensis</i> (fruit)<br><i>Berberis emarginata</i> (fruit) |
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quite out of the question. The rain came just in time to turn them in well, and in plenty. The kind is the early Snowball. Seed of this should be sown early in February for June cuttings, in March for July, and in May and June for autumn

later, that whilst Snowflake has its haulm ripening, that of the other is yet green and vigorous. I find Snowflake, though earlier, producing quite as good a crop. Matchless proves to be identical with Holborn Favourite, and both with Shelburne,

1s. 6d. per lb. were very much surprised to find that Holborn Favourite bought at 5s. per peck was the same Potato. It is a handsome Potato and heavy cropper. Another Potato that will if it has not already produced some disappoint-



supplies. It is one of the most delicious of all Cauliflowers.—A. D.

**Some new Potatoes.**—Pride of America, alluded to in *THE GARDEN* (p. 194), is with me the exact counterpart of Snowflake in shape, quality, and character of leafage, and is so far

an American kind, named in catalogues some three years since, but not put into commerce. It is a handsome flattish oval tuber, the skin tinted with pink and some carmine at one end. No doubt those who bought under the name of Matchless newly imported American seed at

ments is the kind known as Wormleighton Seedling. This was sent out on the assurance of the raiser that it was also a new and distinct kind. Still farther, it unhappily obtained the first prize as a new seedling variety at the International Potato Show last year. A season's growth with



Magnum Bonum has proved that it is that kind solely and nothing more, showing no diversity of any kind. It is well these things should at once be clearly understood that no misapprehension be shown later on.—A. D.

**Among the Peas** we notice "R. M. L.'s" (p. 215) remarks on the subject of our Telephone Pea, and hasten to ask if he will be good enough to say where he obtained his supplies, as we have no knowledge of any enclosure having reference to its cultivation being issued with our sealed packets. The Pea itself is quite capable of holding its own, and as its original introducers, we are anxious to sustain its reputation, but in the present instance we are afraid some other variety has been substituted.—JAMES CARTER & CO.

**Fertilising Cucumbers.**—Mr. Groom, I see, condemns the practice of fertilising the female blossoms of Cucumbers. My experience is in favour of it. Some two months ago our Cucumbers (Telegraph) suddenly ceased to bear, the young fruit turned yellow at the point, and ultimately shrivelled up. I noticed at the time that there were but very few male blossoms on the plants. By way of experiment I fertilised some of the female flowers, and great was my delight to see the young Cucumbers swell up and assume handsome proportions. Since then I have regularly fertilised them, and I have had a constant succession of fine fruit. I have, in fact, not seen a single malformed one since I adopted the practice.—GUILDMUS, *Doncaster*.

**The Potato Crop.**—Up to the present we have no trace of the disease, and where the soil is good an excellent crop will be the result; but of late years we have become so frightened of manure, that many of the crops will be light for want of it, as the severe drought dried up the poor lands before the tubers were anything like fully grown. As a rule our cottage gardeners will have a light yield, and I have no doubt that the very early sorts and the very late ones will come out the best, for the very early ones had perfected their growths before the drought affected them much, and very late main crops had not formed their tubers sufficiently to take any harm before the much-needed rainfall arrived. Second earlies are most likely to suffer from super-tubering. I hope some permanent good may be the result as regards future modes of dealing with the disease, for I find that when growing on manure heaps the plants are healthy and free from disease. It therefore appears to be entirely a question of moisture in the atmosphere whether we have disease or not. As regards quality, I may state that even the American Rose and similar sorts are as dry and floury when dug up as a well-ripened Regent, and on rich kitchen garden soil we have had many tubers over 1½ lb. each. We do not go in for collections of new sorts, but I find Covent Garden Perfection a kind that promises well—a useful garden Potato for all purposes, and, with moderate haulm, a great consideration when winter greens have to be planted between the rows. Snowflake has turned out well, and Schoolmaster we shall grow more extensively in future.—J. GROOM,

**Fine foliage plants.**—*Cyanophyllum magnificum*, with dark bronze leaves, veined with purple on the upper surface and tinted with purple beneath, is one of the finest foliage plants amongst the many fine ones grown by Messrs. Thompson and Ireland, near Edinburgh. The leaves are nearly 2 ft. long, by about 1 ft. wide; the plant, this year's cutting, is now about 1½ ft. high, growing in a damp stove. *Anthurium Wiroqueanum* has a long narrow leaf, and is a good foliage plant, *A. Veitchii* being a still better one. The following are also beautiful kinds, viz., *Croton Etna*, *C. Duke of Buccleuch*, *C. gloriosus*, with variegated straw coloured drooping leaves; *C. Walreni*, *C. Archiboldi*, a seedling with golden variegation, not yet in commerce; *Dracena Goldieana*, with a broad short mottled leaf, a very distinct kind; and amongst some good Ferns, a plant of *Gleichenia Mendelli*, and one of *G. rupestris glaucescens* are both about 3 ft. high, and fully 3 ft. through.—C. M. O.

## GARDEN BIRDS.

I FEAR it has long been the custom of gardeners, both professional and amateur, to consider feathered visitors as enemies, not friends, and to meet them with jealousy, if not with hostility. Is there reason for this? or is it the error of a narrow professional view of what deserves to be treated in a wide cosmopolitan spirit? It is the result of many years' experience in my own garden that the feathered visitors who come through the air hundreds and even thousands of miles every year to visit our gardens are useful, graceful, kindly friends, from whom we might receive benefit and pleasure if only we knew how to welcome their visits and show them our hospitality. To me they have always seemed to add much to the beauty and the charms, and also to the useful productiveness, of a wisely laid out garden; they are as beautiful in their way as a lovely flower; their music has charms of melody and of expression, and if kindly treated their happiness is a joy to us as well as themselves. They are an integral portion of that vast community of embodied spirits which we call Nature, and of which we are only a small portion; they are therefore worthy of our study, our care, and our welcome. When we look into the matter more closely we find that they have duties to perform which are for our happiness, and I will now show by a single example how they and we should work together.

The Garden Warbler shall be our first example; he is a visitor who comes to us from Africa, and generally arrives along with his wife in the first week of May. He selects this time for his visit to me because he knows that my fruit trees are then in bloom, and my Pear trees are his first favourites. The reason for this choice I find to be that the insects which prey upon their leaves and flowers form then the most nutritious and abundant food. There are many other trees all of which he visits, but on which at this season he does not seem to find much food. As many as three or four heads of families arrive at the same time, and the first thing they do is to divide the garden into as many parts as there are families, and select in each of them the most convenient site for a nest.

It often happens, however, that the site most convenient for the nest is not in the garden, but some distance from it, so that while the young are hatched with safety the parents are able to bring their food to them from the garden. The young are ordinarily hatched about the first week in June, when the insects best fitted for them are most plentiful. When young they feed them on very small insects, and afterwards on larger, and when able to fly the parents bring them to the garden and teach them how and where to select their food, after which they take care of themselves. The male birds arrive before the females, and busy themselves in making a survey of the garden and of all the neighbouring orchards and woods—the last for their nests and the former for their feeding ground.

About the end of August the young birds begin to emigrate, and leave their parents behind in England till much later. This year, on July 25, in my garden near Brighton, I saw a group of young garden warblers that had come from farther inland and made it their resting-place. They stand the entire day feeding on a few of the remaining very scarce Black and Red Currants, and I watched them till late at night, but next morning not one was to be seen. They had crossed the channel in the night, as all warblers travel by night, and they do not, like many others, wait to travel in flocks. The 6th of August was the most remarkable day of migration, as I saw some thirty in my own gar-

den, but they were all young birds, some fifty days old, and starting on their long journey over land and sea without other guide than instinct. The old birds have to remain in England some 30 or 40 days after the young ones have left in order to get their winter plumage, without which they could not perform their return journey to the south; but the young birds, having their spick-and-span new suit, were able to start early and make their first journey easily and leisurely, and so to know their way back to England next year without mistake or delay.

In noticing this one garden guest I have not been able to state any of the larger views which the study of the great community of birds forces on the thoughtful student of Nature, but the subject is one which leads on to such important practical conclusions, that I shall be happy to return to it. In my next I propose to treat of the hedge sparrow.

GEORGE SWAYSLAND.

4, King's Road, Brighton.

## ORCHIDS.

### MAKING UP SPECIMEN ORCHIDS.

HAVING been one of the first to object to the "bedding out" of Orchids for exhibition purposes, I am naturally somewhat interested in the discussion anent the practice now being carried on. As far as the secretaries or promoters of floral exhibitions are concerned there is for them, and others a way out of the difficulty. All that is necessary is to make two classes in the schedule, one for "bedding out" Orchids in big pots, boxes, or tubs, and another class for *bona-fide* single specimens. Nurserymen have great advantages over most amateur growers so far as "bedding out" Orchids in pans are concerned, and under my plan they could carry it out to their hearts' desire honestly and above board. On the other hand, amateurs are not daily tempted to sell their finest specimen Orchids, and hence have an advantage over most nurserymen so far as *bona-fide* well-grown single specimens are concerned. Under present circumstances judges must often feel perplexed when called upon to award prizes under the present plan, which allows "made up" plants and *bona-fide* single specimens to be staged in competition for the same prize in the same class. If the object of floral exhibitions be to encourage good culture, there can be no doubt that both "made-up" duplicates and *bona-fide* single specimens may be equally well grown; then the award would naturally go to the group which made the best display. Still, I fancy most judges would, with myself, lean towards giving the prizes to the *bona-fide* single specimens if the "massed" or "made-up" plants were the least bit behind hand in health and finish, even if so be that they did bear a few more blossoms than the genuine single plants. At any rate there can be no doubt that several good healthy well-bloomed plants of the same variety are more effective when massed together than similarly sized single specimens; and as I see it the only way out of the difficulty is for horticultural societies to follow Captain Shaw's plan, and while tolerating "made-up" plants offer good prizes for *bona-fide* specimens as well.

F. W. B.

— Permit me to say, in reply to Mr. Catt (p. 161), that I in no way favour the idea that an established Orchid would not be more creditable than a made-up one as an exhibition plant, supposing both showed equal signs of good culture. If a clause were inserted in exhibition schedules, as Mr. Douglas proposes, that made-up plants would be disqualified, then what made-up plants is must be defined; and if two or three varieties were found growing together, they could not represent one plant, though they should have been growing in that way for a year or two. This is exactly my point. Mr. Douglas had said Sir Trevor's collection was a remarkably good one; no one would say to the contrary; the plants of



which it consisted were simply superb, and not made-up; but had the clause been inserted to which reference has just been made, we should not have had the privilege of seeing the pan of *Oncidium* already alluded to, as it was the object of special remark, that even in this pan there were varieties quite distinct, though in no way detrimental to its beauty. Mr. Douglas certainly does imply that exhibitors should be favoured who showed three plants in pots in which they have grown together year after year; and as he has referred to him and mentioning the lists side by side as competitors, I feel free to remark that the "bundle" of *Cattleya Mossiae* (referred to in my first letter) which had flowered so grandly was exhibited by an amateur, and was one of the plants which beat him in the amateur's class. Mr. Douglas thinks I have the advantage over him; but as there are two sides to every question, I must remind him that a nurseryman has to sell his specimens as fast as he grows them, and oftentimes within a week or two of the show time, as was the case this season, when I parted with the most striking *Orchid* I have ever grown. In this respect I think an amateur has the advantage over a nurseryman; but let it not be supposed that I am claiming any special privilege for nurserymen in these remarks, as I am sure at some of our chief shows this season there were more made-up plants shown in the amateur's class than in the nurseryman's. As a matter of expediency, *Masdevallias* or any other *Orchids* that grow best as small plants shall be put together again when the time for exhibiting shall come, and I shall leave the merits in each case to the decision of the judges.

H. JAMES.

Castle Nursery, Lower Norwood.

**Orchids at Drumlanrig.**—I have been prevented by illness from taking earlier notice of "M.'s" remarks on this subject, but I can fully confirm "An old Drumlanrig Man's" statements. I have before me a list of the *Orchids* grown in 1852-53. There were then 39 genera and 78 species, consisting of *Dendrobiums*, *Aerides*, *Odontoglossums*, *Oncidiums*, *Stanhopeas*, *Vandas*, *Zygopetalums*, *Renantheras*, *Maxillarias*, *Cymbidiums*, &c. No doubt many of these are what "M." alludes to as old kinds. There is indeed plenty of evidence that an *Orchid* collection existed at Drumlanrig longer than he imagines.—N. J. D.

### NOTES OF THE WEEK.

**BALSAMS OUT-OF-DOORS.**—I have noticed all the summer near Forest Hill a fine bed of Balsams covered with bloom, sturdy, compact plants, about from 15 in. to 18 in. high. They have withstood the heavy rains of the last fortnight well, and now look brighter than anything else with which they are associated.

**A DOUBLE-HEADED DAHLIA.**—We have received from Mr. Fred. Wagstaff, Copped Hall, Romford, a very singular double-headed *Dahlia*, the flowers back to back forming a massive, but far from graceful head. It is not an uncommon monstrosity, but we have not before seen so perfect a specimen.

**THE CARPET BEDS in Battersea Park** are just now at their best, and those who are fond of that kind of gardening should not lose the opportunity of seeing them. The browns and bright reds obtained from the *Alternantheras* are very striking, and these, combined with the grey *Antennaria dioica* and the deep green *Mentha Pulegium*, form pretty patterns, which seem all the brighter for the wet we have had.

**BEAUTIFUL STOVE SHRUBS.**—The bright rose-coloured *Dipladenia amabilis*, as well as *D. boliviensis*, are grown well in Messrs. Ireland & Thompson's Nurseries, Edinburgh, as is also *Allamanda Hendersoni*, which is flowering well. *Dipladenia amabilis* blossoms freely for three or four months in the year, and is a beautiful companion to the pure white *D. boliviensis*.—C. M. O.

**FLOWER BEDS IN HYDE PARK.**—Amongst these, four of the prettiest just now are circles planted with a variety of *Iresine Herbstii*, called brilliantissima, and *Gazania splendens*. The two colours, red and orange, mixed together form a pleasing contrast, and bid defiance to the wet which has rendered *Pelargoniums* nearly flowerless.

**HIBISCUS SYRIACUS** is now very effective in groups in the shrubberies here, and also isolated on the turf. It is valuable from coming in after the majority of flowering shrubs are over. *Lycasteria formosa* is also a pretty plant for isolation on Grass. *Ampelopsis Veitchii* we found to be a most useful climber, not only for unsightly walls, but also for table decorations.—J. GROOM, *Linton*.

—The *Hibiscus syriacus* and its several varieties, flowering as they do at this time of the year, are unusually welcome. In colour the flowers vary from pure white to purple, and they are both single and double; many kinds, too, are striped and flaked, so that there is no end of variety among them. There is also a variegated leaved kind for those who desire it, but it is not very effective. These beautiful shrubs thrive extremely well in the gardens about London, where they are now in perfection.

**PHILESIA BUXIFOLIA.**—This is not often seen well flowered. A plant here, 2 ft. through, in a pot standing on a pedestal out of doors in a partially shaded spot, has flowered freely throughout the summer, and still continues to make buds. As it is of slow growth, it takes some years to form a specimen, after which it seems the best plan to leave it alone. It is said to be hardy, but this seems doubtful. The large delicate coral-like flowers in quantity are very charming.—M.

**A LATE ADMIRABLE PEACH.**—What a fine fruit this is as it comes to us from the Isle of Wight—more than 11½ in. in circumference! Such worthy products of our clime are pleasant to see on the garden walls. Our recent winters have made the sight a rarer one, though probably new varieties are also fighting successfully against this fine old Peach. Of other Peaches in the same garden, *Rivers' Early York* weighs 9½ ozs., *Bellegarde* and *Dymond* from 8 ozs. to 9 ozs., *Grosse Mignonne* and *Royal George* over 8 ozs., and well coloured. They all grow in a border about 18 in. deep made over ten years ago.

**BIGNONIA GRANDIFLORA AS A STANDARD.**—Some of your readers not favoured by climate, or who have not suitable wall space for the climber, may like to know that it makes a capital ornament for the conservatory grown as a standard. There is one here thus treated in a large pot. It is 8 ft. high, and has at the present time thirteen racemes of its fine cinnabar-red *Gloxinia*-like flowers, of from 1 ft. to 18 in. long, and as they open in succession present a gay appearance for several weeks. It is of easy culture, requiring merely to be shaken out and repotted in spring, and as plentifully supplied with water during growth.

**BEDDING BEGONIAS.**—After the heavy rains which have continued so long, it is pleasant to notice how well bedded-out *Begonias* look, while *Pelargoniums* have been greatly damaged. The glossy foliage of the *Begonias* and their pendent blooms seem to have a wonderful power to cast off rains. Immediately after a heavy downfall last week, the *Begonia* beds in Messrs. Laing's nursery, at Forest Hill, looked as beautiful as if nothing of the sort had happened. When better known, *Begonias* will be much sought after for bedding purposes, forming as they do perfect little bushy compact specimens, which flower better, either when subjected to intense heat or heavy rains, than *Pelargoniums*.

**DIANELLA CERULEA.**—The bright blue berries of this plant render it just now a pretty object in the conservatory or cool greenhouse. It has the long linear leaves common to many other *Liliaceæ*, and produces its small whitish flowers, in much branched spikes. These flowers which are in themselves insignificant, are succeeded by berries

about the size of Peas, of a most beautiful dark blue colour. Being a native of the Fern districts of New Zealand, it succeeds best in a somewhat moist situation, and when well drained and copiously supplied with water, it both grows and flowers profusely. During the winter all that is necessary is that it should be protected from frost, so that a cool house just meets its requirements. It is now in great beauty in the temperate house at Kew.

The correct name of the golden tipped shrub sent you by Mr. Jackson as *Diplopappus chrysophyllus* is *Cassinia fulvida*.

The hybrid *Gladiolus* I gave Mr. Burbidge, which he describes in *THE GARDEN* (p. 204), should have *Frœbeli*, the raiser's name, after its other appellations.—W. E. GUMBLETON.

### LIVING SPHAGNUM AN AID TO CULTURE.

THE impression seems almost universal among *Orchid* growers that not only is *Sphagnum* essential to their cultivation, but that the *Sphagnum* employed must be alive. Of course, that portion that is cut up and used in the compost speedily dies and decomposes, but that used for surfacing remains alive for a long time. It might be worth while enquiring how far living *Sphagnum* is better than dead for mixing with the compost. Any superiority it possesses possibly arises from the greater durability of its fibre, a matter of considerable moment, probably in the heightening and rendering more durable the porosity of the compost. Any feeding properties possessed by *Sphagnum* are probably of little moment, and those of dead *Sphagnum* would equal living and probably be sooner available. But the surfacing with living *Sphagnum* probably performs other functions than that of merely conserving a moist surface. The living Moss may condense and more minutely divide the moisture, presenting it to the roots in a form more nearly allied to aqueous vapour than common water. Possibly, too, contact with life is more congenial and wholesome, as well as stimulating to the roots than mere contiguity of dead mulchings of Moss or ought else. The roots of *Orchids*, too, in a state of Nature are mostly kept in contact with living Mosses or other plants, and screened from the light and heat of the sun when screened at all by living foliage, stems, bark, Mosses, or Lichens, rather than dead. Mulchings of living *Sphagnum* are therefore more natural than those of dead, and are so far likely to prove better; not only this, living mulchings continue very much in the same vital and mechanical condition throughout the season; or if they undergo any changes, they grow larger and become better and more efficient. Dead *Sphagnum*, on the other hand, decays, becomes compressed, and of less use. There may probably be other reasons in favour of surface mulching with living *Sphagnum* or Moss. Certainly the advantages of doing so are by no means confined to *Orchid* culture. The value of Moss as a cultural agent has been recently adverted to. Many plants may be successfully grown in it with the aid of manure water, but unless the soil is absolutely villanous, this is hardly worth while. But perhaps the majority of plants would be benefited by being surfaced with living Moss, white or green. It is astonishing how fast and strong the roots of such plants as *Pelargoniums*, *Fuchsias*, *Gardenias*, *Caladiums*, *Anthuriums*, *Calanthes*, *Roses*, for example, strike up into and almost possess the living *Sphagnum*, as if the Moss itself furnished them with food or moisture that they could hardly obtain elsewhere. Can it do so? or does it merely provide an agreeable and moist run for the roots in a sort of debatable land between the earth and the air? It might prove as interesting as instructive if cultivators would kindly record their opinions and experience on this point. This much is certain that surfaces of living *Sphagnum* increase the number of the roots. Without reducing the number or lowering the strength of those within the pots it increases them by all that are found in the Moss. Further, the roots



so produced seem more rapid and powerful absorbers of mild manurial waters than those of the normal types wholly covered with earth. Also these are points of the utmost practical value, and were they more carefully noted it is probable that the use of mulchings of living Sphagnum would become almost general instead of exceptional and special as at present. D. T. FISH.

#### NATURE AS A GUIDE IN GARDEN PRACTICE.

How we may follow Nature in the artificial culture of plants in this country is a question which often presents itself to cultivators, and some have one opinion on the subject and some another. When anyone succeeds in growing any particular subject successfully, from the cultivator's point of view, and, as he may imagine by following a course not exactly what the plant affects naturally, we are cautioned against the danger of imitating Nature too closely, and when another succeeds by adhering to Nature as closely as possible, we are told that we cannot disregard her teachings with impunity, while some advocate both courses, just as the spirit moves them, telling us one week to follow Nature, and the next cautioning us against her teachings. For my own part, I venture to think that no cultivator ever succeeded or is likely to succeed in the culture of either plants or fruits who does not draw his lessons from Nature, but such lessons must be drawn from the best examples which Nature furnishes and not from the worst, if we desire to read her aright, and, above all, we must reckon the agents through which she accomplishes her ends. These are heat, light, air, moisture, and soil, &c. It would be easy to find inferior examples among Nature's own productions, where some of those conditions were absent, but where they are combined in the right degree Nature produces her noblest types. A tree or plant growing in a genial soil and situation where it receives the light and air freely on all its parts is a very different object from the same grown in a thicket, perhaps, when it has to maintain a continual struggle for existence. Need it be said that it is the first of those examples which the cultivator should copy, and not the last. If it be admitted that Nature works by the agencies we have named, it is for those who say that Nature's laws may be set aside occasionally, or disregarded, to prove that any of our horticultural operations or practices are not conducted expressly with the view of utilising and adjusting the same forces by which Nature acts, just according to the altered conditions and circumstances, it may be, in which the subjects treated are placed. Those who tell us not to imitate Nature err, I am afraid, in misinterpreting her meaning, and unconsciously follow her teachings all the time. J. S. H.

#### WINTER MIGNONETTE.

I ALWAYS sow my first batch of Mignonette the last week in August or the first in September; if delayed later the young plants are apt to damp off during the dull days of winter. For ensuring fine masses in 6-in. pots, such as one sees in Covent Garden Market in spring, I take care that the pots are well drained; I then fill them firmly with soil consisting of about five parts of loam to one of well-rotted manure, which must be firmly pressed down, as if put in too loosely the roots permeate the mass so readily that the plants grow long and weak during dark weather; whereas the object is to obtain a short, but sturdy growth. After sowing I cover the seeds with some of the same soil finely sifted, then I place them in a pit as near the glass as possible. In this pit, on which a little heat can be turned on during frost, they are kept the whole winter and until they flower in the spring. As soon as the young plants appear they are thinned out in 10-in. or 12-in. pots, for although 8 in. are quite sufficient, it is better to leave 2 in. or 3 in. more for a time at least in case of accidents. Air is given freely

on all occasions, the lights being kept off on every favourable opportunity, care being taken to put them on during heavy rains, as over-watering is one of the principal things to be guarded against; in fact, many failures that I have seen have been caused by want of attention in this respect. If this treatment be followed, by the New Year the plants will be stout and strong, ready to start away as soon as the days lengthen, or if wanted, two or three lights may be kept somewhat closer, and the plants so treated will be in flower by the beginning of February. When growth commences strongly I water with liquid manure about twice a week.

TREE MIGNONETTE I sow in 2½-in. pots, two or three seeds being put in a pot about the middle of February, and as soon as the most promising can be picked out I remove the others, taking care not to disturb the remaining one, which will grow away freely and soon need the support of a stake. Whether wanted for standards or pyramids, it is best to encourage them to reach the height required as soon as possible, and in the case of standards, the side shoots must be removed. They will soon be ready for their first shift into 6-in. pots—rather a delicate operation as Mignonette, dislikes being disturbed, but carefully done I do not find any ill effects to be the result. By the middle of May these pots will be full of roots, when the plants may be shifted into their flowering pots (10 in. in diameter), in a soil consisting of 3 parts turfy loam and 1 part manure, and when this is done a pit will be the most suitable place for them. When established in their pots they may be set out-of-doors, and during summer tied and regulated on a trellis, which will be necessary for their support; the flowers must be picked off as they appear, and they should be watered with liquid manure as the pots get full of roots. Thus treated, by autumn there will be fine pyramids or standards, as the case may be, studded with flower-buds, and if introduced into a house in which a little heat is kept they will flower during the whole of the winter and far on into the spring. H. P.

**Ferns and gas tar.**—What is the best and most effective remedy for the injurious effects of gas tar or black varnish on Ferns? I have erected a new fernery, the roof of which was painted with three coats of paint, and the sides and legs of tables, and also the pipes were coated with two coats of gas tar or black varnish. The Ferns were placed in the house three weeks ago, but the result is that the new fronds of *Gleichenias* are completely browned, but all the *Adiantums* are killed so far as the fronds are concerned. The smell of the paint has long vanished, but the varnish still smells strongly, and particularly when the fernery is a little warm. Should I trust to the gradual disappearance of the evil? or can I apply anything which will kill the injurious smell? FRANK TAYLOR, Bolton.

**Standard Peach trees.**—I notice that it is recommended to grow Peach trees as standards instead of training them on vines. Are those who advocate this plan aware how inferior the quality of Peaches so grown is compared with those grown on a wall or trellis? I have had fourteen years' experience with standard trees in a large house, and have obtained my employer's permission at last to do away with them and put up wires. We get plenty of very fine fruit, but it is indifferently flavoured owing to the want of sun and air. True, our house is a lean-to, but in any case it is not possible to expose the fruit on standard trees to the same degree of light and air as those grown on trellises, and without the full benefit of these two conditions I do not think we can expect to get richly flavoured Peaches. I grant standard trees are more fruitful than stiffly trained ones; they are also vastly superior in appearance, but I think the merits of the case are generally settled by the condition of the fruit when it gets to the table. In this case I certainly feel inclined to use *Punch's* very hackneyed phrase and say, "Don't." —J. C. CLARKE.

#### LATE NOTES AND QUESTIONS.

**Plants.**—S. C.—We have given some consideration to the matter, and the difficulties in the way are too many. We cannot do it in our pages.

**Fruit showing.**—W. G.—In a collection of six dishes, the more variety the better. Therefore we would not show even two kinds of Grapes.

**Grapes.**—W. N.—They are what is termed "shanked," a disease induced in many ways, but chiefly through the roots getting down into bad soil.

**Notes from Norfolk.**—In my last paragraph (p. 204) I made a mistake in referring to *Ailanthus glandulosa*; it should have been the Sumach (*Rhus Cotinus*).—W. R., Dersingham.

**Gladioli.**—S. B.—These have failed in many places this year; but from what cause it is difficult to say. The bulbs you have sent do not seem to have made much root, but they appear to be unaffected by disease.

**Peaches dropping.**—Will some of your correspondents tell me the reason why Peaches drop just before they are ripe? They have heat and plenty of air, are planted inside the house, and have been well watered; they are of fair size, moderate in colour, but have no flavour.—F. J.

**The Apple crop.**—We hear that the recent heavy winds have seriously injured the growing Apple crop, and we should be much obliged to any of your correspondents if they could let me know, through THE GARDEN, whether there is any truth in this report.—J. C. H. & Co., Liverpool.

**Potatoes.**—When and in what order should *Champions*, *Sherries*, *Dalmahoy*, *Rocks*, and *Magnum Bonum* Potatoes be used?—H. (Dalmahoy are the earliest of the kinds named, and should be fit for present use. The rest are very late sorts, which generally improve in quality with keeping; therefore their order of use may be a matter of choice. Probably few of them will be fit to lift this year much before the end of October.—A. J.)

**Caterpillars.**—Anon.—I cannot at present give the names of the black caterpillars. The moths of which they are the larvæ belong to the family Geometridæ, and have slender bodies and large wings. The caterpillars are often called loopers, from their peculiar action when walking; they extend themselves as much as possible, and then bring forward their hind feet close to their front ones, in doing which they hunch up their backs and make a loop of their bodies.—G. S. S.

**Books.**—R. H.—"Thomson on the Vine" will probably answer your purpose.

**Names of Plants.**—E. P. Dixon.—Apparently *Camelina sativa*.—Mrs. Moir. We cannot name without flowers or fruits.—C. M. G.—*Stipa pennata*.—L. G. D.—1, *Thuja Lobbi*; 2, T. Ellwangeri; 3, T. Wareana.—Mrs. P. P. B. (Brymore).—*Chrysanthemum Leucanthemum*.—F. R. S.—*Cattleya crispa*.—G. Coleman.—Send other specimens, as those sent are much withered.—*Climber*.—1, *Andromeda Catesbaei*; 2, Variegated *Carex* (cannot name species without flowers); 3, *Achillea Ptarmica* fl.-pl.—A. J. N.—1, *Polygonum cuspidatum*; 2, *Abelia rupestris*; 3, *Muhlenbeckia complexa*; 4, *Nepeta Mussini*; 5, apparently *Clethra alnifolia*; 6, *Agathaea cœlestis*.—X. Y. Z.—3, *Pulmonaria mollis*; 4, species of *Tecurium*.—*Amateur*.—For *Germander* Speedwell is meant *Veronica Chamædrys*.—H. W.—The Ivy is *Hedera Regneriana*.—J. Mathison. *Allamanda nerifolia*.—W. B.—*Oncidium ornithophyllum* (true), *Odontoglossum Lindleyanum*, *Dendrobium fimbriatum oculatum*. The small unobscure flowers are apparently a species of *Eria*.—F. R. M.—Next week.—E. Molyneux.—1, *Euphthalium salicifolium*; 2, *Chelone barbata*; 3, species of *Solidago*; 4, *Helianthus multiflorus* fl.-pl.; 5, *Veronica longifolia rosea*; 6, *Tanacetum vulgare*.—T. G. K.—*Portulaca alba*.—Hammis Smith.—*Arab alpina*.

**Pruning Raspberries.**—An important part of Raspberry culture is to cut out the old bearing wood at this season of the year, so as to let sunlight in among the young growth to ripen in. Where the canes are tied to stakes or trellises in winter, they may now be loosely tied up with matting to prevent their being broken by wind, but on no account tie tightly.—J. G.

**Marshallia cæspitosa.**—This distinct North American species came to me along with other rare plants from Mr. Falconer, who has charge of the Harvard Botanical Gardens at Cambridge, Mass., U.S.A., and who will no doubt be able to enlighten Mr. Wood as to its history. Planted out here in a deep rich border it has produced its white "drumstick"-like flower-heads plentifully, and now we anticipate a good crop of seeds from it. It grows so fast here that I expect it likes a good deep border better than the drier slopes of a rock garden. Although not particularly showy, yet its flower-heads are so distinct that it is certainly well worth a place in the herbaceous border. Indeed, it is real and effective as compared with the bulk of North American composite plants now in bloom.—F. W. B.



## THE ENGLISH FLOWER GARDEN, OR FLOWERS OF THE OPEN AIR.

### *Allosorus crispus* (Parsley Fern).

—A beautiful diminutive Fern, found in some mountainous districts, where it grows out of the crevices of the rocks, its colour being a pleasant shade of green; the fronds grow in dense masses, and from their resemblance to Parsley have obtained for it the name of Parsley Fern. This pretty little Fern will not do well if too much confined. It requires abundance of air and light, and should only be shaded from the hot sun. When planted permanently out-of-doors it should have some care shown to it in the matter of soil, drainage, and light. On rockwork it does well planted between large stones, with broken stones about its roots and just its fronds peeping out of the crevice. Growing in this way out of an interstice of the rockwork it looks very well, and seems to be quite at home in such a situation; but this favourable result need not be looked for if it is deprived of light by other plants overhanging it too closely. It is well suited for planting in chinks on the rock garden, and associates well with choice alpine plants. A British plant.

*Alonsoa* (Mask Flower).—Plants mostly of annual duration. The best species are *A. Warszewiczii*, which grows over 1 ft. high, and has small bright orange-red flowers. *A. linearifolia* grows from 1 ft. to 1½ ft. in height, and is bushy and compact. *A. acutifolia* is a slender growing herb, 1 ft. to 2 ft. in height. Similar to this is *A. incisifolia*, likewise a very pretty kind. *A. myrtifolia* (Roetzl) is from 2 ft. to 2½ ft.; it is of a very vigorous growth. The individual flowers are larger far than in any other species of this genus, and of a more intense scarlet than those of *A. linearifolia*. *A. patagonica*, a pretty species from Patagonia, is an early and free-flowering annual. It grows about 15 in. in height, and forms densely branched, compact bushes with flowers vermilion-scarlet, of fine form, and disposed in densely set spikes. All are easily grown, and are susceptible of both pot and open ground culture. The seeds should be sown in March, and they will flower early in July. They may also be propagated by cuttings in the spring. *A. Warszewiczii* is more perennial in character than the rest, and it is more shrubby in growth, but resembles the others in flowers and foliage. As a pot plant it will flower freely from early spring until late autumn without intermission if the roots are kept well nourished. It is rather dwarf in growth, and can be propagated at any time from February to September. The treatment given to the general stock of bedding plants during the winter season will suit this plant. The *Alonsoas* may be used as "ground plants" among tall fine-leaved or other plants.

### Alpine Sanicle (*Cortusa Matthioli*).

*Althæa* (Hollyhock).—A genus of the Mallow family consisting chiefly of coarse growing plants, though some, such as *A. rosea*, from which the Hollyhock has sprung, are showy garden flowers. The original form of the Hollyhock with single flowers is considered by some desirable as well as the double-flowered sorts. There is another species, called *A. Irolowiana*, a tall plant with large orange and red flowers, which are very showy. The other species are characterised generally by great vigour of growth, hence not very suitable for the garden. They grow vigorously in almost any situation or soil. Among them *A. armenica*, *officinalis*, *narbonensis*, *cannabina*, and *ficiolia* are the best—mostly natives of South Europe; flowering in summer and autumn.

*A. rosea* (Hollyhock).—The Hollyhock is one of the noblest of hardy plants, and there are many positions in almost all gardens where Hollyhocks would add finely to the general effect. For breaking up ugly lines of shrubs or walls, and for forming backgrounds, their tall column-like growth is well fitted. So, too, wherever bold and stately effects are desired among or near flower beds, they are valuable. Cottage beekeepers would do well to grow a few Hollyhocks, for bees are fond of working amongst their flowers.

CULTURE.—To obtain fine flowers it is necessary to treat the plants liberally. Deep cultivation, a liberal supply of manure, frequent waterings in dry weather, with occasional soakings of liquid manure, will alone secure fine spikes and well developed flowers. Hollyhocks require good garden soil, well trenched to the depth of 2 ft., and plenty of thoroughly decomposed manure. A wet soil is good in summer, but in winter injurious to them, and to prevent surface wet injuring old plants left in the open ground, we remove the mould round their necks and fill up with about 6 in. of white sand. This preserves the crowns of the plants. It is best, however, to plant young plants every year, as one would Dahlias, i.e., if fine flowers are desired. Plant them not less than 4 ft. from row to row, and 3 ft. apart in the row; if grouped in beds, not nearer than 3 ft. each way. In May or June, when the spikes have grown 1 ft. high, thin them out according to the strength of the plant; if well established and very strong, leave four spikes; if weak, two or three. When they are required for exhibition, only one spike must be left. Stake them before they get too high, tying them securely so as to induce them to grow erect. The most robust among them will not require a stake higher than 4 ft. above the ground level. If the weather is dry they may be watered with a solution of guano or any other liquid manure poured carefully round the roots, but not on or too near the stem. If fine blooms are required cut off the side shoots, thin the flower buds if crowded together, and remove the top of the spike, according to the height desired, taking into consideration the usual height and habit of the plant. By topping, be it observed, you increase the size of the flower, but at the same time shorten its duration, and perhaps disfigure the appearance of the plant.

The best way of showing Hollyhocks is in the form of spikes, and, in judging, the first point should be the individual flowers, the perfection of which consists in the petals being of good substance, while the edges should be smooth and even, and the florets occupying the centre full and compact, closely arranged, rising high in the middle, and of a globular form, with a stiff guard petal extending about ¾ in., or in proportion to the size of the centre ball, so that the different parts of the flower may present a uniform appearance. The next point should be the arrangement of the flowers on the spike. They should be regular, not crowded together in a confused mass, nor hanging loosely with open spaces between each flower, but so disposed that the shape of each, when fully blown, may be distinctly seen, the uppermost covering the top of the spike. A few small green leaves between the flowers also give an improved appearance. The third point is colour; the brightest, strongest, and most distinct should stand first, but as it is desirable to obtain shades of all kinds, anything new or distinct in this way should be encouraged.

PYRAMID HOLLYHOCKS. I am a great admirer of Hollyhocks, but I dislike the coarse and unsightly appearance which they assume in a short time after the first flowers

have faded, or been reduced to a pulp by rain or strong sunshine, and also the inferiority of the extreme terminal flowers of the spike. To obviate this last effect I have been in the habit of cutting out the top while the lower blooms were in perfection. This year, from the middle to the end of June, the tops were removed before the flowers appeared. The result has been to spoil the main spike, which grew up stunted and closely packed; but to make up for the disappointment, from every axil on the main stalk there have sprung out a number of shoots, forming elegant and graceful branches, to the number of more than twenty on some of the plants. These are now covered with perfect flowers, nicely spaced and distinct, alternating with very small leaves, and they look as if they would continue in perfection for a long time. As these shoots grow uniformly round the stem, the general outline is that of a trained pyramidal tree with about 100 flowers expanded at once, and one may conceive what a fine effect the various beautiful shades of colour must produce. I would recommend having only one stalk left on the stool, which can be more easily staked and secured than a greater number, and will form a more elegant object than a number crowded together as usual. One of my plants is 7 ft. high, and 4 ft. across at the lower part, tapering to the top. The side shoots do not exceed ½ in. in diameter.—W.

PROPAGATION.—This is effected from eyes, cuttings, seeds, or careful division. Hollyhocks may be propagated by means of single eyes put in in July and August, and also by cuttings put in the spring, on a slight hot-bed. Plants raised in summer are best preserved by potting them in October into 4-in. or 5-in. pots in light, rich, sandy earth, and then placing them in a cold frame or greenhouse, giving them plenty of air on all favourable occasions. Thus treated they will grow a little during the winter. In March or April turn them out into the open ground, and they will bloom as finely and as early as if they had been planted in autumn. Plants even put out in May will flower the same year. If the seeds of Hollyhocks are sown in autumn, as soon as they are ripe, in a box or pan in heat, and potted off and grown on in a pot through the winter, and planted out the following April, they will flower the same summer and autumn. If allowed to remain in the beds or borders where they have flowered, choice Hollyhocks often perish from damp or snow settling round their collars, or from its penetrating through the hollow cavity left by the too close removal of the flower-stems. It is a good plan at the approach of winter, say in October, to carefully lift all which it is desired to save, and lay them close together in a slanting direction, at an angle of about 45°, in a warm mellow soil at the foot of a wall or hedge, where in hard weather shelter can easily be given them. But in wet, heavy soils it is snow and damp that has the most destructive effect. Lifting them thus not only makes them safe, but it gives an opportunity to have the land that is to receive them thoroughly worked in winter, and then, when re-planted in March or April, if a little rotten turf is worked in with them, good spikes and large individual flowers may be expected. Choice and scarce varieties may either be potted up or planted out in a frame. Potting them is the best way, because the plants can be placed in a greenhouse or Vinery on shelves near the glass. Some of the stools will have numerous growths starting from them, and unless the plants have the advantage of a little heat early in the year, many of the cuttings cannot be propagated early enough to flower th



same season. Growers in the south of England have an advantage with these spring-struck cuttings over the northern florists. There is quite three weeks difference between the time of flowering in the south and in the northern districts of England and Scotland. Root-grafting gives the propagator a little advantage, and early in the year the plants are propagated more readily in a light frame fixed in a heated propagating house. A hot-bed is uncertain, as there is sometimes too much heat and moisture, and then not enough. Although the young side-shoots produced by old stocks will readily root in a gentle bottom-heat in spring, they may also be propagated in July, just before the plants come into flower. The side-shoots from the flower-spikes, or the smaller flower-spikes, if they can be spared, should be cut up into single joints, and dibbled in thickly in a prepared bed in a frame or pit, where they can be kept close and properly cared for by shading from bright sunshine, and sprinkling occasionally with water that has been warmed by standing in the sun. Thus treated, nearly every cutting will develop a bud from the axil of the leaf, rapidly strike root, and make a good strong plant by the following spring; as a rule, young plants propagated at this season usually produce the best spikes. When cutting down the flowering stems of Hollyhocks after blooming, they should be left a good length, as they are exceedingly impatient of damp about their crowns; in spring their old stems may be removed altogether.

**INSECT PESTS AND DISEASES.**—Red spider and thrips are both very troublesome enemies to the Hollyhock, but the first named does most injury. It appears on the under sides of the leaves as soon as the hot weather sets in, and is very difficult to dislodge. Before planting out, if there is any trace of red spider, the whole plant, exclusive of the roots, should be dipped in a pail of soft soapy water, to which a pint or so of Tobacco liquid has been added. It will be necessary to syringe the under-sides of the leaves with the mixture if they have been planted out before the pest is perceived. Thrips may be destroyed in the same way. As prevention is better than cure, it is well to syringe the plants every day as soon as hot weather sets in.

**THE HOLLYHOCK FUNGUS** (*Puccinia malvacarum*) has been and still is quite as destructive to the Hollyhock as the *Phylloxera* is to the Grape Vine. When once it seizes a collection, probably the best way is to destroy the whole of the plants affected. Those that do not seem to be attacked should as a precaution be washed with soapy water, in which a liberal proportion of flowers of sulphur has been dissolved. The sulphur will settle at the bottom of the vessel, and must be frequently stirred up when the water is being used. Sulphur seems to destroy almost any fungus, and may this in its very earliest stages; but it will not move it when firmly established.—D.

**Alyssum** (*Madwort*).—A very hard family of Crucifers, and very numerous in rocky and alpine districts, but resembling each other too much to make the culture of many kinds desirable. *Alyssum saxatile* (the Rock Madwort) is one of the most valuable of the yellow flowers of spring, hardy in all parts of these islands. The brilliancy of its masses of bloom and its vigour have made it one of the best known plants. It is often grown in half-shady places; but it, like most rock plants, should be fully exposed. It and its forms are the best of the genus, and well fitted for the spring garden, the mixed border, and rock-work, and also for association with the evergreen Candytufts and Aubrietias for fring-

ing shrubberies. It perishes in winter in heavy, rich clays when on the level ground. Comes from Podolia, in Southern Russia, and flowers with us in April or May. There is a dwarf variety, distinguished by the name of *A. saxatile compactum*, but it differs very little from the old plant. *Alyssum montanum* is a distinct species, spreading into compact tufts, 2 in. or 3 in. high. In April the flowers commence to open, and in May the plants are studded with yellow, alpine Wallflower-like blooms, sweet scented, and produced abundantly on healthy specimens, on the rock garden in good sandy soil, or in some slightly elevated position. Increased by division, cuttings, or seeds, though it does not often seed with us. *Alyssum spinosum* is a distinct, silvery little bush with showy flowers. Small plants quickly become Liliptian bushes, 3 in. to 6 in. high; when fully exposed, almost as compact as Moss.

Among other kinds sometimes grown are *A. Wiersbecki* and *A. olympicum*, neither of which equal in habit, bloom, or endurance *A. saxatile*, which from its showy bloom in spring has been called Golden Tuft. This kind is very easily raised from seed, also by cuttings in spring under a cloche in a cool border. The alpine and rock kinds are of easy culture in light or dry soil, as indeed are all the species. *A. maritimum* is the Sweet Alyssum, a small but hardy and vigorous prostrate plant, with white flowers not very showy, but fragrant. It is useful as a dwarf annual as a carpet plant, and grows easily on the tops of walls in the west country, and also in bare places. In these situations it is sometimes perennial. A native of England or a naturalised plant. Easily raised from seed in spring or autumn, sowing itself freely. There is a variegated form used in the flower garden.

**Amarantus** (*Prince's Feather, Love-lies-bleeding*).—Among annuals none are more in want of judicious use and appreciation than these. The few we grow are usually treated as rough, common annuals, and sown so thickly that they never attain half their true development, or never fulfil any of the graceful uses for which they are adapted. The old Love lies bleeding (*A. caudatus*), with its dark red pendent racemes, is a very striking object when well grown, but *A. speciosus* and some of the more recent varieties are still more so. The more hardy and vigorous species grow from 2 ft. to 5 ft. high. It is advisable to give them plenty of room to spread; otherwise much of their picturesque effect will be lost; and to use them in positions where their fine and peculiar habit may be seen to advantage, as, for example, in large vases, edges of large beds or dotted among low-growing flowering plants. Easily raised as any annual, they deserve to be properly thinned out, and each plant isolated in rich ground, so that it may attain its full size. The foliage of some varieties is very ornamental, and rivals flowers in the richness of its hues. Planted along with large-leaved subjects, such as *Canna*, *Wigandia*, *Ricinus*, *Solanum*, their effect is very good. They may also be advantageously employed in borders and flower-beds of all sizes. The varieties of *A. tricolor* are a little more tender than the other kinds, and a light soil and a warmer position are necessary for them. They do well in gardens by the sea-side. They should be sown in April in a hotbed, pricked out in a hotbed, and finally planted permanently about the end of May. The cultivated kinds embrace bicolor, tricolor, atro-purpureus, half-hardy annuals, highly coloured ornamental foliaged plants useful for centres of beds and borders. *A. melancholicus ruber*, a useful bedding plant with bright crimson leaves; *A. Hendersoni*, *A. Princess of Wales*, and *A. salicifolius*

may be used in the summer garden with good effect. Natives of South America; flowering in summer and autumn.

**Amaryllis**.—None of the species are perfectly hardy, but the beautiful *Belladonna Lily* (*A. belladonna*) may be grown successfully in the open under certain conditions. It is a noble bulbous plant from the Cape of Good Hope, growing from 1½ ft. to 3 ft. high. It blooms late in summer, the flowers being as large as the white Lily, and of delicate silvery rose tint. They are produced in umbels of from 5 in. to 12 in. in clusters on stout leafless stems, arising from the large pear-shaped bulbs. The following are the conditions to be observed for the successful cultivation of this beautiful plant: If the soil be stiff, it should be well drained. Choose a situation such as that on the south side of a house or wall, take out the whole of the soil to the depth of 3 ft. or so, and about 6 in. of broken brick should then be placed in the bottom. Over this some half-rotten manure should be scattered to keep the drainage open, and to form a supply of rich food for the plant to feed on. If the natural soil is not good, some fresh sandy mellow loam should be substituted or added. Should the soil be at all stiff, a few barrow-loads of decomposed leaf soil and one or two of sharp sand should be mixed with it. Having trod this tolerably firm, the bulbs should be planted singly, or in threes if plentiful and it is desired to furnish the border quickly. In the latter case each clump should be about 1 ft. apart, and if the border is of such a width as to require a double row, the plants in the second should be alternate with those in the first. In planting, a handful or so of sharp sand should be placed round the bulbs to keep them from rotting. If planted in autumn, or at any time during the winter, it will be necessary to protect the bulbs from severe weather by applying a good coating of half-rotten leaves, Cocoa-nut fibre, or some other kind of protection. Nothing further will remain to be done till the plants begin to push forth their new leaves, which they do rather early in the spring, and upon the freedom with which they send forth these during the summer the abundance or otherwise of bloom in the autumn in a great measure depends. When once they get fairly into growth they should have plenty of assistance during the dry weather by giving them an occasional soaking with clear water, and from time to time with liquid manure, as it may be required. The object that must be aimed at is a full and free development of leaf growth, and, this accomplished, an abundance of flowers is sure to follow. As soon as the foliage ripens off it should be carefully removed, and the border cleaned and neatly raked over before the blooms begin to protrude through the soil, or they will become injured. Blanda is a variety of the preceding, with much larger bulbs and general development, bearing noble umbels of white blossoms, turning to pale rose, not scented, blooming in summer. There are several other varieties all worthy of cultivation in similar positions.

*Amaryllis Ackermanni* is found to be hardy in various districts, and to flower well in the open ground. It suggests that others of the scarlet kind usually grown in a high temperature are worth trial in the open air on warm borders.

**Amberboa** (*Centaurea*).

**Amblyolepis setigera**.—A dwarf growing half hardy annual, producing small heads of orange-yellow flowers which are sweetly scented. It belongs to the composite family and a native of Texas.

**American Cowslip** (*Dolecatheon*).

**Amianthum muscætoxicum** (*fly Poison*).—A North American Liliaceous plant



1 ft. to 2 ft. high, with broadly, linear leaves, and a dense raceme of white flowers, which turn green with age. Thrives best in a rather moist sandy soil. Not a showy garden plant.

**Ammobium** (*Winged Everlasting*).—The only kind, *A. alatum*, is a handsome Everlasting, covered with soft silky hairs. It grows about 1½ ft. to 3 ft. high, and produces its white chaffy flowers with yellow discs from May till September. A native of New Holland. Grown in sandy soil it is generally perennial, but on some heavy and damp soils it must be treated as annual or biennial. Easily raised from seed, and may be treated as an annual plant, and among such plants it is worth a place. Composite.

**Amsonia**.—A genus of herbaceous perennials from North America from 2 ft. to 3 ft. high, and bears small pale blue or purple flowers in terminal clusters in summer. They are easily propagated by division or seeds, but are plants of very little garden value, except for botanic gardens and large and curious collections.

**Anacharis Alsinastrum**.—An American water plant, now become a most troublesome weed in most lakes, rivers, ponds. Swans eating it down is considered the best remedy. It seems after a time to lose its great vigour.

**Anacyclus Pyrethrum** (*Pellitory of Spain*).—A Composite plant, native of Barbary, Syria, and Arabia, the roots of which are used for medicinal purposes. For botanic gardens.

**Anagallis** (*Pimpernel*). The species in cultivation are chiefly half hardy annuals, the best known of which is the Italian Pimpernel (*A. Monelli*), with large blossoms of a deep blue, shaded with rose. There are several varieties of this ornamental plant, the chief of which are *rubra grandiflora*, *Wilmorea*, bright blue purple, yellow eye; *lilacina Phillipsi*, deep blue, rose-coloured centre; *Breweri*, intense blue; *Impératrice Eugénie*, bright blue edged with white; *linifolia*, fine blue, very dwarf; *Napoleon III.*, maroon; and *sanguinea*, bright ruby. A packet of mixed seed gives a good variety. These flower from July to September. The Indian Pimpernel (*A. indica*) is similar to *A. Monelli*, but has smaller flowers of a bright blue. It is a hardy annual, but the Italian Pimpernel is tender and should receive the treatment accorded to half-hardy annuals. The seed may be sown any time from March till July, the latter sowings to be made in pots and put into a greenhouse or window in autumn. They grow well in any common garden soil and are used with excellent effect planted out in broad masses in borders, and they are also suitable for edgings to beds, and make excellent pot plants as well as being useful in warm borders. The pretty little Bog Pimpernel (*A. tenella*), a native plant found in bogs. It is a creeping plant, bearing slender stems with small round leaves, among which are produced myriads of tiny pink flowers. It is excellent for growing in suspended pots or pans, and may be grown easily in the bog or rock garden, or anywhere where the soil is moist and spongy, and the vegetation dwarf and fragile like itself.

**Anaphalis triplinervis** (*Antennaria*).

**Anchusa** (*Alkanet*).—A small genus of Borageworts, containing a few plants well deserving of culture. The finest species are *A. italica*, a vigorous and showy plant, 3 ft. to 4 ft. or more high, with beautiful blue blossoms in panicle racemes. *A. hybrida* is similar to the foregoing, and probably no species of this genus better merits cultiva-

tion. It is dwarf, about 2 ft. high, and produces an abundance of flowers of rich violet colour, scarcely so large as that of *A. italica*. It is of biennial duration, and, like *A. italica*, is a native of Southern Europe. *A. capensis* is a pretty plant with large bright blue flowers, but it is more tender than the preceding; it should be planted in a sheltered, yet well drained border of light rich soil. *A. incarnata* is a pretty plant, growing about 2 ft. high, yielding an abundance of fresh coloured blossoms. On the whole, they are not important as garden plants. *A. sempervirens* is a British species, growing from 1½ ft. to 2 ft. high, bearing spikes of blue flowers. It is scarcely attractive enough for general culture as a border plant, but worthy a position in woods and semi-wild places. Seeds or division. Flowering spring and summer.

**Andromeda**.—A genus of hardy shrubs, the dwarf species of which are frequently associated with rock plants and hardy Heaths. *Andromeda tetragona* is one of the prettiest of all the shrubs introduced to cultivation, seldom growing more than 8 in. high. It is a native of Northern Europe and America, quite hardy, and requiring a moist peat or very fine sandy soil. It is a fitting ornament for planting on the margins of beds of choice dwarf shrubs in sandy peat, loves abundance of moisture in summer, and is easily increased by division wherever it grows vigorously. If on the rock garden it ought to be in a deep bed of soil. *Andromeda fastigiata* is one of the most rare and beautiful plants that we have obtained from the Himalayas. It should have sandy, moist peat soil. It is most likely to thrive in moist and elevated districts; but, safely planted on rockwork in deep, moist, but well-drained soil, and carefully guarded against drought during the warm season, it may be grown without difficulty. *Andromeda hypnoides* is a minute, Moss-like shrub, 1 in. to 4 in. high, and one of the most interesting and beautiful of all alpine plants, and one of the most difficult to grow, being very rarely seen in a healthy state. Drought is fatal to it. It is a native both of Europe and America, either far north into the coldest regions of these countries, or on the summits of high mountains. Carefully peg down the slender main branches, and place a few stones round the "neck" of the plant, so as to prevent evaporation. *A. polifolia* is easily grown in various soils, and is a good plant for the bog garden. The dwarf *Andromedas* are among the plants which, as regards their propagation, are best left to nurserymen. Some of the kinds may be found in nurseries where hardy Heaths and American plants are grown; others are extremely rare. They thrive well in the Matlock and Edinburgh nurseries. Ericaceæ.

**Andropogon**.—Tall growing Grasses, suitable for planting singly on lawns or where their noble habit of growth can be fully developed. *A. halepensis* is very ornamental, forming large tufts 6 ft. in height. *A. strictus* grows about 4 ft. high, and has graceful silky panicles of bloom. *A. furcatus* and *A. scoparius* are also in cultivation, but neither are so desirable as the others. All the kinds named thrive, provided the situation is not too exposed, or the soil too heavy and damp. In order to grow these Grasses finely, it is needful to plant them in a deep soil well enriched and not wet. Our climate is not quite warm enough for them. A few degrees further south. They are among the best ornamental Grasses for gardens. In the Paris gardens effective use is made occasionally of them.

**Androstaphium**.—A small genus of North American bulbous plants, about which little is known in this country as regards

their culture or hardiness. The kinds are breviflorum, flowers violet, borne in umbels of four to seven, in early spring. A stouter plant than the following, and with smaller flowers. *A. violaceum*, a rare and showy species from Texas, 6 in. to 8 in. high, with a small, coated bulb, which surmounts a depressed globular bulb or corm. Flowers violet, borne in umbels, slightly fragrant.

**Androsaces**.—The most alpine of alpine plants. Other families send down representatives to the hill pastures or the sea rocks, or sunny heaths, as the Primroses and Hairbells do, but not so these. They are more alpine even than the Gentians, which are as handsome in a hill meadow as on the highest slopes; and as Androsaces are, among flowering plants, those most confined to the snowy region, so, as might be expected, they are the dwarfiest of this class. They belong to the Primrose family, and resemble it in the flowers, but even dwarf alpine Primroses are giants to these. Growing at such elevations, where the snow falls very early in autumn, they flower as soon as the snow melts. Sometimes, like some other alpine flowers, they frequent high cliffs with a vertical face, or with portions of the face receding here and there into shallow recesses. Here they must endure intense cold—cold which would destroy all shrub or tree life exposed to it. And here in spring they flower. As yet far from common in our gardens, it is, nevertheless, the aim of every lover of alpine flowers to possess them in good health. This is not difficult where there is a properly-formed rock garden in a pure air. They are among the plants that are almost sure to perish in a smoky atmosphere. Their small evergreen leaves, often downy, retain much more dust and soot than smoother and larger-leaved evergreen alpine plants do. The Androsaces enjoy in cultivation small fissures between rocks or stones, firmly packed with pure sandy peat, or very sandy or gritty loam, not less than 15 in. deep. They should be so placed that no wet can gather or lie about them, and they should be so planted in between rocks or stones that, once well rooted into the deep earth—all the better if mingled with pieces of broken sandstone—they could never suffer from drought. It is easy to arrange rocks and soils so that, once the mass below is thoroughly moistened, an ordinary drought can have little effect in drying it.

Mr. Hatfield finds that all Androsaces are more or less surface rooters. Some, such as *A. Chamæjasme*, may send down their roots to a considerable depth, but not necessarily so, providing sufficient moisture be found on or near the surface. Their woody roots (in cases where the roots are woody) would prefer to run horizontally along the face of some stone at a small depth than to sink vertically to a considerable distance. I have tried various species of Androsaces in almost all imaginable positions in the sun, shade being out of the question, and nowhere do I find them succeed better than in a sandy, well-drained peat bed on the level. In this country, and especially on the eastern side, no vertical or horizontal fissures can be ever so carefully made as to ensure the necessary amount of moisture. Pack stones ever so well about them, they are certain to become too dry. I am quite sure that all this (1881) summer the soil, even in our best positions, has been dry to quite 1 ft. There can be no doubt, we think, that these and a great number of other and more precious alpine flowers would thrive better on a fully exposed level bed of sandy soil kept moist than on many a rock garden. They would be safer from drought, and they would be sure of the feeding ground for the roots so often denied them in the dusty rockworks which have been, and are still, the rule. Only they must



on the level be guarded from the coarse browsing slugs of the lowland garden, and be kept free from the shade of coarse plants which soon take possession of such moist, gritty, sandy, or peaty beds as would suit the Androsaces. It is well to bear in mind, however, that on a properly-formed rock garden there will be level spaces of good soil as well as "rocky" slopes.

**A. brigantica** in every way resembles the variety of *A. carnea*, except that its flowers are white. The same position and soil suits it; that is to say, sunny, and in sandy peat free from lime, well drained, but liberally supplied with moisture.

**A. carnea** (*Rose-coloured A.*).—One of the prettiest and most distinct, coming from the summits of the Alps and Pyrenees; opening in our gardens in the early spring before any of its relatives. Known by its small-pointed leaves, not gathered in tiny rosettes, but regularly clothing a somewhat elongated stem, like a small twig of Juniper, or of the Juniper Saxifrage. The flowers are of a lively pink or rose, with a yellow eye. It is not difficult to cultivate in a mixture of sandy loam and peat on rockwork—the spot to be exposed, and the soil deep and firm. Like most of the species, it may be easily raised from seed, which should be carefully sown in pans of sandy soil as soon as gathered; also by division.

**A. carnea var. eximia** is a large variety and likely to supersede the type, because it is hardier or more robust. Were it not the counterpart of the type when in flower, except that the flowers are much larger and of greater substance, I should be disposed to think it a distinct species, judging by its appearance at other times. It grows in tufts about 3 in. high very rapidly, and in measuring its leaves this day (August 25) I found them above 1 in. long, and  $\frac{5}{8}$  in. broad at the base. Our plants root about 6 in.; a calcareous soil is noxious to it. Increased by division.

**A. Chamæjasme** (*Rock Jasmine*).—This does not nestle into close moss-like cushions, like the Helvetian and other Androsaces, the foliage forming large rosettes of fringed leaves. The blooms are borne on stout little stems frequently not more than 1 in. high, but varying from that to 5 in., according to the vigour of the plants and the position in which they grow. When in good health, it flowers abundantly, is one of the most worthy of culture of all alpine plants, and one of the easiest to grow on an open spot on rockwork, in deep and well-drained rich light loam, the surface nearly covered with small pieces of broken rock, to prevent evaporation and also to preserve the plant from injury. It should get abundance of water in summer, be exposed to the full sun, and be preserved from being overrun by weeds or grazed down by slugs. A native of the Alps of Europe. Mr. Hatfield says he finds it dislikes lime and succeeds in river sand and peat.

**A. ciliata** (*Fringed A.*).—Is by some considered a variety of the preceding, with the flower-stems twice as long as the leaves. Androsace cylindrica is another variety with the stems rising to half an inch high, with persistent leaves, which form columns on the stems. It is by some considered a species, bears pure white flowers in spring, and should be treated like *A. pubescens*.

**A. helvetica** (*Swiss A.*).—Forms dense cushions, about  $\frac{1}{2}$  in. high, of diminutive ciliated leaves, tightly packed in little rosettes. Each rosette rests on the summit of a little column of old and dead, but hidden half-dried and persistent leaves. A white flower, with a yellowish eye, rises from every tiny rosette, each flower being almost twice as large as the rosette of leaves from

which it has arisen. Requires considerable care in cultivation, perfect exposure to sun, and a thoroughly well-drained, but never dry position.

**A. imbricata** (*Silvery A.*).—Differs from the Pyrenean and Swiss Androsaces in having the rosettes of a silvery white colour. The pretty white flowers are without stalks, and rest so thickly on the rosettes as often to overlap each other. It will grow freely in rich loamy soil in narrow well-drained fissures of rockwork. A native of the Pyrenees and Alps. Flowers in summer, and is propagated by seeds and division (*A. argentea*).

**A. Laggeri**.—This exquisite little gem is one of the most distinct of the family to which it belongs, and is easily recognised by its tiny rosettes of sharp-pointed leaves, which resemble a twig of a Juniper, or more especially the Juniper-leaved Saxifrage. It inhabits the Pyrenean Alps, where it flowers as soon as the snow is melted in summer. Its blossoms are of a lively pink colour, with the centre of a lighter hue.

**A. lanuginosa** (*Himalayan A.*).—Distinguished by its spreading and even sometimes, when in vigorous health, long trailing shoots, and bearing umbels of flowers of a delicate rose, the leaves covered with silky hairs. When grown freely it is a lovely plant. Many parts of the country are too cold for this plant, and the southern and western counties, or warm and genial places near the sea, are those in which it may be grown with most success. It is, however, so pretty that in cold places it will be well to preserve it over the winter in dry pits, and plant it out in summer. The most suitable position for it is on the rockwork, planted in sandy peat or very sandy light loam, and so placed that its shoots may fall over the edge of a low rock. Where the soil is free, and not too wet in winter, and the air moist and genial, it may be tried as a border plant. It used to form wide and beautiful tufts on a sandy border in the College Gardens at Dublin. Where increased freely it would prove a beautiful ground or carpet plant. Propagated by cuttings, and flowers from June to October. Himalayas.

**A. obtusifolia** (*Blunt-leaved A.*).—This is said to be allied to *A. Chamæjasme*, but has rather larger rosettes of leaves, and two to five white or rose-coloured flowers with yellow eyes. It seems to grow taller and more vigorously than *A. Chamæjasme*. Widely distributed over the European Alps. Culture the same as for *A. Chamæjasme*.

**A. pubescens** (*Downy A.*).—Allied to the Swiss and Pyrenean Androsaces in its rather large solitary white flowers, with pale yellow eyes, just rising above the densely packed, slightly hoary leaves, the surface of which is covered with stalked and star-like hairs. The unopened blooms look like small pearls set firmly in a tiny five-cleft cup, and are held on stems barely rising above the dwarf cushion formed by the plant; flowering in July and August in its native state, and in our gardens in spring or early summer. It seems to grow without difficulty on sunny fissures in deep sandy and gritty peat. Alps.

**A. pyrenaica** (*Pyrenean A.*).—Like the Swiss Androsace, but the paper-white flowers with yellowish eyes are not quite so well formed as those of that kind, and the flower, instead of being seated or almost seated in the rosettes of leaves, rises on a stem from a quarter to half an inch high. Grows in fissures between rocks, with, however, deep firm rifts of sandy peat and loam in them. It will also grow on a level exposed spot, but in such a position should be surrounded by half-buried stones.

**A. sarmentosa**.—A dwarf-tufted alpine from the Himalayas, and growing in the Ramaon territory at elevations varying from 11,000 ft. to 12,000 ft. It is said to be very nearly related to *A. lanuginosa*; the latter is, however, a more silvery plant—indeed nearly white. They are borne in trusses of ten to twenty flowers on an erect Primula-like scape, and the whole inflorescence at first sight closely resembles that of a bright, rosy, white-eyed Verbena. Propagated by its runners, which hang over the sides of the pot in profusion. Like many other woolly-leaved alpine species, this beautiful Himalayan species is very difficult to keep alive through our cold and damp winters. I have taken the precaution to place a piece of glass in a slanting position about 6 in. above the plant, and I find that this effectually preserves it. Care should also be taken to put finely broken sandstone immediately under the rosettes of leaves and over the surface of the soil to keep every part of the plant, except the roots, from being in contact with the soil. Mr. Hatfield finds a dry calcareous loam best for this.

**A. villosa** (*Shaggy A.*).—A very pretty dwarf species, found on many parts of the Alps, with leaves and stems thickly covered with soft white hair or down. It is more inclined to spread than any of the nearly allied sorts, as it throws out runners, and is therefore suitable for planting, so that one side of the specimen may fall down the face of a rock. It should be planted in loam and a mixture of peat, in a properly made fissure between sandstone rocks or large stones, but it may also be grown on level spots. In all cases it should have abundant moisture, is increased by seeds, and in our gardens flowers about the beginning of May.

**A. Vitaliana** (*Yellow Androsace*) rarely grows above 1 in. high, and produces, scarcely above the leaves, flowers large for so small a plant, and of a rich yellow. It is lovely for association with the freer-growing Androsaces, dwarf Gentians, Primulas, in the rock garden, it may even be grown on a border in a not too dry district where the soil is open. On the rockwork it should be kept moist during the dry months; and when it is tried as a border plant on the level ground, it should be surrounded by stones, half plunged in the ground, to prevent evaporation, as well as to protect it from being trampled upon. It is abundant on the Alps in various parts of Europe, and is increased by careful division or by seeds. Androsace Heeri, bryoides, Charpentieri, Wulfenii, and Haussmanni are among the other finest kinds, and there are one or two annual and biennial kinds not of much value for the garden, except *A. coronopifolia*.

**Andryala**.—Small growing plants of the Dandelion order; some with woolly leaves. Two species are in cultivation. *A. mogadorensis*, shrubby, forms snowy masses on a little islet on the Western Morocco coast, and has not been found elsewhere. It bears flowers as large as a half-crown, of a bright yellow colour, the disc being bright orange. But little is known of its culture and hardiness. *A. lanata* has white woolly leaves, which make it desirable in some arrangements. It grows well in any soil provided it is not too damp and moist.

**Anemiopsis californica**.—A North American plant of no garden value.

**Anemonopsis**.—A small genus of Crowfoots, of which one species (*A. macrophylla*) is in cultivation. It is a beautiful plant similar to the Japanese Windflower (*Anemone japonica*), but smaller in all its parts. The thick and shining leaves rise to a height of 12 in.; the flower-stems are slender, about 18 in. in height, on which are borne numerous drooping blossoms, about  $1\frac{1}{2}$  in. across, of a pale purple colour. The flowers differ from the *Anemone* in having



two rows of petals, one outside and spreading, the other forming a cone in the centre. It is a native of Japan. It thrives in a rich deep soil in a partially shaded border well drained.

**Anemone (Windflower).**—A noble genus of plants to which much of the beauty of the world in spring and early summer in all northern and temperate countries is due. There are over seventy species known. When in early spring, or what is to us in Northern Europe winter, the valleys of Southern Europe and sunny sheltered spots all round the great rocky basin of the Mediterranean are beginning to glow with colour, we see the earliest Windflowers in all their loveliness. These arid and huge masses of mountain that look so barren and verdureless carry on their sunny sides carpets of Anemones in countless variety of hue. These belong to well-known and very old favourites in our gardens—the common Windflower (*A. coronaria*) and the Peacock Anemone. Later on the Star Anemone (*A. stellata*) begins, troops in thousands over the small cultivated terraces, meadows, and fields of the same regions. Climbing the arid-looking mountains in April, the *Anemone hepatica* soon shows itself nestled in many nooks all over the bushy parts of the hills, and much later on it emerges from the snow in the Swiss Alps, and welcomes the early traveller. Further east, while the common Anemones are afloat along the Riviera valleys and terraces, the lovely blue winter Anemone (*A. blanda*) is open on the hills of Greece; a little later its congener, the Apennine Anemone (*A. apennina*), blossoms in Southern Italy. Meanwhile, our Wood Anemone has begun to adorn the woody places throughout the northern world, afterwards ascending to high, treeless places on the mountains, at the same time the open, wind-swept downs beginning to show the purple of the Pasqueflower (*A. Pulsatilla*) here and there through the brown Grass. The Grass has become tall and richly green before the stately and graceful Alpine Windflower (*A. alpina*) adorns with its flowers all the natural meadows of the Alps; as soon as its large flowers are succeeded by the long silky heads of fruit, the snow is melting from the high Alpine Windflowers, which soon flower, fruit, and are ready to take their eight or nine months in their snowy bed. These are but few of the many examples of what is done for the northern and temperate world by these plants.

**Anemone alpina (Alpine Windflower).**—On nearly every great mountain range in northern and temperate climes, one of the most frequent and handsome plants, growing to 18 in. and even 2 ft. high. It is a slower plant in gardens than most of the other kinds. Being of a strong rooting and vigorous character, it should, if placed on rockwork, have a level spot with abundance of soil to grow in, and being also tall, it would be the better of close association with neat shrubs, plants of the stature of the vernal Adonis, and other choice perennials. Where the soil is good it grows quite freely as a border plant. Flowers in its native countries as the snow disappears, and in our gardens at the end of April or beginning of May. When plants are well established in good soil they may be taken up and readily divided; it may also be raised from seed. One form has yellow flowers, in which state it is known as *A. sulphurea*.

**A. angulosa (Great Hepatica).**—Larger than the common Hepatica, with flowers of sky-blue, as large as a crown-piece, and distinguished from the common kind by its five-lobed and toothed leaves. It is a native of Transylvania, and hardy. It is naturally

more an inhabitant of the hill copse than the crest of the Alps, and enjoys partial shade. In sandy soil in shrubberies it attains a height of more than 1 ft. when not in flower, and the shelter and slight shade received from surrounding objects are favourable to it. In all properly formed rock gardens, or near them, it will be possible to give it a suitable position; while in spaces between American plants and choice dwarf shrubs in beds it will succeed. When plentiful enough, it may be used as an edging to beds of choice spring-flowering shrubs, and for planting in wild open spots in shrubberies, or in open, rather bare, and unmown spots along the margins of wood walks. Time will, no doubt, see it sport into several colours like our common Hepatica. Increased by seed and division.

**A. apennina (Apennine Windflower).**—Has erect flowers of a good sky-blue, the plants growing in dense tufts, so that, though there is but one flower to a stem, they are thickly scattered over the low cushion of soft green leaves. Although figured in most of our works on British plants, and naturalised in various places, it is not a true native of this island, but the hardiest of our native plants take not more kindly to our clime. It is one of the sweetest of spring flowers, and among the many lovely plants that gem the alpine or Apennine pastures there is not one more worthy of being abundantly naturalised in groves and shrubberies. It is welcome in the garden and on the rockwork; but it is when we see it scattered amongst the native Anemones in our woods, or making glorious mixtures of gold and blue with the Buttercup-like Windflower, or running wild among dwarf plants in woods or pleasure-grounds that we see how this Italian plant adds a new charm to the British spring. The Apennine Anemone flowers in March and April, is very readily increased by division, and grows about 4 in. to 6 in. in height. Italy.

**A. blanda (Blue Winter Windflower).** A near relative of the Apennine Windflower, and a very lovely plant, deserving to be cultivated in every garden. It is of a deep sky-blue, like *A. apennina*, and has larger and more finely rayed flowers, dwarfer, harder, and smoother leaves, and blooms in early spring, during mild, open winters, and in warm parts showing as early as Christmas, flowering continuously too, so that it may be seen in flower late in spring with its relative, *A. apennina*. It is hardy and vigorous, and, from the harder and smoother texture of the leaves, can stand exposure even better than the very hardy Apennine *A.* It should be grown in every rock garden, and planted on bare banks that catch the early sun in the pleasure ground; should adorn the spring garden, and, when sufficiently plentiful, might be naturalised in bare, half-wild places. It does not grow more than 4 in. high, and is multiplied easily by division. Botanically, this is chiefly distinguished from *A. apennina* by its carpels being topped with a black-pointed style, and by the sepals being smooth on the outside. Increased by careful division and by seed. Greece.

**A. coronaria (Poppy Anemone).**—A native of sub-humid pastures in the south of Europe, this plant has been one of the most popular in our gardens from the very earliest times. There are a great number of varieties, both single and double, all worthy of cultivation, and great ornaments of the spring garden. The single sorts may be readily grown from seeds, and they should be thus raised by those wishing a large stock of effective spring flowers. They may be sown in the open air in April. Infinitely varied as they are in colour, and possessing most vigorous constitutions, they deserve to

be cultivated even more than many double varieties annually offered by our seedsmen. The plantation of these double varieties may be made in autumn or in spring, or at intervals all through the winter to secure a continuity of flowers; but the best bloom is secured by September or October planting. The Poppy Anemone does best in a rich deep loam, but is not very fastidious. The roots of the more select kinds may be taken up when the leaves die down, but they are in few cases worth this special attention, as many splendid varieties may be grown from seed as readily as any native herbaceous plant. If the seed be sown in June, and the plants pricked out in autumn, they will flower very well the following spring, so that this fine old plant may be said to be almost as easily raised as an annual. Flowers in April and May, and often through the winter, red, white, and purple in variety. Height, 6 in. to 15 in. Propagated readily by seed or division. Apart from the old florists' or double Anemones and the single ones, there are certain good races of French origin of much value—the Anemones de Caen, for example. These are raised from the same species, but are more vigorous and have larger flowers than the older Dutch kinds. Of the Caen Anemones there are both single and double kinds. The Chrysanthemum-flowered are another fine race, double. The splendid variety of the Poppy Anemones leads to mixed collections being commonly seen. While it is desirable to have occasional mixtures, a better way is for each gardener to select and keep true some of the finer forms in whatever colour may be admired. In each case a fine scarlet, purple, or violet should be grown by itself and for itself, and in that way, aided by judicious mixtures where desirable, the Poppy Anemone will be a greater aid to the garden artist. They all thrive in garden soils of fair quality, and, like most plants, will be benefited by manure.

The following method will enable anyone to raise seedlings with complete success, provided the soil be suitable—namely, a moist loam. To save time I always sow as soon as the seed is ripe, taking care only to select it from the very brightest-coloured flowers. First, as to preparing the seed, pains must be taken to separate it thoroughly. Spread a newspaper on the table, pour over it a quart of sand, or dry ashes, or fine earth; sprinkle the seed over this, and rub the seed together till the separation of the seed be complete; and as to the seed bed, it need not be larger than 3 feet by 9 feet. Choose the sunniest part of the garden. Dig and rake till the surface is very fine, tread it down, and give it a good watering. Wait until the surface is dry enough to scratch with a fine rake; sow broadcast, covering the seed about the thickness of a shilling; beat flat with a spade, and give a light sprinkling of water. Now comes the most important point in my method. Never let a ray of sunshine reach the bed; cover it with newspapers, spreading a few Pea sticks or something to retain the covering in its place. Keep the surface of the bed always moist. In about twenty days the young plants will begin to appear; when all seem up remove the covering, and no further care will be needed except watering. This must be strictly attended to, for if the bed becomes once thoroughly dry, the plants are apt, after forming small bulbs about the size of Peas, to stop growing, the foliage to die, and the bulbs to lie dormant for months, but if kept well watered through the summer they will go on growing all through the winter, and begin to blossom the following spring. The seedlings may either be left to blossom where they were sown, or be transplanted in September or October.



No. 512. SATURDAY, SEPT. 10, 1881. Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare*.

## THE MARKET GARDEN.

## FRUIT CULTURE IN KENT.

A RAMBLE in the fruit-growing districts of Kent is interesting to those who watch the growing importance of hardy fruit culture as a native industry. In this locality there are thousands of acres of orchards and fruit is rapidly supplanting Hops. The general or partial failure of the Hop crop, combined with low prices, has rendered a once remunerative crop a precarious one. What with extraordinary tithes, and expenses in labour, and appliances necessary for their culture, and preparation for market, the balance has been upon the wrong side for several years past. Most of the land occupied by Hops is well adapted for fruit, and may be devoted to fruit gardens. The Hops are only cleared by degrees as the fruit trees and bushes grow up, for the shelter of the Hops helps the fruit trees at no great expense, and there is no entirely blank season. After the second or third year of planting, the bush fruits begin to bear and the Hops are grubbed out. As the Hops are planted in lines about 6 ft. apart each way, the standard fruit trees are planted in every third row and every third space in the row, thus leaving them 18 ft. apart; the bush fruits are then planted in all intervening spaces or 6 ft. apart each way. By this means horse labour is available for hoeing and stirring the surface. In fruit-growing for market economy of labour is of the first importance. In this neighbourhood the fruit that takes precedence of all others is

THE APPLE.—Fruit-growing with sheep and cattle-feeding is now occupying the attention of our best cultivators. Only the tallest standards are employed, planted from 18 ft. to 24 ft. apart, securely staked, carefully pruned, and foreshortened for several years, keeping the middle of the tree quite open, but leaving the outer bearing spray rather thick. In no case are large branches sawn off, for it has been proved, over and over again, that an orchard that has been neglected for years may be more easily ruined by over than under pruning, as trees, like individuals, feel the effects of amputations, and recover from them more slowly as they advance in years.

BUSH FRUITS.—When bush fruits are past their best they are removed, and the land is laid down in grass. Mixed cropping consists generally of alternate rows of standard and dwarf Apples, with bush fruits between. This admits more light and air to the under crop than if standards were wholly employed; the bush-trained Apple trees are kept spurred in quite close, and are usually very productive. An outer row or two of Damsons incloses the orchard, one row being generally planted in the hedge, and another just inside for a screen. Gooseberries, Currants, Filberts, and Kent Cob nuts are the main under crops, the latter in good years being very remunerative. The strongest shoots are broken off in summer to encourage a short twig-like growth; all sucker-like shoots are removed from the stem first, and laid in bundles for flower-stakes, and then all strong flowerless wood is cut away, the centre of the bush being kept quite open or cup-shaped. A good nut bush will produce thirty or forty pounds of nuts in favourable seasons, and therefore repays careful culture. Gooseberries are left thicker at pruning than is usual in gar-

dens, as most of the produce is gathered green; but Currants are severely pruned. These orchards are generally manured with sweepings of streets and other refuse, and dug up roughly. In spring the ground is forked over, and all roots of weeds and rubbish are hand-picked and burned.

PLUMS.—These are next in importance to Apples. They grow freely and bear abundantly; they are generally standards on grass, or amongst bush fruits. In the latter case, half-standards, or bush trees, are frequently employed in place of tall standards that are preferred in grass orchards from the branches being out of the way of cattle. Some of the oldest varieties—such as Early Orleans, Victoria, and Diamond—are as largely grown as ever. But many of Mr. Rivers's introductions are becoming popular market fruits, especially Early Prolific; the very early or very late sorts are in most request, for mid-season sorts glut the market, and in plentiful years do not repay the gathering. In some seasons it is no uncommon thing to see rows of trees supported by forked stakes to keep the branches from breaking off under the weight of the crop, which must be marketed within a few days after it is ripe. For this reason, Damsons, or even good Bullaces, are a more remunerative crop. As regards price, few fruits fluctuate so rapidly in the market as Plums. A fine sample of the earliest Goliaths from a wall realised last year 10s. per half sieve; but in a week afterwards the same grower was glad to take one-third that price, and, scarce as fruit was generally last year, there were many Plums left ungathered owing to the very low prices realised.

PEARS.—These are not so much in favour in most neighbourhoods as Apples, although they grow well, and by carefully selecting sorts that are proved to succeed profitable crops may be the result. Medium-sized sorts, such as Bergamots, Swan's Eggs, Sweetwater, and other summer Pears are generally planted as standards, but many of the finest winter Pears would be profitable for market grown as dwarf bushes or pyramids. We have grown them in limited quantities in that way for private use, and certainly they equal, and I think excel, in flavour the produce of walls; they have a more abundant russet on the skin, that generally denotes good flavour. The Pear will doubtless eventually be much more grown as a market fruit than it is at present; not only the common summer kinds, but those that keep for some time after gathering, for imported fruits are not likely to be cheap enough to prevent Pears repaying intelligent culture.

CHERRIES.—These succeed best on soil that is too light for the Apple; they are largely grown in districts where they succeed, but, unfortunately from their period of flowering being early, they are liable to be cut off by spring frost. If they escape they are amongst the most prolific of fruit trees, and Cherry orchards are a beautiful sight in spring. The Kentish Reds, Morellos, and White and Black Heart varieties are those usually grown, and the Morello on the Mahaleb stock is one of the most remunerative fruits grown either on walls or as dwarfs; in fact, it may be said to be a certain and abundant cropper.

Fruit growing for market would doubtless make rapid progress were it not for tithes and other antiquated hindrances to the proper cultivation of the soil. It is to the interest of every class that our home cultivators be able to hold their own in the matter of hardy fruit culture, and I see no reason why home-grown fruits should not become an article of daily consumption. There is plenty of demand for fruit in every form as soon as it is cheap enough to be procurable by the working classes. J. G. Linton.

## GARDEN IN THE HOUSE.

## THE DINNER TABLE DECORATIONS AT MANCHESTER.

THESE seem to have made but little progress of late years. The finest on the whole I remember to have seen were those at the great show of the Horticultural Society at Birmingham some years ago. In the five tables at Manchester most of them were too much crowded. The tables themselves seemed rather too small for twelve, though, of course, the smaller the tables, the less room for decoration. Some also had candlesticks and others none, and there were great differences in the character of the stands, glasses, &c. It has long seemed to me that in order to enable all the exhibitors in a competition of this sort to start fair, the tables should be all laid alike, as far as stands, dessert dishes, plates, knives, forks, spoons, napkins, &c., are concerned. Each table should also have the same number of dessert dishes, say six or eight for a table for twelve persons. All this may be said to pertain to the art of the butler, not that of the decorator. The uniformity of base, as it may be called, would not only vastly simplify the business of decoration, but tend to its improvement. It is no uncommon thing to find many with the best taste for arranging flowers profoundly ignorant of the details of laying the table. Much of their time and thought are therefore distracted from their proper work in doing that which any butler who knows his business could do far better. The present diversity of bare line and furnishing, also distracts the attention and indirectly influences the awards of the judges. I once judged table decorations with a gentleman who insisted that some gold ornaments, some superior glass and crested spoons on the tables should have certain points given to them.

Such preposterous things could not happen were all the tables uniform to start with. The race would be run, the victory then be won by taste in the use and disposal of material alone. Given an identity of size of tables, number of dishes of fruit, and vases, or glasses, or dishes of flowers for each table, taste and judgment would have full scope in the selection of the fruits and flowers and foliage to employ. As a rule most of the tables are overcrowded and overloaded. A sense of heaping up and crowding is mostly the first impression. A few go to the opposite extreme, and make the tables look mean with the scantiness of their furnishing. But this seldom happens. More frequently tables groan beneath the heavy contents of fruit rooms, and are so overdone with flowers or plants as if no other place could be found for a part of the flower garden than the dinner table. There was nothing like such exaggerated overcrowding at Manchester. Still, not a few of the dishes of fruit were rather heavy, and several of the table decorations were massive rather than light and elegant. My notes of the first prize table decorations are as follows: Centre of table, a nice plant of Cocos Weddelliana standing in a base of Water Lilies and other flowers; towards each end of the table a three-tiered glass, the top filled with Pancratiums and blue Cornflowers—a chaste mixture of colour and form, plentifully sprayed with light Grasses; second tier, red Lapagerias and Ferns; base, Pancratiums and Grasses. Of course the ends were alike, and the base of each glass was fringed with Lycopodium and Maiden-hair Fern. There were either six or eight dishes of fruit, of good quality, on the table. The small finger glasses, of which there was, of course, one to each person, were filled with Pancratiums, Clerodendron Balfourianum, and Allamandas. The whole of these harmonised well with each other—a point of great moment in giving a feeling of repose and satisfaction as well as in affording variety—a point of the utmost importance where a different decoration is expected every day throughout the year. One or two of the other tables were also pretty and tasteful, but none were quite equal to the one here described, neither was there anything very special in the material employed nor the mode of its disposal. The most artistic mode of disposing flowers according to



some modern notions—that of merely throwing them down anyhow on the table—was placed third by the judges, though apart from this wild art it showed many good qualities. But the judges were not quite æsthetic enough for the new canon of art, which may be stated thus: the less formality the more taste, the more the less.

D. T. FISH.

### BOUQUETS AT MANCHESTER.

PERMIT me to say that your reporter's hurried estimate of these as being so monotonous as that they might all have been made by one and the same person will hardly be endorsed by those who had leisure or inclination to devote more time to them. The general opinion seemed to be that hardly ever had so few inferior bouquets been seen among so many, a hundred and twenty or so. If by monotony uniformity is meant, it would be pretty near to the truth; without doubt there were great variety of material, arrangement, and even form. As to the latter, we doubt most of the bouquets in general outline partook more or less of the character of a half or three-quarter sphere; but I have yet to learn what form could prove at once more convenient or more beautiful. It offers excellent facilities for the display of individual flowers for placing them in harmony or contrast with each other, while the upper surface of the sphere may be broken up in every possible way by starers and foliage. Some artists affect to prefer a pyramid, a spire, or a column, but surely neither of these forms would prove half so convenient, or could they bring half so much beauty under the eye at once as the part of a sphere; and as to that beau ideal of an artist's bouquet, a natural bunch of flowers placed carelessly in the hand quite as often results in failure as in success. The bunch must either be faced in one direction or balanced to some extent and degree all round, as otherwise the eye would be offended, and the sense of taste and propriety be disturbed. A bouquet in the hand has all space for its display, and is mainly seen and meant to be chiefly enjoyed by its possessor. Given a central point to look on a beautiful object, and a portion of a sphere will not only be the most pleasing to look upon, but will unfold the most beauty to the beholder. Hardly do we depart from this form than the mind will enquire why more flowers are on this side than on that, and what is the merit, artistic or otherwise, of a lopsided over a regularly shaped bouquet. But we want no shape at all, only a bunch of flowers, cry the extreme naturalists, who too often claim a monotony of æsthetic taste. The thing is impossible; all flowers have form, and it is impossible to bunch them out of shape try how one may. It is, however, quite possible to vary the colour and surface of bouquets to infinity, and I submit that there was a large amount of this sort of secondary variation in the grand muster of bouquets at the International Show at Manchester. For example, the first prize bouquet was unique in several features, notably in the use that was made of Rose branchlets and flowers in its composition. Six crimson China or crimson bedding Roses, rather fully expanded in pairs, were uncommon additions to a first-class bouquet; more uncommon still was the liberal use of the twigs of the same Rose, standing up above the flowers alike in the centre and other parts of the bouquet. These were almost as deep a crimson as the flowers themselves. The main portion of the bouquet was formed of white *Lapageria*, *Stephanotis*, *Bouvardia*, and *Eucharis*, with a more sparse use of Fern than usual. But the rare, the loose, and apparently careless way in which they were used, and the use of the Rose branchlets gave a fresh and uncommon look to the bouquet, which so helped it to win the blue ribbon or card. Another prize bouquet had an ivory-like centre of *Lapageria alba* with three *Pancratiums* round it, succeeded by a scarlet *Epidendrum*, then three blooms of blue *Agapanthus*, small pink *Rhododendrons*, more *Pancratiums*, pink *Lapageria rosea*, more *Agapanthus*, finished with scarlet *Begonias* and a wide fringe of Fern fronds. The surface of these flowers, a by no means very even

one of themselves, was made more uneven by standing up fronds of Maiden-hair Fern. This was without doubt one of the most beautiful bouquets at the show, the chief charm and novelty arising from the free use of the flowers of the blue *Agapanthus umbellatus*. Another very pretty wedding bouquet was made with a centre of white *Lapagerias*, pink *Bouvardias*, white *Lapagerias*, *Forget-me-nots*, and a small pink Orchid. The surface of the bouquet was studded with the leaves of *Caladium argyrites*, and the whole was fringed with Maiden-hair Fern. Another, most chaste, simple, and pretty, was formed of white and pink *Bouvardias*, white *Lapagerias*, and *Pancratium fragrans*, with abundance of greenery. What some called the æsthetic, but I should term the antique style, were represented by several bouquets that excited considerable attention. One was formed mostly of common China Roses, *Bougainvillea speciosa*, white *Chrysanthemums* and tuberoses, and had for greenery *Rose-shoots galore* and Maiden-hair Ferns. The more unique of all was formed of a ground-work of yellow *Dendrobium*, stuck as full almost as pins in a cushion with dark Pansies. This, which got a prize, and seemed to be much admired, was said to be the last new thing in bouquets. Others were of similar character, and it is said that special Pansies are about to be grown for the special manufacture of these antique bouquets, and suited for use on white, scarlet, purple, and yellow grounds. I cannot say I like the style, but possibly I have seen too many Pansy bouquets, pure and simple, of enormous size in Paris, ever to like them in bouquets again either alone or in company with other flowers. There were also many others, but these examples will suffice to show that the bouquets varied very much in character and material, and I do not hesitate to say that, take them all in all, they were the finest lot I have yet seen. It may be added that of all the Maiden-hair Ferns employed for greenery in or verdure around bouquets there is none to equal *Adiantum cuneatum*. *A. gracillimum* is too small to be effective, and the *A. farleyense* so effective as a pot plant is too ponderous as vertical greenery or fringe for bouquets.

D. T. FISH.

### CRITICISM AT MANCHESTER.

#### TASTE IN ARRANGEMENT OF PLANTS.

AGAINST stupidity great forces fight in vain, and the very men who would benefit by the improvement of our art are those who oppose progress. For a good many years now there has been a desire on the part of many to see our floral decorations improved, and as a consequence much writing and various illustrations. How much some change was wanted may be judged of by what we see even now in various places where floral decoration is carried out in London, and where the plants are literally built into stiff unbroken banks of flower and leaf. The man who has done most to change all this for the better has been Mr. John Wills, and one of his best efforts was that very large and well-arranged group at the late Manchester show. But probably one of the makers or admirers of the pudding-like banks to which we allude got for once the pen in his hand, and was allowed to criticise this group as follows in the *Manchester Courier*:—

A group by the Horticultural Company of London (John Wills and Co.) occupies the mound, and there is a want of taste in it we did not expect from such experienced decorators. There is a lack of beauty of arrangement in it, and the plants of *Croton* peeping up through the foliage give a very formal and unmeaning character to the group, &c.

Such are the obstacles that those who try to carry out improvements likely to benefit their art have to encounter. There may be unknown possibilities in the plant arrangement of the future, and we trust there are, but it is scarcely necessary to say here that, so far as our present materials and knowledge will admit of, no man has done so much to show the true way on-

wards in the arrangement of plants as Mr. John Wills; therefore we protest against remarks both impertinent and unjust. The fact is we are in a transition state from the days when arrangement of any kind was not paid much attention to, and that although, to most people, beauty tells its own tale, there are some still so crass that the novelty alarms and surprises more than charms them. These are the people who would crowd up a fine Palm with an assemblage of ordinary soft-wooded plants, or put a Weeping Elm in a mass of ordinary shrubs, graduating all carefully down from the centre to the sides, so that no beauty or distinctness of form could be seen. Such people bestow on us so many straight lines and other formalities, that the artist turns in despair from what ought to be one of his best schools—the garden.

B.

**Flowers of *Musa coccinea*.**—In the second prize collection of cut flowers (stove and greenhouse) at the Manchester exhibition were shown two flowers of the above plant, and, judging from the fine effect it had as displayed there, it seems worthy of growing for the sake of the flowers alone. Dr. Schomburg, of the Adelaide Botanic Garden, in his report for 1880 speaks very highly of the value of this plant for decorative purposes where room can be spared for it to develop itself, and Mr. Speed, of Chatsworth, grows it for the same purpose. The flowers are of the brightest scarlet, tipped with greenish yellow, and remind one of those of some of the Bromeliads. By the flower, of course, I mean what botanists call the inflorescence—that is, flowers, bracts, and flower-stem, the whole of which in this *Musa* form a brilliant object about the size of a Cos Lettuce. Planted in a tub in rich soil, or, better still, in a rich bed in the stove, this plant would be found a great ornament both from the size and graceful habit of its leaves, as well as the rich colour of its flowers.—B.

**New varieties of *Croton*.**—As with the *Coleus* so with the *Croton*, there seems to be no end to the varieties that are continually being brought into notice, but now and then occur some really beautiful kinds. In a group of new *Crotons* exhibited at Manchester by Messrs. Ireland & Thomson, of Edinburgh, a few were particularly noteworthy on account of their distinctiveness and the beautiful markings of their foliage. A form of *C. Wiesmanni* named *superbum* is remarkable for high colour and clear mottlings—superior in every respect to the type, even when the latter is seen in its best coloured state. *C. Thomsoni* is a bold and handsome variety having broad obovate leaves about 1 ft. long, somewhat irregular in outline, and effectively mottled with clear yellow on a deep green ground. The habit of growth is robust yet compact. This *Croton* was considered the finest new plant in the exhibition. A selection of the other kinds include *C. Duke of Buccleuch*, *C. Archibaldi*, *C. Etna*, *C. gloriosum*, and *Holdsworthi*, all finely variegated, free in growth, and good in habit. A similar group of *Crotons* from MM. Chantrier Frères, Mortefontaine, Paris, include some strikingly handsome kinds mostly of the broad foliaged type, similar to their variety *Franc Sellière* distributed some time ago. The finest of this group were mosaic with lanceolate oblong foliage beautifully variegated with various shades of crimson, bright yellow, and green in a mosaic-like pattern. *Mortefontaine* has broad leaves, somewhat trilobed, mottled with crimson, gold, and green, and having a robust sturdy habit of growth. *Bergmanni* and *Baron de Rothschild*, both with broad foliage, and green and yellow markings are likewise very handsome kinds. These were the four that were awarded first class certificates. Among others shown were *Carrièrei*, *latimaculatum*, *Brouettii*, *interruptum elegans*, all extremely well coloured. In Mr. B. S. Williams's collection from Upper Holloway was *Bruce Findlay*, a handsome variety, having ample obovate-oblong foliage, boldly variegated with deep green and bright golden



lues. C. Hawkeri, Warreni, Stewarti, and others of the newer kinds were also in fine condition.

#### NOTES FROM DUBLIN.

**Of Poppies** now in bloom, perhaps the most rare and singular is the perennial *P. spicatum*. It forms a tuft of fleshy lance-shaped leaves, and throws up numerous branching flower-spikes 18 in. in height. As in *Meconopsis*, the uppermost flowers are first to expand. Each flower is 3 in. in diameter, and of a pale salmon-vermilion colour, quite unique in tinting from all other Poppies I know.

**P. nudicaule** and its variety *alpinum* are now lovely, the flowers being elegantly Tazza-shaped, and most elegantly frilled or crimped along the petal margins. In colour they are most satisfying, the range of variety running from pure white through several shades of yellow until a vivid orange-scarlet is reached. Easily raised from seed in spring.

**Apera arundinacea.**—A dainty slender growing Grass, and one of the few which can afford to compete with the Feather Grass in graceful beauty. In growth it is indeed almost Rush-like, bearing long weeping plumes of a glossy purplish brown colour. Being perfectly hardy, it will prove extremely useful in places where graceful spray for indoor decorative uses is in demand. The plumes dry well and endure for a lengthened period, even without water, in a slender-necked vase.

**Karaka Nut of New Zealand.**—Can any reader of THE GARDEN tell me anything about this? I purchased a plant under this name at an auction some time ago, and none of our botanical visitors or friends recognise the plant. It is of bushy habit, with oval leaves like those of a *Griselinia*, but of a darker green tint, and if possible more glossy or shining. Apart from its name or history altogether, it is a charming half-hardy shrub well worth a place in the cold conservatory.

**Peperomia prostrata.**—As a neat growing and effective basket plant for a moist warm stove or Nepenthes house, there is nothing more distinct and pleasing in its way than *Peperomia prostrata* (*P. nummulariæfolia*), as its thread-like stems depend gracefully from the edge of the basket, each studded with alternate disc-like leaves,  $\frac{1}{2}$  in. in diameter. These leaves are discoid, fleshy, and nearly orbicular in outline, of a translucent apple-green tint, mottled with darker green. Well grown in Sphagnum and peat it forms one of the prettiest of all small-growing foliage plants.

**Centaurea macrocephala.**—This is a strong habited plant growing from 4 ft. to 5 ft. in height, each leafy stem bearing a great golden bossy head at its apex as big as the fist. For the back part of a herbaceous border or for naturalisation in semi-wild nooks and corners, or in positions where herbaceous plants must perforce compete with the roots of trees and shrubs, this robust and vigorous species well deserves a place as the largest and most effective of all the yellow flowered *Centaureas*. This particular plant may readily be distinguished from its congeners by the flower-stem being inflated and hollow immediately below the involucral scales. In deep rich soils it forms an effective mass, and the flower-heads when cut are very effective arranged with other flowers, or even alone in a vessel with their own leaves.

**Tall Sunflowers.**—How is it that the giant Sunflower has lost its place in nearly all gardens? Here it is now in great beauty, and all our visitors admire it. It associates well with tall Maize, Hollyhocks, and Dahlias. Clumps of Sunflowers planted on a border in front of a *Wistaria* are most effective, and a large manure heap which we must perforce have in rather a prominent position is so disguised with Maize, Sunflowers, Tobaccos, and large Gourds, that people conclude the manure was put there for the plants, whereas the reverse is really the case. In

days gone by Sunflowers were grown in nearly every cottage garden. I have seen some beautiful little pictures of Birket Foster's in which big Sunflowers figure charmingly along with ruddy-cheeked children and creeper-laden cottages. Artistic people come daily to ask for the big golden flowers, and they are much admired also for large vases of blue china. Golden-rayed flowers 1 ft. across are not too common, even amid all our modern hardy flower wealth, hence for their golden glory and stately port I record this plea for Sunflowers, short and tall, single and double flowered; indeed, for Sunflowers proper of all kinds.

**Two hardy fine-foliaged plants.**—In May last I made two little sketches of the early growth of the Big-leaved Groundsel (*Senecio*



*Senecio macrophyllus.*

*macrophyllus*) and of the common May Apple (*Podophyllum peltatum*), both distinct plants, perfectly hardy, and well worth placing so that their early leaf beauty may be well seen. On the



*Podophyllum peltatum.*

young grassy turf of April and May they are seen to excellent advantage, as they may be planted in a deep well-enriched border. Both the plants here represented were quite small pieces when planted out about a year ago, and when thoroughly established their port is more ample than is here illustrated. Plants of this class are most useful in the spring months long before Cannas, Wigan-

dias, Castor-oil plants, and other annual kinds of sub-tropical plants may be safely planted out-of-doors, and they contrast well with Primroses, Tulips, Hyacinths, and other flowers of spring-time. The *Senecio* produces leaves nearly 1 yd. high when well grown, of a soft glaucoustint, and ample substance. They, therefore, stand up well above the ground level, and are robust enough to defy wind, frost, and rain. The May Apple is quite different in port, its glossy green wrinkled leaves being borne aloft umbrella-like on slender undulating wand-like stems. Its Christmas Rose-like flowers of wax-like whiteness are succeeded by green Crab-like fruit; hence the popular name. Of late years this plant has been largely used in combination with the rhizomes of the common Dandelion in forming a medicine of some service in liver complaints. Both plants are so distinct in habit, and so effective in spring and early summer, that they well deserve a good position in all good gardens.

**Calceolaria pinnata.**—Although an old Peruvian species cultivated in the time of Miller, is now by no means a common inhabitant of gardens, although I did see it at Kew, and I fancy also at Chiswick last year. It is figured in the Bot. Mag., vol. ii., t. 41, and is not in any way a showy species. My friend Mr. T. Smith, of Newry, evidently refers to some other species; perhaps *C. scabiosæfolia*, which has lemon-yellow flowers and is far more robust and showy than *C. pinnata*. I am by no means sure that *C. scabiosæfolia* is the correct name of the plant I saw recently at Newry, and which is a pretty plant perfectly naturalised in many gardens, but it is one of the first of all the flowers I remember as growing in my mother's garden many years ago. I have repeatedly failed to hybridise this plant with any other species.

**Verbascum olympicum** is the name of one of the best of the newer hardy fine-leaved plants, and one which will become of much use and beauty in good gardens when better known. It has broad, smooth fustian-coloured leaves, 1 ft. or more in length, and the base, forming a perfect rosette, gives it a most pleasant and unique impression. It is by far the most effective of all the Mulleins, fine as several others are well known to be in that way. As now to be seen at Newry, in Messrs. Rodger, McClelland & Co.'s nursery, it is most effective, and a worthy companion for the too-little-known *Digitalis ferruginea*, like which it is most pleasing before the flowering stage is reached.

**Anemone vitifolia** is now in its full beauty here, very dwarf, and bearing pure white cup-shaped flowers very like those of *A. sylvestris*. It has good bold foliage, and if inferior in stately habit and size of blossom to *A. japonica alba*, it is, nevertheless, welcome for a dry border or for the rock garden. Seedlings of last year are now flowering at 6 in. in height. It is the Himalayan representative of the Japanese *Anemone* (*A. japonica*), growing at an altitude of 6000 ft. to 7000 ft. Our stock is quite genuine, being raised from seeds received some time ago from Kew. Less hardy than *A. japonica alba*, with palmate leaves, those of *A. japonica* and its varieties being more often trilobed. May well be treated as a biennial.

**The Golden Variegated Comfrey** (*Symphytum officinale aureo-variegatum*) is a good bold plant for the Grass; planted in deep, well-enriched soil in spring, it forms a spreading mass of soft, glaucous foliage, fully 4 ft. across the first season, the golden-margined leaves radiating on the turf on all sides in a pleasing way. A hole 2 ft. deep, and the same in diameter, should be dug for it, and a few spadeful of leaf-mould and well-rotted manure should be thrown in. This should then be well mixed up with sub-soil, or better still good fresh loam. Then plant a good strong clump, taking care to make it firm, leaving the crown only 1 in. or so below ground level. The turf may then be returned over the hole, leaving a circle of 6 in. or so above the crown of the plant. Treated in this way, the golden-leaved Comfrey makes a noble



plant for the turf, and contrasts well with the leathery-leaved *Ferulas*. There is a little secret in growing fine-leaved plants—remove all flower-stems as soon as they can be set.

**Gladiolus purpureo-auratus var. Frœbeli.** This has been in flower for four weeks with me, and is still beautiful. The main spike is nearly 5 ft. in height, and had three branches, and it is these last which are now at their best. As its name implies, it was raised by Otto Frœbel, of Zurich, and is a distinctly robust and free blooming plant. I have *G. purpureo-auratus* growing beside it, and a lady of "light and leading" told me it was far more lovely than the hybrid. So be it. I think both beautiful and well worth culture.

**The Wax Plant proper** (*Cerinth major*) is an annual Borage-wort (Claret-cup family) easy to grow from seeds sown in April, and so distinct and little known that it attracts much attention even from botanical visitors. The flowers are borne on a gracefully arching leafy spike, are tubular in shape, indeed, reminding one of those of the Golden Drop (*Onosma tauricum*), but only half the tube is yellow, the basal portion being of a dark brown tint approaching to black. The plant is of a much branched habit densely clothed with ovate stem-clasping leaves of a smooth, soft glaucous tint, those which subtend the floral racemes being shot with purple in a singular way. Its cut blossoms are curiously effective when thus brought near the eye.

**Sweet-scented Verbena.**—Everyone knows somewhat of the ever welcome fragrance of the sweet or lemon-scented Verbena (*Aloysia citriodora*)—the piquant fragrance of the Lemon rind. The old Lemon-scented Cape Pelargonium is very similar in odour, but two other plants just occur to me as possessing the Lemon-like perfume even more distinctly and decidedly. The first is an Australian Gum tree, *Eucalyptus citriodorus*, of which tree, or shrub rather in English gardens, Mr. W. Spinks sends me very fine and highly fragrant leaves; as a pot plant it is a fit and worthy companion to the Pine-apple *Salvia* (*S. rutilans*), or to the musky odour of *Aster argophyllus*, for a small plant or cuttings even of which last here appeal to any garden friend who may possess it in plenty. Another Lemon-scented favourite is the graceful Citronella Grass (*Andropogon Schoenanthus*), grown as a decorative plant in some gardens, and cultivated in Singapore and other tropical islands for the expression of its citronella or essential oil.

**Of good hardy flowers** in all good gardens there is now great plenty. White spires of *Hyacinthus candicans*, *Lilium auratum*, and the many belled spikes of *Yucca flaccida*, contrasted with the scarlet spikes of *Tritoma*, vivid *Gladioli*, *Tiger Lilies*, and the still more vivid *Tiger flower* (*Tigridia grandiflora*), scarlet, purple, white, and blue *Lobelias* send up their many blossomed spikes; alpine Poppies and pretty little dwarf *Linarias* dance in the warm wind, while the vivid blue flowers of *Commelina cœlestis* open their white eyes to the sun. If you want to see the finest of red lacquer-ware excelled in Nature look at the fruit of *Rosa rugosa*, shining and brilliant in the autumnal sunshine. The autumn Blueberry (*Billardiera longiflora*) is at its best on a sunny wall. Sun-loving Pimpernels (*Anagallis grandiflora*), both red and blue, make the bare earth glorious in an embroidered mantle of the deepest blue. Sunflowers and Maize are most stately; Dahlias also, even though they do remind one of the coming cold.

**Of early-blooming Chrysanthemums**, now at their best, Madame Pecaul is a lovely flower of medium size and a clear rosy-purple colour; the florets are incurved slightly, which adds to its beauty. White Queen is in the way of St. Mary, pure white and very floriferous. Scarlet Gem is a free-blooming form in the way of old Brilliant, but earlier and better in flower. Golden Madame Damage and a still earlier kind of a clear lake-purple tint have long been gay in our borders. All are most welcome for supplying cut flowers of a substantial and long enduring cha-

acter, while as plants for the herbaceous borders they are far in advance of the old late blooming kinds, which of late years have rarely escaped the frost in November ere half their beauty becomes apparent. There is a great future, and doubtless much improvement in store for these early blooming kinds.

F. W. B.

## NOTES OF THE WEEK.

**ST. DABEOC'S HEATH** (*Menziesia* or *Daboecia polifolia*).—This little undershrub, common though it be is really a gem. Its large purple flowers contrast well with those of its white variety called *alba*; both are well adapted for exposed parts of the American garden where low growing shrubs are desirable.—ALPHA.

**LESPEDEZA BICOLOR.**—This plant, which has somewhat the aspect of an *Indigofera*, is just now prettily in flower at Kew. It has a small shrubby habit, and during severe winters is cut down to the ground, but in spring it throws up freely from the base, and each shoot produces a raceme of small bright rose-coloured flowers.—H. P.

**FINELY-GROWN COCKSCOMB.**—We have received through Messrs. Veitch, of Chelsea, a specimen of Mr. McLachlan's fine strain of dwarf Cockscombs. The comb measures from tip to tip 33 in. by 18½ in. in breadth. The colour is the deepest shade of crimson, and the velvety mass very showy.

**LILIUM SUPERBUM.**—We have at this moment (August 27) a plant of this over 7 ft. high, carrying forty-one flowers most brilliant in colour, and a most majestic object. It is growing in a border of very ordinary soil and comparatively very dry.—HALLOCK & SON, *Thorpe, Queen's Co., New York*.

**BOUVARDIA HUMBOLDTI** has flowered so abundantly outside all summer in the store ground, that I purpose using it, if all be well, another year largely with *Heliotropes* and the red *B. Hogarthii*. It is nothing new, as I remember *Bouvardias* bedded out near here when a boy, but *B. Humboldtii* was not then in existence in England, and it makes far more flower out-of-doors than in a frame.—E. H. W., *Scarborough*.

**POTATO DISEASE.**—I am sorry to say that the Potato disease in this locality (Howick) is now a very serious matter, as not only are the Potatoes badly diseased in gardens, but in the fields they are utterly rotten—a fatality not mended by the continued wet we are having. Last month has been the coldest, wettest, and most sunless month of August with us on record. Rainfall, 6.29.—DAVID INGLIS.

**PALAFOXIA HOOKERIANA.**—This pretty dwarf annual Composite plant is now beautifully in flower in the hardy herbaceous collection at Kew. It forms a dense tuft about 1 ft. high. The flower-heads are produced freely in loose clusters, and are of a pleasing rosy pink hue. It should be treated as a hardy annual, and grown in a warm border of sandy soil. It is, we believe, a native of Mexico, whence it was introduced a few years ago by Mr. Thompson, of Ipswich.

**MUCUNA IMBRICATA.**—This very singular stove climber is just now one of the most attractive plants in flower in the Palm house at Kew. At first sight the clusters of bloom might readily be mistaken for bunches of black Grapes, being of similar size and shape, and drooping in a similar manner. The flowers are purplish black, and the foliage pale green and divided into leaflets. It is a native of the hot jungles of India; hence it is only in houses where a high temperature is maintained that it can be successfully grown.

**BEGONIA CORALLINA.**—This is the name under which Messrs. Fisher, Son, & Sibray, of the Hands-worth Nurseries, Sheffield, exhibited at Manchester a very beautiful plant, but which probably is the true *B. coccinea*. Its chief characteristic is its being a perpetual flowerer, thus rendering it a desirable plant for cutting from. The flowers are a deep coral red, rather small, but borne profusely

in loose clusters. It is a somewhat tall-growing kind, the leaves of which are large and light green.

**PROPHET FLOWER** (*Arnebia echioides*).—This is the third or fourth time we have recorded the flowering of this showy hardy perennial this season. The plant of it on the rockery at Kew is again as attractive as ever, being furnished with two or three large clusters of expanded flowers.

**TAGETES PARRYI.**—This species, now in flower on the rockery at Kew, is distinct from all the other cultivated kinds. The foliage so much resembles that of some of the alpine Roses, that the plant might be readily mistaken for one when not in flower. The leaflets are finely toothed, and have their surfaces overlaid with a delicate glaucous hue. The flowers are about the same size and colour as those of *T. signata*. If this kind is a perennial it is a desirable plant.

**NEW CARNATIONS.**—Two strikingly beautiful new varieties of Carnations were among the things that most attracted us at Manchester. One was a perpetual flowerer, named The Governor, raised by Mr. W. J. Cross, The Nurseries, Salisbury. Its flowers are large and of fine form—quite rosettes of delicate blush, so soft as to be almost white. Valuable in a cut state in winter. The other new kind was one named H. P. Milner, from the Hands-worth Nurseries, Sheffield, a Clove with pure white blossoms, large and well shaped, on plants of compact habit and very floriferous.

**SCARLET AUTUMN HEATH.**—Among the showiest of the Cape Heaths that flower in autumn is *Erica cerinthoides*, which has been a favourite for upwards of a century, and is one of the most brilliantly coloured amongst the hundreds of kinds now in cultivation. Its flowers, which are produced in dense terminal clusters, are vermilion-scarlet. There are three or four varieties of it more or less distinct, *coronata* being the best, as the flowers are larger and of a brighter colour than those of the type. In most of the nurseries about London this beautiful plant may now be seen in flower, and it is also in fine condition just now at Kew.

**ASTER PTARMICOIDES.**—This is one of the best of the numerous family of Michaelmas Daisies that are just beginning to flower. It is, moreover, very distinct from any of the rest, as it is dwarf in growth, being only about 15 in. high, and the ray florets are pure white and the centre creamy white. It is showy when in flower, forming, as it does, a dense tuft, and every stem being terminated by a cluster of flower-heads. It flowers a fortnight or so before the majority of the other kinds, a circumstance which makes it more desirable. It may be seen in flower in the collection at Kew, but it does not appear to be grown in nurseries yet. It is a native of dry rocks in the Eastern United States.

**NEW CONIFERS.**—Among the newest additions to ornamental coniferous trees are two forms of the Hemlock Spruce (*Abies canadensis*), that have originated in Mr. Anthony Waterer's nurseries, Knap Hill, Woking. One named *pendula* has elegantly drooping branches; the other, *variegata*, possesses a silvery tinge, which renders it distinct and attractive. These two were awarded certificates at the late Manchester Show. There was also another new conifer there equally deserving a similar distinction. This was a golden-leaved variety of *Taxus adpressa*, named *aurco-marginata*, which originated with the exhibitors, Messrs. Fisher, Son, & Sibray, Hands-worth Nurseries, Sheffield, a strikingly handsome kind, the golden hue being remarkably clear.

**ADENOCALYMNA NITIDUM.**—This beautiful stove climber is allied to the *Bignonia*. Its woody slender stems are furnished with evergreen leaves of thick texture in pairs or threes. The flowers are produced both from the axils of the leaves and terminating the stems, and are trumpet-shaped, about the size of those of *Allamanda neriifolia*, and of the same beautiful clear yellow colour. The plant continues to flower for a long time, those at Kew having been in bloom for some weeks, and still in flower in both of the aquatic stove houses. It



is a native of Brazil, hence requires a hot and moist temperature to grow it successfully. The other cultivated species is *A. comosum*, the Hop flowered kind which is very similar to *A. nitidum*.

**DEVERILL'S PATENT IRRIGATOR.**—We learn that this excellent apparatus for watering gardens invented by Mr. Deverill, of Slough, received a certificate of merit at the last Manchester Exhibition.

**NATAL BEGONIA.**—Of the numerous kinds of Begonia in flower in the No. 8 house at Kew none are so pleasingly attractive as *B. natalensis*, a species having a dense bushy growth, small foliage of bright emerald green, and an abundant supply of delicate rosy pink blossoms produced in loose drooping clusters from every part of the plant. It is invaluable for cutting from, and we presume it flowers equally well in winter; if so, it will prove a desideratum.

**PRIZE LAWN MOWER.**—The silver medal offered by the Manchester Horticultural and Botanical Society at the late exhibition for the best lawn mower, was awarded to Messrs. John Crowley & Co., Meadow Hall Ironworks, Sheffield, who exhibited their "Invincible" lawn mower (Samuel Edwards' patent) through Messrs. Leech Bros. and Hoyle, of Manchester. There was a numerous competition for the prize, and each machine was tested thoroughly in various ways.

**CLEMATIS DAVIDIANA.**—This handsome Chinese shrub is again beautifully in flower against one of the walls at Kew. It much resembles *C. tubulosa*, the Mongolian species, but is altogether the showier plant and superior to that kind in several respects. The flowers are porcelain, Blue-bell shaped, and produced in such dense clusters from the axils of the leaves that they constitute a fine mass of colour relieved by the deep green foliage; flowering, too, as it does at this time of the year, it is all the more desirable. It does not appear to be a large growing kind. The plants at Kew, which have been planted some years, are only about 5 ft. high. It is perfectly hardy in this country.

**NEW STOVE PLANT.**—The beautiful climber with the terrible name of *Mascarenhaisia Curnowiana*, that Messrs. Low, of Clapton, have introduced to us from Madagascar, promises to be really a fine addition to stove plants. It has slender twining stems and pointed short-stalked leaves and terminal clusters of star-shaped blossoms of a delicate rosy pink and about 1½ in. across. The flowers bear a strong resemblance to those of a Jasmine, and the plant might appropriately be called the Rosy Jasmine in lieu of a more euphonious botanical name. It was unanimously awarded a first-class certificate at the last meeting of the Floral Committee at South Kensington.

**NEW CRINUMS.**—Roseum is now actually in bloom; it has a fine spike of between 2 ft. and 3 ft. in height, with sixteen flowers of a deep rose colour and good tubular form and well opened mouth. The flower-spike of another variety is nearly at its full height, and will, I hope, be open soon. The third, which is the strongest plant of all the three, has not yet shown any sign of flowers, but from its great vigour I am in hopes it will yet do so before the end of the autumn. I bought them as three distinct varieties, carefully selected from a batch of seedlings, and producing respectively pure white, deep rose, and white striped with rose-coloured blooms, but in Messrs. Henderson's new catalogue, just published, I see they only offer the two first-named, no mention being made of the third.—W. E. G.

**EXPERIMENTS IN KENT.**—I regret to say that *Nymphaea flava* has not yet shown any signs of flowering. I have no doubt it is in consequence of the very cold sunless August, as it was in flower at this time last year; it is in good health, and is pushing out its stolons freely; and if we could get a few weeks' warm weather, it is not too late for it to flower yet, as it (like many southern plants) is late in starting into growth, but continues to grow till killed by frost. *Thalia*

*dealbata* has failed to open its flowers. I find them rotted within the involucre. This cold, wet weather has injured many other things. I had a row of Lima Beans, from 6 ft. to 7 ft. high, and in full flower, but they are getting yellow, and I fear are done for. I have also a bed of the American (Nutmeg) Melon, one plant of which has twelve well grown fruits, but they are fast decaying. —J. H. J.

**FINE NORTH AMERICAN SHRUB.**—From Mr. J. Saul, Washington City, D.C., we have received some excellent flowering specimens of a beautiful shrub named *Gordonia* (*Franklinia*) *pubescens*. It belongs to the same Order as the handsome *Stuartia* from the same region. It has broadly oblanceolate leaves of firm texture, finely serrated, alternately arranged on woody branches. The flowers are some 2 in. across, having the outer envelopes of a silky nature. The petals are large, white, and form a symmetrical corolla. The stamens are numerous, and form a tassel-like tuft in the centre. Mr. Saul thus writes of it: "This lovely shrub is now in full beauty; has been so for some weeks, and will continue till the middle or end of September. It stood in my nursery during the past winter, when the thermometer indicated 22° below zero. There is no question therefore as to its hardiness. But it must be planted in a dry warm position where the wood will ripen well."

**AILANTUS GLANDULOSA.**—Those who have not seen this tree in fruit could scarcely conceive what a beautiful object it is. In the arboretum at Kew there is now a tree of it in full fruiting beauty, and a source of attraction to all who pass near it. It is literally covered with long drooping clusters of crimson-tinged keys that much resemble those of the Ash or Maple. The handsome pinnate foliage with the deep tone of green forms a charming contrast with the crimson tint of the fruit clusters. The tree is some 20 ft. or 30 ft. high, and has a symmetrical rounded head. This tree is near the river extremity of the large lake in the pleasure grounds, and is surrounded by trees of *Pinus Laricio* and the White Poplar, while behind are some fine old Birches. The sombre deep green of the Pine, the silvery foliage of the Poplar, and the *Ailantus* form a strikingly handsome group. Though the *Ailantus* flowers freely enough in some places, it is only in seasons like the present that it perfects its fruit.

**CUPHEA ZAMPANI.**—One of the handsomest of the late flowering annuals is this Mexican plant, which somewhat resembles the better known *C. silenoides*. Fine as it is, we have seldom met with it elsewhere than at Kew, where it is now showily in flower. Its growth is erect and about 18 in. high, the upper halves of the stems being thickly furnished with blossoms. These are large, and have two enlarged petals of a rich purple maroon, feathered and edged with a lighter hue. It begins to flower about the end of August, and continues in beauty till destroyed by frosts in October. It is, therefore, a valuable hardy plant, as few other annuals or even perennials are in flower at that season. It should be treated as a half-hardy annual. Its correct name is *C. lanceolata*, but it is generally known under the name *C. Zampani*, which Roetz gave it. It was first introduced to the Chelsea Botanic Garden nearly a century ago, and it is somewhat surprising that such a fine plant should not be better known than it is.

**AUTUMN FLOWERING COMPOSITES.**—A good collection of the finer types of these could now be made from the hardy herbaceous department at Kew, a third of which is wholly occupied by the Composite. The tall yellow-flowered kinds, such as the various kinds of *Silphium* and *Helianthus*, are too coarse in growth for ordinary gardens, but such as *Harpalium rigidum*, *Rudbeckia Newmanni*, *Coreopsis auriculata* and *lanceolata*, all of which have yellow flowers are fit for any garden of whatever description. *Achillea filipendulina* is a noble plant of medium height, having cut foliage and broad flat heads of deep orange yellow flowers. The single Dahlias are also highly attractive. The little slender growing *D. glabrata* with puce-tinted flowers is the only one not generally grown, but no

doubt such a pretty plant will soon become as popular as the rest. The *Solidagos* are a puzzling lot, and it is a difficult matter to make a selection from them, as they are all so much alike, differing only in size and habit. *S. canadensis* is now very fine, being some 7 ft. or 8 ft. high, and *velutina*, *Virgaurea*, *serotina*, and *speciosa* seem to be the best. The *Asters* are beginning to flower; among the finest of those already expanded are *A. patulus*, *ptarmicoides*, *Amellus*, *bessarabicus*, and *linifolius*, all very desirable, being of dwarf growth, with the exception of *A. patulus*, which is about 5 ft. The *Eupatoriums* are noble plants when in bloom; *E. purpureum* and *verticillatum* seem to be the finest.

## EDITOR'S TABLE.

**REMARKABLE LAPAGERIAS.**—Mr. Titus Salt's gardens at Milner Field are famous for the wonderful growth of the *Lapageria* therein, and we have now before us very remarkable growths of this plant. A long and graceful shoot which has marks of flowering on every joint for a length of 5 ft. breaks out at the point into a bed, so to say, of massive blossoms. Another lovely shoot has the same large bouquet of flowers at its base, and then breaks further on into smaller nests of flowers and buds. Mr. Anderson, in a note sent with these nobly laden shoots, says of the first mentioned:—

It had sixty-nine flowers, and at present there are twenty-nine expanded on a piece of shoot about 3 in. in length. It is cut from a seedling plant sent here a few years ago by Mr. E. Salt, of Ferniehurst. The house just now is a brilliant sight—I think even better than last year. There is a spray of *L. alba* not yet quite open, which has fifty-four buds on it, two, three, and four at a node. We moved some very large plants last December which have flowered abundantly all the summer.

The other shoot mentioned is the variety called *rosea*, a beautiful kind with massive waxy flowers fine in form. What a handsome plant this must be under the conditions it likes in its own country! The length of time the flowers of this plant last when cut is not the least of its merits. The great bunches of flowers on long waxy stems last a good while even in a London room, notwithstanding the long transit. Where such graceful and well-laden shoots can be spared for cutting and placed directly in water, they must be an invaluable aid in room decoration.

**A YELLOW GLADIOLUS.**—A singularly beautiful *Gladiolus* comes from Mr. De Graaff, of Leyden, the buds being of a delicate green hue. If we mistake not, this will find many admirers among those whose favourite colours cannot be counted on the fingers. It is named *G. sulphureus*. A good many of our notions about colour in flowers and its arrangement in gardens require weeding out. We hope to see a great many beautiful shades of colour in our gardens, which, like this, are not such as are sought for affording strong contrasts, but which are certainly none the less valuable on that account. This straw-yellow *Gladiolus* is as good by artificial as by daylight.

**THE SCARLET CLEMATIS.**—This plant proved so satisfactory during the past season, that we felt some pleasure in having directed attention to it by means of a coloured plate. The following letter from Messrs. Hallock, of Thorpe, Queen's County, New York, affords important evidence as to its hardiness. "At this date (August 27) we have *Clematis coccinea* with vines 7 ft. long; and one has already six flowers past, four now in full bloom, and eight more buds in different stages of development; total, eighteen on the vine, and apparently more to come. This



same plant withstood our late severe winter without the slightest protection. We feel sure it will be perfectly hardy in England, and is without doubt one of the most beautiful climbing plants ever introduced. In this case, as in others, the plant will prove better than the plate promised.

**SCILLA LINGULATA.**—A slender kind with a spike of flowers 3 in. long, deep lilac or pale purple. It comes from Mr. Kingsmill's garden, and is an Algerian kind brought home by that gentleman. As an autumn blooming Squill it may be interesting in collections.

**EUCOMIS REGIA.**—A bold and improved ally of the old well-known, but not much admired, *Eucomis punctata*. The flowering part of the stem is 16 in. long, and furnished like a fox brush. It is a marked improvement on the older kind, though, like it, not attractive in colour.

**THE SWEET SULTAN** (*Centaurea moschata*). Three forms of this old annual, bright yellow, creamy white, and pale mauve. These are important plants for the flower-cutting garden, so to say, if for no other purpose. From Mr. Dickson, of Covent Garden.

**FUCHSIAS FROM SEED SOWN IN 1881.**—Messrs. Sutton send us a very good series of both double and single Fuchsias, and raised from seed sown in the early part of the present year. The plants have been in flower some four weeks now, and are strong and robust, about 18 in. to 2 ft. 6 in. in height. There may be nothing very remarkable in this, but it suggests with other evidence in the shape of fine seedling Verbenas that much of the troublesome striking and keeping over the winter of certain kinds of stock might well be supplemented by a more systematic attempt at raising what is wanted in the spring. At present we depend so much more on cuttings and plants kept over, that there is hardly room for healthy seed-raising. What is done in that way is usually thought of little importance, and not paid much attention to. The poor, drawn, crowded seedlings perish or make miserable plants. It would be interesting to know what could be done by a grower who was obliged to depend wholly on seeds.

**FINE GLADIOLI.** We are indebted to Messrs. Kelway for some beautiful specimens of six varieties of Gladioli. The colours are particularly fine. *Antrobus* is a pale rose-pink striped one; *Hercules* of a deep rich rose colour; *Trajan*, a pale pink interior and deep pink edges; *Lord Derby*, a fine vermilion; *Meleager*, a most delicate tint of pink with deep rose striped edges, and *Silenus*, almost a pure white with rich stripes of pink colour in the centre of each petal. It is satisfactory to note that an English grower has made such remarkable progress with these noble plants, so as to largely supply the home trade. Messrs. Kelway grow about twenty acres of Gladioli at Langport, in Somerset, and, judging by the superb spikes sent to us, their grounds must be worth seeing at certain seasons. We should like to see the culture of other classes of bulbs, for which we now depend so much on foreign growers, brought to perfection by our own people.

**THE SINGLE DAHLIAS.**—We trust the florist proper may never be lost to us, as the result of his labours is often precious, but recent progress has knocked on the head for ever all arbitrary rules as to flowers. The single Dahlias alone repay us for this. Some time ago we issued a coloured plate of them which many of our readers thought did them justice, but some brought

to us during the week by Mr. Kingsmill and Mr. Ware surpass anything we figured. The *White Queen* brought by Mr. Ware is a beautiful flower, soft and sweet in hue and of a fine form. A few of it in a jar are charming, and wholly unlike anything we saw of Dahlias a few years ago. The Dahlia bloom is very poor and late about London this year. A better system of cultivation is desirable, so as to get the plants in flower sooner. They should be put out earlier, stronger, and be protected for a few weeks in addition to having the good and deep soil which the Dahlia enjoys.

#### NOTES FROM SCHÖNBRUNN.

AT Schönbrunn the chief attraction just now is the great Palm house in course of erection. It is an imposing building, somewhat like the Palm house at Kew; the central part is nearly 100 ft. high, and the side wings proportionally lofty; the whole length of the building is about 350 ft. Double glazing being necessary for our severe winters, it has been thought best to have a space of 5 in. between the two roofs; the greater part of the glass is already put in. I am told that two modes of heating will be adopted, viz., hot water and hot air. The Orchid department contains 400 species, mostly grown on blocks and baskets; during the summer months the free-growing kinds are suspended in brick pits above a tank of fresh water. Amongst others I noticed a plant of *Sobralia macrantha* 3 ft. in diameter, and *Peristeria elata* with over 100 blossoms on it. There were also some handsome Palms and a seedling of *Vriesia speciosa*, the foliage of which was finely striped with yellow. Heaths and Epacris are a speciality here; they are planted out in beds during summer, and, judging by their healthy appearance, they are benefited by this mode of treatment. Out of doors the flower beds, as usual, are in fine condition. Much use is made of the various forms of succulents, and many sub-tropical Palms, Tree Ferns, and Musas are plunged in sheltered shady spots. Of hardy plants I noticed several beds filled with *Tradescantia virginica*, *Tritoma Uvaria*, and *Bocconia japonica*, the last finely in bloom.

L. LACHENBURY.

L. KROPATSCH.

#### NOTES FROM BICKLEY.

*Rhexia virginica* is a plant generally considered difficult to grow, but planted in sandy peat we find that it thrives luxuriantly and increases rapidly. Cuttings in heat strike as freely as those of any soft-wooded *Melastomad*.

*Calamintha alpina* is a beautiful lavender flowered member of the Dead Nettle family. It may be described as a perpetual bloomer, never looking untidy, and one of those plants which, shedding their seed early in the year, produces an abundant crop of seedlings established enough for enduring the winter. It grows at most scarcely 1 ft. high, and therefore is classed among alpins.

*Zauschneria californica*, as usual, when everything beside seems preparing for winter, gives us a blaze of its tubular scarlet flowers. It is a member of the Evening Primrose family and may be easily reproduced from cuttings.

**Rudbeckias.**—The best of the autumn yellow-flowering Composites. Some of them puzzle me greatly. Plants coming to us under the following names, *R. fulgida*, *R. Newmanni* (*R. Newmanni*), *R. hirta*, and *R. serotina*, appear to be so nearly allied that it is scarcely worth while recognising a difference. *R. nitida*, I believe, is nearly new, and very distinct and desirable. It has large glaucous foliage, resembling that of *Ligularia thyrsoides*; a stem quite 6 ft. high, bearing one or two flowers of extraordinary size; in diameter from tip to tip of lingulate florets, I shall not be exaggerating if I say the heads measure 5 in. Outer florets, a good yellow, and receptacle, conical,

not discoid as in *R. Newmanni*. *R. sub-tomentosa* is a very good kind, something in the way of *R. Newmanni*, but taller, and not less showy. *Scolymus hispanicus* is a capital autumn-flowering kind, something like *S. grandiflorus*.

T. HATFIELD.

**Adiantum Tabarum.** This curious variety was raised from seed by M. Tabar, of Montmorency. Its bushy growth, its fronds, set on robust peduncles, its massive pinnæ, its dark green colour, and its vigour, all tend to render it a distinct and interesting plant. It has, however, become somewhat scarce, and Mons. Godefroy-Lebeuf had much difficulty in securing a few dozens of it.

**Marigolds.**—These are now making a fine display; they withstand the vicissitudes of our climate better than most flowering plants; in their early stages, when other plants were flagging from drought, Marigolds looked fresh and green, and now that the rains have dimmed the brilliancy of ordinary bedding plants they are masses of flower. The large yellow varieties, alluded to by "A. D." (p. 234), are exceptionally fine this year, their flowers being as large as those of good sized Dahlias. They come in well for the backgrounds of mixed borders, as Phloxes and other early flowers fade and are cut away.—J. G., Linton.

**Among the Peas.** In answer to Messrs. Carter & Co., allow me to say that the variety of Pea I have got for Telephone, if not obtained from them direct, was got for me from them by a firm about whose uprightness in business there can be no doubt. The plea of a wrong Pea having been put into a Telephone bag I am willing to accept. What I want, either from the Messrs. Carter or others, is the name of the productive Pea I have, the description of which is given in THE GARDEN (p. 215).—R. M. L.

**New Pea.**—I herewith send pods of a Pea that has originated in this neighbourhood. As will be seen, it fills the pods with very large Peas almost to bursting, and cooks a better colour than any other Pea we know. It is a most prolific kind, and grows from 5 ft. to 6 ft. in height. It is not perhaps so sugary as the Veitch's Perfection type, but this would probably be a recommendation in some cases.—S. FINNEY & CO., Newcastle-on-Tyne. [Evidently a good Pea; pods 3 in. long, containing 8 Peas—large and of good colour.]

**Indian plants.**—Amongst a parcel of seeds just received from India are the following: *Exacum tetragonum*, *Bauhinia diphylla*, *Lawsonia alba*, *Duranta Plumieri*, *Argyrea nervosa*, *Thevetia nerifolia*, *Murraya exotica*, *Datura fastuosa*, *Woodfordia floribunda*, *Beaumontia grandiflora*, and *Mezoneuron cucullatum*; and as I cannot find the names in London or any book to which I have access, I should feel much obliged if any correspondent could give me any information or cultural directions concerning them. I am informed, though I know not whether accurately or not, that some of these have not been introduced into England before. Is this the case?—BETIE.

**Defoliating Pelargoniums.**—My gardener cuts most of the leaves from off my Pelargoniums before he pots them prior to putting them in a greenhouse. My belief is that he ought to leave them perfectly quiet, lift them carefully out of the ground, and pot them. I lose an enormous quantity each winter, and I believe owing to their being so cut about they cannot withstand the cold damp. H. B. T. [The less Pelargoniums are cut about when being lifted the more quickly will they re-establish themselves in the pots. All that should be done is the shortening back of long shoots, and also of a portion of the roots, that the plants may go in small pots. Place them in a warm house or pit and keep them close for a week or so; many of the old leaves may then be picked off easily, a safer plan than cutting them off when first lifted.] —W. W.]



## COUNTRY SEATS AND GARDENS.

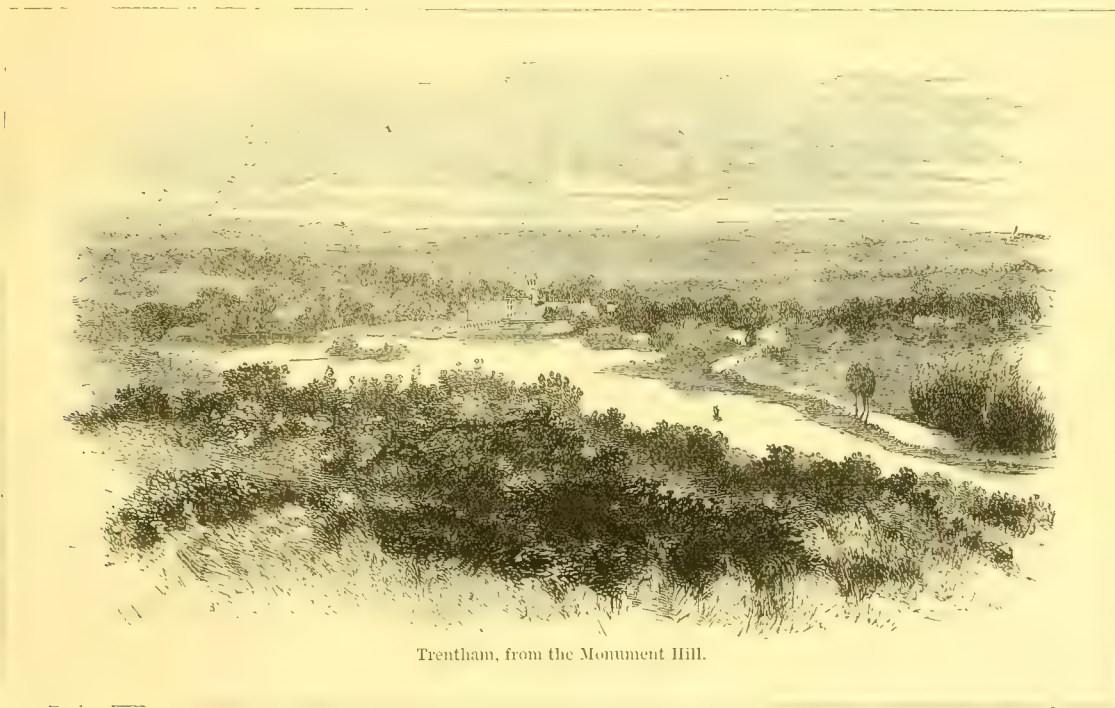
## TRENTHAM.

We have often to consider the value from an instructive point of view of famous gardens or show places and those much less talked of, and we often find that a place "never heard of," so to say, is better worth seeing from a gardening point of view than the show place of which most people have heard too much. But the combination at Trentham of more than the ordinary "properties" of the show place with excellent and always improving practical work in the gardens makes it always worth a visit, and always suggestive and instructive to the visitor. Trentham is charmingly situated in the valley of the Trent, but only a few miles from that populous and not very fascinating district in Staffordshire known as the Potteries. The country around Trentham cannot be termed romantic, but it is rich and varied, and in some parts, particularly in the

possesses broad breadths of turf that serve as a kind of transition from the flower garden to the quieter surroundings of the lake. Whether or not Trentham would look as well if it simply rose from a broad sweep of turf running to the water's edge and adorned with noble tree and shrub life may be a matter of opinion, but few will doubt that too much is made of the Italian style, which is highly expensive to maintain. It is certainly the architect's idea to put as it is called a transitional garden between the house and the garden proper, but in nine cases out of ten the architectural embellishments and stiff formality detract much from the harmony of the surroundings. The borders in the garden nearest the house are simple in design, and when filled with bright plants are extremely effective, and do not have the appearance of being too lumpy. This season Mr. Stevens is growing annuals in the scrolls—such things as Phlox Drummondii, Larkspur, Stock, China Aster, Linum, Calliopsis, and plants of a similar

about the front garden are things of uncommon occurrence, and they give an air of brightness and life that would be difficult to attain with any other class of plants. These pyramids are nothing more than old plants placed together and arranged so as to form a cone or pyramid. Portugal Laurels and Bays in tubs must not be overlooked, for they are quite in keeping and form important integrant parts of the whole style of these Italian gardens. The plants show signs of being severely injured by the late winters, though every precaution was taken to preserve them from injury.

From the front of the house the eye is carried across these gardens and the broad expanse of ornamental water to rising ground about a mile distant, richly clothed with undulating masses of dense foliage, which at this season when it is assuming its varied autumnal tints, forms a beautiful background for such a rich landscape. This bold promontory is known as the Monument Hill, as on it there is a statue of a former Duke



Trentham, from the Monument Hill.

neighbourhood of the river, picturesque. The Trent winds its sluggish way through the garden, severing it in about equal parts, and there was a time when it was a silvery stream teeming with life, and a real embellishment to the surroundings, but now it is little better than a sewer, polluted by the dirty crowded towns that hug its banks among the Potteries. The only remedy is to divert its course or cover it over—both formidable and expensive operations. The principal façade of the mansion is very dignified, as are the formal architectural gardens that are spread out at different levels in front of it. These gardens are formal in the extreme, one side having its counterpart on the other in mathematical precision, but being adorned with fountains, statuary, and other architectural embellishments, the monotonous flatness which otherwise would prevail is somewhat relieved, and the flower beds when filled with colour give a gleam of brightness to the whole. The garden nearest the house is kept the brightest, the next below it less so, and the part adjoining the lake

character that flower pretty much about the same time, and they certainly produce a good display.

In the case of the tall growing annuals that would have a ragged appearance when in flower, Mr. Stevens has the stems pegged down to the soil, and in a few days the heads of flower rise again, and so form a mass of uniform height. The Larkspurs in particular are amenable to this plan of pegging down, as their stalks do not break and they quickly regain an erect position. This style of bedding with annuals is commendable in many respects. It does not entail much labour and expense, and it is an agreeable change from the eternal monotony of Pelargoniums, Calceolarias, Lobelias, besides giving more latitude as regards the disposition of the colouring from year to year. It must not, however, be interpreted by these remarks that tender plants are repudiated at Trentham; on the contrary, they are used with excellent effect in other ways; for example, such pyramids of scarlet Pelargoniums as are placed at intervals

of Sutherland, and from here the sketch of one of our views was taken, showing the lake and its surroundings and the course of the Trent to the best advantage. The greater part of the woods, which crown the hill and run down to the water's edge, appear to consist of the common type of forest trees, but here and there along the margin of the lake are spacious openings where some of the finer of the hardy exotic Coniferæ have been effectively planted, and they appear to be thriving capitally in this position, though in other parts of the ground they have totally failed, and have had to be replaced by other trees. Near the house, however, a few fine Cedars of Lebanon cast their far extending shadows across the greensward, and harmonise charmingly with the rich architecture of the house, and in another part the Atlas Cedar is found to thrive. It is to be regretted that many of the finer types of Coniferæ will not succeed about the principal parts of the grounds, as they would, if the right kinds were selected and rightly placed, add much to the



beauty of the place, and give it quite a new character in winter when deciduous trees are bare. This part near the lake, however, will in course of time furnish some fine specimens, and from their singularly prominent position the little gathering of them will form a fine feature viewed from the front of the mansion.

The lake is a noble expanse of water, bounded on the right by a magnificent wood, but our first impression of it was that of an over-flooded meadow, as the surface is somewhat unnaturally high; were it lower the banks would admit of being more diversified by vegetation, rocks, &c., thereby enriching the lights and shadows—always the most beautiful feature of ornamental water. The eyots are picturesque, as the trees drop themselves so elegantly to the water. The lake is now replenished independently of the Trent, since that river has become so foul.

Adjoining the formal gardens we have a beautiful glimpse of true garden landscape scenery, pleasing in its simplicity, and creating an idea of repose intensified by the sudden transition from the Italian style. Here we have a beautiful scene effected by simple, natural means—broad open glades of verdure broken and lighted up at intervals by bold masses of shrubs, not of geometrical outline, but with those retiring sinuosities and projecting points which give them such a picturesque effect. The largest masses are composed chiefly of Rhododendrons of the old ponticum type, which thrive so well here, but these are gradually giving place to the most beautiful of the modern varieties, and already there are some wonderfully fine bushes of such lovely sorts as Mrs. R. S. Holford, Joseph Whitworth, Michael Waterer, Lady Cathcart, and others of proved merit. The Hollies, too, are quite a feature here—fine pyramids of such fine kinds as Hodginsi may be seen in all directions rising boldly from the lawns. The noble tree growth interspersed throughout these grounds constitutes their chief beauty, and renders the more subordinate parts more effective.

The Japanese Maples, with their feathery foliage, from the brightest emerald green to deep red hues, are here perfectly hardy, and contribute in no small degree to the beauty of the surroundings. This spot is just the place in which *Lilium auratum* would attain its full development, as the place so nearly approaches in character that of Duneevan, Weybridge, where the finest specimens have been grown. If these were planted in Rhododendron clumps they would brighten them up when the Rhododendrons were not in flower, as would also groups of the finer type of hardy plants, such as *Pyrethrum serotinum*, *Acanthus candelabrum*, *Helianthus orgyalis*, *Bocconia cordata*, the Gunneras, and plants of similar noble bearing, such as *Arundo Donax*, *A. conspicua*, and the Pampas Grass, all of which would be at home near the water's edge.

THE CONSERVATORIES.—That adjoining the mansion is shown in one of our illustrations. It is known as the private conservatory, to distinguish it from the larger one in the grounds. Our woodcut shows the interior of the structure as it was till very recently, it having been altered considerably, so as to make it more enjoyable. For instance, plate-glass has replaced the small panes, so as to admit of a more extensive and uninterrupted prospect, and the heating apparatus has been modified, so as to facilitate moving about the building. It is not a plant house proper, but rather an adjunct to the drawing-room which leads into it. It is certainly superior in many respects to the structures erected now as promenade conservatories, for there are no useless stages and other impedimenta which render a modern conservatory of the ordinary stamp so objectionable. From this house the views are delightful; in one direction the eye is carried

beyond the lake to the richly wooded hill in the distance; in another it is directed towards the noble carriage drive with its fine avenue of trees and into the park; but in order to effect this Mr. Stevens has lately made extensive clearings of the dense evergreen growth which crowded round the building, like in many places where the small trees planted originally grow without due attention being paid them as regards thinning.

To particularise all the notable plants grown in the plant houses would be a long task, but we may mention a few of the most remarkable. In the conservatory, a spacious structure with a ridge and furrow roof, the plants are for the most part planted out, and there are some fine specimens of the beautiful *Luculia gratissima*, which in spring perfumes the house with its dense clusters of rosy-pink flowers, *Camellias*, *Passifloras*, and a host of fine Australian shrubs, only to be seen in such extensive gardens as this.

Of course, all of the commoner kinds of ornamental plants are grown in large quantities, for the demand for cut flowers at all seasons is great. For instance, there are housefuls of *Eucharis*, *Poinsettias*, *Acanthiads*, *Euphorbias*, *Begonias*, *Epiphyllums*, *Ardisias*, to meet the call for their flowers, while fine foliaged plants are grown in like abundance. Among the latter were some scores of the beautiful *Pteris tricolor*, with fronds healthier and of higher colour than usually seen. It is an extremely pretty Fern, and one that is not half known enough. Unfortunately, with most cultivators, the fronds are apt to soon become browned by unskilful treatment, but grown as at Trentham scarcely a faulty frond is discernable. Greenhouse Rhododendrons are favourites here, as they ought to be generally, for about a dozen of the best are among the most beautiful occupants of the greenhouse we have.

COOL ORCHIDS.—These are the plants above all others that receive special attention at Trentham, and the collection both as regards extent, health, and vigour of the plants will compare with any we have yet met with, either in private gardens or nurseries. Such exceptional success as has attended the culture of these reputedly difficult plants illustrates in a striking manner what may be done with any class of plants in the hands of a good gardener. A glance at the collection suffices to convince one that it is managed in a common-sense manner, and all the conventionalities which orchidists lay down are only followed in the broad principles, not strictly in the detail. For example, the houses, according to the ideas of most Orchid growers, would be wholly unsuitable, as they are too high and altogether too spacious, yet we doubt if a similarly fine collection could be shown in this or any other country than is to be found in them. One of these houses in particular is lofty and roomy, yet the plants seem to revel in the atmosphere it contains, which is moist and cool, just that one would expect to find on the Cordilleras. In this house is a front stage with hundreds of *Odontoglossums*, chiefly of the *crispum*, *cirrhum*, *Pescatorei*, and similar types, all with plump and shining bulbs and in the most vigorous health, while suspended near the roof are plants of other kinds, such as *Dendrobium infundibulum* and *Jamesianum*, which Mr. Stevens considers not a warm-house kind, but a cool one; in fact, one that requires almost aquatic treatment in the growing season. On a lofty shelf against a back wall, just beneath the ventilators, was a quantity of *O. crispum*, than which we have never seen finer. In this cool spot facing northwards, not too light, the plants seem to revel, and the air being always in motion above them, they are not exposed to any injurious

draughts. On all the pots is a layer of living Sphagnum—always a pretty good index that the soil is in sweet condition.

This house is occupied by plants not in flower, while in another of similar dimensions there is always a more or less fine display of flowers. Just now scores of fine plants of *O. crispum* are throwing up spikes, and several are in full bloom, the varieties of most of them being the finest that it is possible to have. There is a wise discrimination exercised with regard to the selection of the kinds grown; no merely interesting or botanical plants are grown, therefore the collection when in flower is not marred by any dull colours, but the whole is bright, and the display is altogether one of great beauty. Besides the *Odontoglossums* mentioned, we noted in flower the little known *O. Uro-Skinneri*, and near it a grand specimen of *Oncidium macranthum*. *Masdevallias* of the showy type are grown largely, and among them the canary yellow *M. Davisi*, which does not appear to have been widely distributed, as it is seldom met with, yet on account of its totally distinct colour it is worth a place. A variety of *M. Harryana* named *versicolor* is one of the most beautiful we have yet seen and quite different from any. The flowers are large and of a rich violet purple, mottled and clouded with two or three deeper shades—a combination extremely attractive. We just mentioned that *Dendrobium infundibulum* was grown with the cool Orchids. In this house there were several plants in flower, some with as many as from eight to a dozen flowers on the stem, a convincing proof that the treatment suits them. The plants are mostly in suspended baskets, and the long stems hanging over the sides terminated by the pure ivory-white flowers are extremely lovely.

Among the warmer house Orchids some grand plants of *Coelogyne cristata*, both the Chatsworth and the Trentham varieties, were covered with new growths, which promise an abundant yield of lovely blossoms so indispensable in spring for cutting from. The finer kinds of *Phalenopsis* are grown largely; a numerous batch of *P. grandiflora*, not long imported, will soon form fine plants. Of warm house Dendrobies, *D. Wardianum*, *nobile*, *Pierardi*, *heterocarpum*, and *chrysanthum*, are grown numerous, and so finely with long stout bulbs which can only be obtained by those who understand thoroughly their culture. I was surprised to see such a grand lot of what I thought was an extremely scarce plant at present, that is, *D. Ainsworthi*, the lovely hybrid between *D. nobile* and *D. heterocarpum*. Here it may be seen with bulbs well nigh 3 ft. long and stout in proportion. Mr. Stevens considers *D. Ainsworthi* distinct from *D. splendidissimum*. Other houses filled with newly imported plants of *Odontoglossum crispum* explain how the fine Trentham varieties originate.

FRUIT.—The houses and appliances devoted to the culture of both hardy and tender fruits are all on such an extensive scale, that it is not surprising that the production of first-rate fruit at Trentham has become proverbial among gardeners. One reason why the houses are so extensive is that but few fruits will perfect themselves in the open-air in that climate; hence houses for Peaches, Nectarines, Figs, Plums, Cherries, and even Apples are provided. The glass cases to the walls, originated by Mr. Fleming when gardener at Trentham, are a prominent feature in the kitchen garden, and very serviceable structures they are, besides being a more desirable embellishment to the garden than the uncovered walls. They are virtually narrow houses, having vertical front sashes and almost flat roofs. They vary from



200 yds to 50 yds. in length, and their interior walls are covered with Vines, Peach, Nectarine, Plum, Fig, Cherry, and Apricot trees, and some are devoted to Tomatoes, which are grown on a wholesale scale, and ripe fruits are obtained throughout the year. In passing through these wall houses at this season an idea may be had of the enormous crops of fruit grown. Peaches will still be gathered for some time to come. Plums are in perfection, and very fine they are this year, especially a tree of Transparent Gage, one of the finest of all Plums and a favourite sort here. In one of the houses were pot trees of Calville Blanche Apple with ripe fruits. It is only by thus treating it that this fine Apple can be had in perfection early, on account of the unfavourable climate. In speaking of the Tomatoes we had almost omitted to make special mention of a new kind which has originated in these gardens; it is called the Trentham Fillbasket, a hybrid between the Criterion and Trophy. The fruits are large, of

from Zululand; it resembles the Abyssinian *M. Ensete*, but is distinct in many respects. It will not be surprising if it eventually turns out to be a new and distinct species.

THE VINERIES, of course, constitute the great bulk of the glass ranges, and it may be needless to add that Grapes are produced in great abundance and of unsurpassable quality, and, what is more, they are produced the whole year round, the last of the Lady Downes and Muscats in March being succeeded by new Black Hamburgs from the earliest houses. Vinery after Vinery is passed through, their contents presenting a varied series of aspects; some, from which the early crops have been cut, are being prepared for reforcing. Others have their crops ready for cutting, while some are only beginning to ripen, and these will constitute the latest crop for keeping purposes. The sorts grown are numerous, but those of inferior flavour are scrupulously avoided; for example, no place is given to Alicantes, fine looking Grapes though

cially as regards the heating and ventilating, the roofs being of such a wide angle and the ridges with the ventilators placed on the ridge plate obstruct very considerably the circulation of the air, so rendering them difficult to regulate. Some of the more recently built houses are span-roofed, and are excellent in design and construction, and admirably fitted for the successful management of the plants they contain. The whole of the glass ranges at Trentham are heated, as may be supposed, by the boiler, invented by Mr. Stevens, now so largely known as the Trentham. It is no doubt a most efficient and powerful boiler, and one that is calculated to meet every requirement of hothouse heating, and above all is not hampered by the complications that render so many designs so objectionable. The plan here adopted of setting the boilers in duplicate is one that ought to be practised in large establishments, as by this means there is also a safe-guard against the disastrous results accruing from a break-down in sharp weather.

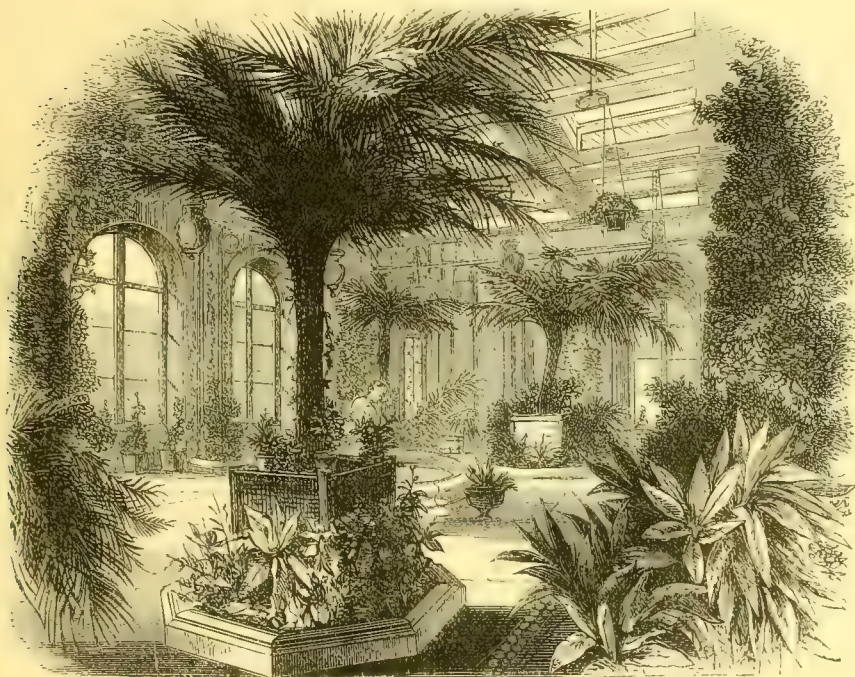
The kitchen garden consists of about five acres, though its extent is not so apparent at first sight on account of the walls which intersect it. It is needless to say that this department is in as high keeping as the rest of the place, and the demand upon its resources being great it is stocked to its fullest extent. A distinctive feature in this part is the long lines of arch Pear trees, which afford both shade and ornament, and are a source of good crops of fruit withal; but besides these there are excellent pyramidal-trained Pears, a system which is practised largely. Some of these are this year bearing enormous crops, while others are much below average. It is worthy of remark that the heaviest cropper on the pyramids this year is Marie Louise, which in some districts fails even against a wall. Another little feature in the kitchen garden is that some of the walks are edged with the Alpine Thrift (*Armeria alpina*), which is a capital substitute for Box, and gives less trouble, or not any even, and for a good length of time is bright with its deep rosy heads of flowers.

WILLIAM GOLDRING.

## THE FRUIT GARDEN.

### OUT-DOOR GRAPES.

I THINK it may be safely said that there is no other fruit tree with which a wall with a favourable aspect (south or south-east) can be so soon clothed as with a Vine, and none are so ornamental nor so easily managed. On gable ends, cottages, and other buildings with southern aspects, and favourably situated, the Peach, the Apricot, the Plum and the Cherry are sometimes seen, but they are very seldom satisfactory. Possibly the next best fruit tree to the Grape Vine, and also a really useful one, is the Pear, provided a suitable variety is selected. But under the most favourable conditions, the Pear tree is much less rapid in its development than the Vine. The latter, however, when grown upon walls, even in favourable situations, is generally allowed to run wild, and its shoots become much too crowded, consequently ripe fruit under such circumstances is not to be expected. When the shortness and the uncertain character of the seasons are considered, it is evident that no superfluous growth should be allowed; on the contrary, every encouragement should be given to the shoots expected to ripen fruit, as well as to the young growth which is expected to do so the following season. There are two systems, either of which may be successfully pursued in the training of the Grape Vine in the open air, viz., the spurring and the long rod systems.



Trentham; in private conservatory

handsome shape, and hang in long clusters in great profusion, surpassing anything we had hitherto seen. All the other, or at least the best of the other, kinds are grown, so that a comparison with the new sort may be readily made. In some of the glass cases there is nothing but Tomatoes, and the crops that they yield is astonishing, as there is so much space covered by the plants, in some instances 9 ft. or 10 ft. high.

The culture of Pine-apples is, as in many other large gardens, almost discontinued, and the houses once devoted to them is turned to more remunerative crops. This circumstance is not remarkable considering the quantities of fine foreign fruit that come to Covent Garden Market. Certainly many hold that a Pine-apple of full flavour to be eaten in this country must be grown here, but for fine appearance there is little left to desire in the foreign fruit. Plantains are still grown on an extensive scale, and one of the spacious houses devoted to them contains some fine fruits. In one of the stoves is a remarkably distinct *Musa*, lately sent

they are when well done; and the same may be said of several other kinds met with in most gardens. Of the best sorts enormous quantities are grown, Alexandria Muscats in particular, while Black Hamburgs, Lady Downes, Muscat Hamburgs, Mrs. Pince, and West's St. Peters, and Foster's Seedling make up the bulk of the other houses, besides that noble Grape the Duke of Buccleuch, which is now gaining so much favour; it has here a whole section of the glass wall cases to itself as well as being distributed about in other houses. In one of the houses were some highly-coloured Golden Queen and Golden Champion, the former better in colour than we have ever seen it.

It was interesting to observe what a diversity there exists in these gardens with regard to the construction of the houses; the wall houses we have mentioned are totally distinct from any other. Of the vineries, some are of the ordinary lean-to description, while some have an almost flat roof on the ridge and furrow plan similar to the large conservatory here. These latter, Mr. Stevens says, are most unmanageable, espe-



On high walls or on the ends of buildings of any kind having the desired aspect, the spurring system may in all respects be considered as the best and least troublesome, and the rods may either be trained vertically or horizontally; by the first-named method the wall or space to be covered will be soonest accomplished. And the young shoots or rods should be secured to the walls by nailing, or by being tied to studs fixed in them. The rods should be trained as straight as possible, and in favourable seasons Vines will ripen shoots at least 6 ft. or 8 ft. long, and by this means the walls will soon become covered. The spurs or young shoots showing bunches should be stopped at the joint nearest the bunch, and only one bunch should be allowed to the spur. And the spur with its bunch may either be allowed to grow out from the surface of the wall, or, what is much better, may be neatly tied back to the rod, and by this means the fruit will derive more benefit from the heat radiated from the wall, and the whole will at the same time have a neater appearance. Where a wall is, say, only 6 ft. or 8 ft. high, the long rod system, as it is called, may be more applicable, and the bearing rods should be trained at a distance of, say, 18 in. from each other, while a young rod should each season be trained up between each pair of bearing rods, and these must, of course, be cut out as soon as the fruit has been gathered from them, in order to give every possible encouragement to those which are expected to bear fruit during the next season.

There are many low buildings or outhouses whose roofs may be readily covered with the Grape Vine, and with even more probability of its bringing its fruit to maturity than when it is trained to a south wall. The amount of solar heat which is reflected from a slate, or even a tile roof, is something very considerable, and could hardly fail in having a beneficial effect in hastening the ripening of such fruit as that of the Grape Vine. There are also many buildings whose roofs could be readily rendered accessible for this purpose. I was more than ever impressed with the feasibility of ripening Grapes in the open air on this method by observing some weeks since in a cottage garden a Vine which was growing perfectly wild upon the roof of a low building of some kind, and although it had evidently had no training or attention, it was nevertheless showing abundance of bunches, which were very much in advance of those of another Vine of the same variety, viz., Royal Muscadine, growing near it, and roughly trained to a south wall. I am therefore quite inclined to think that if the roofs of such buildings had wires stretched over them, and at a proper distance from the surface, say not less than 1 ft. or 15 in., and the rods trained to such wires, with a space between each rod of not less than 15 in. or 18 in., such varieties of the Grape Vine as the Muscadine, Ferdinand de Lesseps, Esperione, Miller's Burgundy, &c., might with necessary attention be ripened in most parts of the south and south-east of England in even such seasons as we have lately experienced; when they become better, as it is to be hoped they will do, it will then be so much the better for out-of-door Grapes, as well as for many other things.

P. GRIEVE.

#### FIBROUS ROOTS.

If we lift the roots of a rampant growing tree and shorten them back with a sharp knife, we encourage the production of fibrous roots. It is true these small roots will in course of time extend, and if they take a downward direction they, too, may become naked and fibreless, and again require lifting and pruning. A tree with its roots near the surface, say within a foot or so, will always make

more fibres than if they are deeper. The tree's necessities compel a greater root-production when growing near the surface, and the reason is plain enough, for the great want, the chief support of all plant life is moisture. Water forms the principal bulk of all living things, and plants, like primæval man, will make short cuts if not prevented to obtain their ends. This accounts for the natural tendency that roots have to descend into the earth in search of water. It would take four times as many roots to supply the plant's necessities if they remained near the surface than if they were allowed an unlimited downward run. Trees like men are always stronger and healthier when they have plenty of work to do, and the activity of the roots of all surface-rooting plants leads to active circulation in their several parts. A tree in such an active condition always has plenty of fibrous roots, and never makes gross wood, consequently is fruitful and long-lived.

In the case of a young tree full of energy it is good for the roots that are travelling swiftly along to find some obstruction in their path. The impediment whether it be a large stone or something of a less impervious nature, arrests their course, and generally in their efforts to get past the obstacle other roots are thrown out, and a more extended, more scattered root action begins, and the long naked root that was hurrying on downwards has its course changed to the manifest advantage of the tree or plant. It is not well to remove all stones from the soil; they were intended by Nature to serve a purpose. In the case of borders devoted to fruit trees, especially, it is a mistake to remove them; indeed, stones or pieces of old plaster or the debris from old buildings, mixed with the lime such debris contains, may always with advantage be placed near the roots of stone fruits. And lime is some form is indispensable; therefore, if it is absent from the natural soil, or not present in sufficient quantity, lime must be given or the trees cannot long thrive. This may account for the weakly condition of Apricots and other kinds of stone fruits in some soils. So much lime is used in building up the stones containing the seeds and in other ways that in a non-calcareous soil stone fruits will not long succeed.

Another matter that in the case of stone fruits is important is firmness of root-run; in a loose soil the roots rush away too fast to form fibres. But by a firm soil, I do not mean a soil unmoved, but rather a border that has been well and firmly constructed, but yet retains sufficient elasticity and porosity for steady healthy root-action. Very rapid growth is not in itself a thing to be desired. Some of the healthiest and most fertile Apricots I have known were growing against a farmhouse and the farm buildings adjoining, with the roots under a hard gravel path. There was no trouble about branches dying off in some unaccountable manner, as is so common on garden walls. I have often found trees that have made rapid growth in youth more subject to branch dying in after life than others that had made regular steady progress from the first. The health, the fertility, and the whole character of the tree depend upon the abundance and fibrous nature of the roots.

When we consider that the spongioles, or soft white tips at the ends of the roots, are the chief instruments used by the tree or plant for selecting and extracting its food, so far at least as it is taken from the soil, the importance of numbers becomes manifest, and the necessity for surface-rooting is made clear if the tree is to be healthy and fruitful. Roots that have penetrated a deep moist soil do not fibre well, because there is no necessity for it, as they can supply the demand made upon them without making any severe effort. If a tree be planted on the top of a rock, whether placed there by the hand of man or some other agency, it will do its best to gain a firm footing; every crevice will be sought for and explored. Obstacles only seem to call forth increased effort; fibres multiply and start away in all directions; and in the struggle for existence nine times out of ten the plant wins. Difficulties in Nature are only incentives to exertion. I have often thought, when looking at some

Ash or Oak that had won a victory by establishing itself in some cleft of rock on the mountain side, what a lesson it furnishes of the value of perseverance. In fruit growing, especially in the case of those fruits not indigenous to the soil, fibrous roots are a prime necessity; they are, in fact, everything. As I have already pointed out, in Nature an even balance is always held. When the roots are few and long the branches correspond, but when they are many and fibrous the wood is short-jointed and firm, the leaves are medium sized rather than large, but firm and leathery in texture, and the whole appearance denotes stubborn rude health rather than luxuriance—regular steady useful work rather than extraordinary development. E. H.

#### SOME FARM FRUIT AND ITS USE.

THE earliest and prettiest of good Pears, Doyenné d'Été, has been quite first-rate. The trees were very badly cut by the winter of 1879-80—indeed, the spring frosts of 1879 were very destructive to this variety, and they are even now disfigured by many dead branches. Still the living shoots have carried good crops of high-coloured, high-flavoured fruit, for which—now that they are finished—none of the succeeding varieties are accepted as a sufficient substitute. Doyenné d'Été was drink as well as meat; a basketful of the smaller specimens (left when the best had been picked out for market) was universally accepted in the harvest field by the men, on one of the few fine days which began the mowing, as being “a sight better than any beer.” If any English nurseryman could raise a seedling from Doyenné d'Été crossed with a hardier sort—such, say, as the Swarmer—so as to gain constitution without losing flavour or earliness, he would deserve well of all farmers. The trees would thrive in hedgerows and refresh the harvest men. Doyenné d'Été and Wheat seem to ripen together. Mr. Rivers's Pear (St. Swithin) is not so early, but it is a hardier Pear, and likely to be a useful market sort. Doyenné d'Été was fit to use July 30, and at its best from August 6—16; St. Swithin was barely fit to gather August 24. Souvenir du Congrès is not yet ready, nor is that excellent American introduction, Clapp's Favourite. If this proves to be as good as it is handsome, it will be a real Pear for the million to eat and for the farmer to grow. Not a twig of this kind has perished from winter, nor has any on that excellent Pear, Madame Treve. One of the Royal Commissioners who visited America came back and made a jest of the advisers who tell English farmers to grow fruit “You can't compete with the orchards of America,” he said. If Doyenné d'Été (and the other choice Pears) could be grown in America handsomer than they were here in 1881, they could not be brought over; for they will not keep more than a few days after they are gathered; and, moreover, they are so very tender in flesh that the smallest jolt disfigures them. English growers need not fear any competition in choice early Pears, nor need they fear, if good, that the fruit will want customers. To give an idea of the quantity which might be thrown on the market in warm weather, two small boys, not in their teens, had free access to the trees, and it is computed that, at a low estimate, for a fortnight, they ate (without making themselves ill) fully a quarter of a peck per diem between them. None of the new Apples are so early as the old Red Margaret. This, on young trees, has this year been very handsome. The White Jeanette has been small, but no other Apple comes into consumption by muncihers so soon as these two. Ecklinville Seedling has borne, as usual, heavy crops of good fruit. It is quite first-rate for cooking and market, but



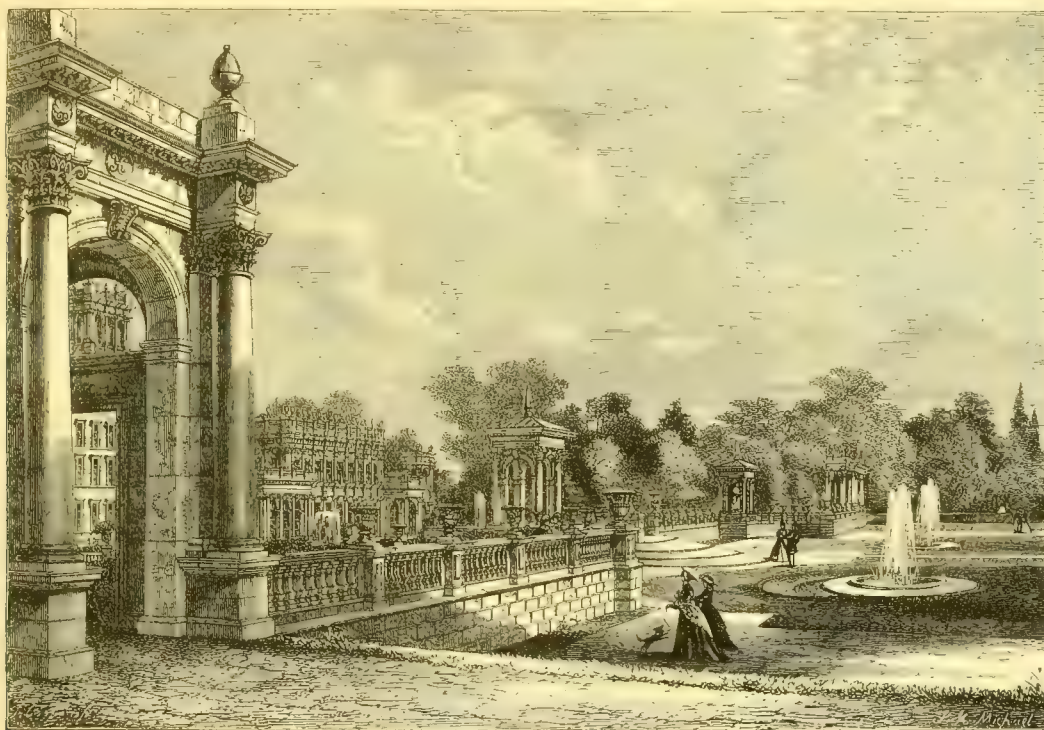
it is not an eating Apple. But the Irish Peach is, and is earlier ready. This is quite A 1. No other Apples here have all been stripped from the trees, although some of the heavy load, which is breaking down Lord Suffield, has been removed to save the boughs. The Worcester Pearmain (sent out by Mr. R. Smith, of Worcester) is a magnificent Apple, and, from its upright growth, is well adapted to hedgerow culture. It is not yet ripe, nor is the Apple sent out as Red Hawthornden. The New or Winter Hawthornden is very handsome this year, as is Cellini and Cox's Pomona; but all these are still immature. The only Plums which have ripened as yet are Rivers's Early Prolific and Oulin's Golden Gage. The birds have taken a liking to the latter (small blame to their tastes) and the crop has been much disfigured; but it is quite a Plum to plant everywhere, for it is very good.

ripen their wood thoroughly and early, and become fit for lifting in August or early in September. The risk of losing a crop the first year is then avoided, and trees that are subjected to annual or biennial lifting invariably set and swell off fine fruit. Late houses now ripening off crops must have a liberal supply of air to prevent damp, the greatest enemy we have hitherto had to contend with in the setting and preservation of Peaches in unheated houses. Fortunately, experience and cheap fuel have swept away the false economy, and unheated Peach and orchard houses are now rare exceptions to the general rule.

**Vines.**—The weather for some time past having been cold, wet, and sunless, late Grapes will require regular assistance with gentle fire-heat. Water must be more sparingly used, particularly towards the close of the day, and the ventilators must be left constantly open until the fruit is quite ripe and coloured up to the foot-stalks. Vines in external borders exposed to the heavy falls of rain we have lately experienced

and it is almost useless to say this is one of the very worst forms of mismanagement, as every effort should be directed to the concentration of matter in the main beds, from which next season's crop is to be obtained. Vines in early houses, also the first batch of pot vines, may now be pruned and cleansed ready for starting in November. If painting, repairs, or other work be considered necessary, the intervening period of rest will be found the most convenient time for getting everything put in working order. See that the usual quantity of new turf is secured before the end of the month. If possible, cart it when in a dry state, and store it in long narrow stacks on a dry bottom out of doors where it can be thatched or otherwise protected from wet.

**Figs.**—Divest early pot trees of all fruit, and allow the points of the shoots to have full exposure to warmth and light. If fine warm weather continues through September the roof-lights may be partially or entirely removed; but should it be wet and cold, a free circulation of air with over-



Trentham : principal front and Italian garden (see p. 265).

The foregoing notes have reference to a very exposed farm on a brick earth, and situate about ten miles from the sea in Norfolk.—A. P., in *Field*.

#### SEASONABLE WORK (FRUIT).

**Peaches.**—Where it is intended to start the early house in November the trees should now be resting with all the air that can be admitted. In years gone by Peach trees were benefited by exposure for a few weeks through the autumn, but seasons of late have been so cold and wet and unfavourable to the ripening of the wood, that we have found it advisable to keep the sashes on the house, and ventilate from day to day in accordance with the state of the weather. If lifting or other alterations are contemplated, the compost, a strong calcareous loam, burnt earth, and lime rubble, should be in readiness for use as soon as the trees intended for taking in are ready for removal. For filling up blanks in the earliest house, trees should be grown under glass, where they can

will most likely break into a fresh growth of vigorous laterals, but these must be kept in check by the regular stopping of all the strongest before they reach the glass, and all side growths may be removed close to the main leaves from young canes intended for next year's fruiting. White Grapes, if we may judge from the fine bunches shown at Manchester last week, are not generally well coloured, and as these cannot have too much light, a steady system of stopping so as to have an even spread of healthy foliage all over the house must be persevered in. When thoroughly ripe and well finished a lower temperature may be indulged in, but fire-heat, so long as the leaves keep the sap in motion, will be needed where Muscats and other tender-skinned kinds are expected to hang well into the winter. Midseason Vines from which the fruit has been cut should be divested of all lateral growths quite down to the main buds. The spur shoots may also be shortened, and a circulation of any warm air kept up until the foliage is ripe. It sometimes happens that the removal of the last bunch from a vinery is followed by a period of wild neglected growth,

head protection is recommended. Trees in late houses must be kept drier at the root with less atmospheric moisture, in order to encourage a state of complete rest. A little fire heat when the weather is unfavourable and through cold nights will assist the ripening of the late fruit and wood, the points of which generally set an abundance of embryo Figs when allowed to grow well up to the glass. We have again tested Osborn's Prolific, and can strongly recommend it for any form of culture under glass.

**Melons.**—Late Melons should now be set and swelling away freely. Maintain a night temperature of 70°, cover up with mats to economise fire, and see that bottom heat does not fall much below 90°. Keep the laterals closely stopped, but preserve all the old leaves from the base of the stem upwards, and elevate the fruit well up to warmth and light. As days decrease in length atmospheric moisture must be reduced, and direct syringing, providing the foliage can be kept clean, may be discontinued. Watch closely for canker, apply the usual remedy, quick-lime or charcoal, and if possible prevent its appearance by



maintaining a circulation of dry warm air over the surface of the bed.

**Cucumbers.**—Another good sowing of Telegraph made now will produce plants from which fruit may be cut from Christmas onwards—a period through which Cucumbers are not always plentiful. Assuming that low compact but light pits are at command, thoroughly clean and properly heated, one of the main points in winter culture is the production of a firm, steady growth from the seed pot up to the time the fruit is fit to cut, and as dry fire heat is sure to bring forward a colony of insects, this element should be dispensed with as much as possible by growing all the plants in pots plunged in a bottom heat of 90°, which may be obtained from fermenting Oak leaves. The pots should be well drained, and a light rich soil, consisting of turf, peat, and old lime rubble, will grow Cucumbers quite strong enough for the present.

**Strawberries in pots.**—These plants always make rapid growth through the month of September. All at once the pots become full of roots, and the crowns develop rapidly, so much so that there exists sometimes a doubt as to whether they will ripen properly. Where gentle stimulants have been used they must be discontinued. Watering must be more carefully preformed early in the day in order to admit of the balls and surrounding surfaces becoming dry before nightfall. As the plants increase in size they will require more room; they must also be kept free from weeds and runners, and to prevent the ingress of worms the pots must be elevated on dwarf walls, planks, or shutters. If not already done, make good plantings of runners in well prepared ground along the margins of walks for giving next year supplies of plants for potting and planting. When planted in single lines for giving stock they need not be more than 1 ft. apart, and earliness, being an important item, the site selected should be a warm one, and in near proximity to a good supply of water.

Eastnor Castle.

W. COLEMAN.

**Damsons.**—Will some of the readers of THE GARDEN kindly furnish me with the names of the localities in which Damsons are most grown—more especially in the counties near to and surrounding Cheshire?—CONSTANT SUBSCRIBER.

**Diseased Vine leaves.**—My Vines did badly last year. I examined the roots, and found them deep in the border. I removed some of the soil, and left the roots nearer the surface. There then came a change for the better, but the fruit commenced to wither. What is left is ripening, but still they are anything but good. J. M. [The leaves have been scorched, and if those sent are a fair specimen of the whole, that will account for the failure of the fruit, which is what is termed shakled, a disease aggravated in your case by the roots being so deep in the soil, that neither sun nor air can have any effect on them. The remedy is simple. Keep them near the surface by means of top dressings of good loam and manure, and in the growing season ventilate early in the morning, in order that the condensed moisture of the previous night may have disappeared before the sun shines full on the foliage.—W. H.]

**Vine leaves flagging.** In March last I planted two new vineries, the borders of which were composed of soil from a light land pasture with about one-third from a heavy land pasture, mixed with bones, blood, and about one bushel of sprats to a load of soil. The border was well drained with brick rubbish. The vines have grown well—the length of the rafter—and are making laterals and tendrils, but the leaves next the eye on the base of the shoots are some of them flagging when the house is opened and the sun is shining on them. When closed at night, they get crisp and firm, but they flag every day, and after a few days turn brown and fall off. They began to show these symptoms about the second week in August. I have pot vines in the same houses with the bottoms out of the pots and the roots working in the same border fruiting well and showing no symptoms of flagging. When I first noticed the flagging the inside border was rather dry. Do you think that would cause it?—J. E. [The flagging of the leaves in the manner indicated is a very common occurrence in the case of young vigorous growing vines, and never proves serious. It may be prevented by allowing a profusion of lateral growths the entire length of the vine. The roots sent are in a very healthy condition.—W. H.]

**Arundo conspicua.**—This beautiful Grass, which produces handsome wavy white plumes, can hardly be said to be quite hardy, as I regret to say it has succumbed to the severity of last winter's frost, when the temperature fell on several occasions to 3° below zero.—J. T. POE.

## LABELS AND LABELLING AT KEW.

THE question of labels for trees or shrubs is one that never ceases to concern the horticultural world, and at the present time there are prizes being offered, as if no such thing as a simple and satisfactory label were already in use. To any one who really takes the trouble to look into it, the question is not difficult to settle without any further invention. Still, no doubt a great number of labels will be invented which, as usual, will probably prove too clever to be useful. In considering the question of labels in the Royal Gardens, we may perhaps throw some light on those fitted for all other places, especially wherever they have choice trees or shrubs. For a good many years the labels themselves at Kew have been of a good form and of cast iron, the only material of which a label to stick in the ground in a botanic garden should be made. The T-shaped label, which allows the writing to be read horizontally, the only way in which a label in a botanic garden should ever be written, is in use. But lately they have adopted a Teak or other very large wooden label at Kew, which is written vertically, so that one has to strain one's neck to read it. These labels all lean their heads to the reader at a pretty sharp angle, so that it is really a trouble to read the names of the shrubs where the wooden labels are thus leant forward. The reason seems to be to preserve the face from the deposits of birds; but why, in avoiding such difficulties, make labels almost unreadable? These upright wooden labels are like headstones in cemeteries, only more showy in proportion to their size, because they are painted with a hard glittering white. There was no need for the heavy wooden labels at all at Kew, because the old T label adopted there answered every purpose. Probably the wooden labels cost more; at least, we ourselves have obtained the cast-iron T labels for about 14s. a hundredweight through a London tradesman, and they could be got for less at a foundry. The cost of these best of labels is nothing to that of the clever fancy labels, which are glazed, and have the letters printed on them, which sometimes cost several shillings a-piece, and which do not last so well as the cast-iron labels when properly written.

The great advantage of the cast-iron labels in a botanic garden is that they can be used again and again, and for generations. The collections in a botanic garden are always in a state of change, the nomenclature is itself in a state of change, public taste changes, severe winters kill hundreds of shrubs, plants are lost from other causes, and there is a perpetual dying out and coming in of plants, shrubs, and trees. Therefore, for all labelling in a botanic or other important garden it is an essential condition that the label should be usable again. If from any cause a few hundred plants in a botanic garden go out of cultivation in the course of a year, the person in charge of the nomenclature should be able to use these labels again. If he has terra cotta or other printed labels or stamped labels, or perforated labels, he cannot do this; therefore his labels become so much costly rubbish. The cast iron labels we allude to have only to be thrown into a tub, and the paint cleaned off them, and can be used again. A suitable form of these cast-iron labels is in use at Kew, except that the smaller size is a little too narrow across the head, and the larger one too broad in proportion to their relative lengths. A better form still may be seen in Hyde Park of the same label—that is to say, a better-proportioned one.

The only mistake made about the cast-iron labels at Kew is in painting them all white, and with black letters, which makes them conspicuous in the distance. White gives a garish and

hard effect, always disagreeable, especially in a garden where a great many must be used. The true way is to paint them black or a dark brown two coats of good black over one of red lead—and the lettering of white lead. Painted in this way the labels are inconspicuous, and never form hard glaring spots in the distance; while on approaching the tree or shrub or plant, the white lettering on the black or brown ground is more pleasantly legible than in any other way.

A label adopted for the trees at Kew is, we think, the best and simplest of all. It is a bit of zinc or cast-iron nailed to the trunk of the tree, and therefore free from the disturbance to which the many labels that must be inserted in the ground are liable. When made of zinc or tin this oblong strip label may be conveniently protected from the birds, and also from the weather, by turning over at a right angle half an inch of its upper edge. We have known such labels fixed to the tree by a copper nail, and to be perfectly clear after twenty years' use! We have also known cast-iron labels, as above described, stuck within a few inches of the ground, unprotected in any way, liable to be knocked about by tools, and yet lasting perfectly legible for a space of eighteen years! Under the same conditions most kinds of so-called permanent labels, many of which are brittle, or into which decay enters in some form, were obliterated or lost before that time. Many may remember a costly label with printed letters underneath glass, which was a good deal used for choice specimen evergreens some dozen years ago. These labels, though so apparently well made, were liable, after some years' exposure, to decay, and the addition of glass made them of doubtful endurance wherever tools were in use, not to speak of the action of frost. To no such danger is the strong cast-iron label exposed.

The labels we described as having lasted so long, after being lettered and thoroughly dried, received a good coat of copal varnish, which no doubt added to their endurance. There is sometimes objection made to these labels because of the trouble of writing them; but in the botanic garden, where the work must be done in some way, this is really no difficulty. Any intelligent man or boy could very soon acquire the art of writing "print" fashion. By putting a card before an intelligent youth of Roman letters and capitals of about the size we wanted, we never failed to teach him to letter well in the course of a fortnight's practice. A week more made him master of it. All labels for trees and other important subjects in any good garden should be painted in clear Roman letters. The letters should be outlined first, and then filled in with thickish white lead, and placed flat in a dry room till thoroughly dried, when they receive their coat of varnish. Such labels as we speak of are intended for the more permanent and enduring ornaments of a garden—the trees and shrubs that remain with us always; and that attract attention most. For Roses, fruit trees, and smaller subjects, a different class of label is called for, of wood, or zinc, or lead. Here, again, the desirability of having a label that one can use again makes us rather go against all stamped or permanently written labels, at least such as cannot be readily effaced. Inasmuch as races and collections of flowers of many kinds are incessantly changing in gardens, what is so much asked for—a permanent label—is really always a wasteful one; only in the case of fruit trees would we adopt the stamped label, and even then the planted zinc or tin label, such as that alluded to above for specimen lawn trees, would answer all purposes. The main thing in favour of the stamped label is that it saves the labour of writing, which is really very little to those who care about their plants.











In many cases at Kew the common trees of Europe and America, every one of which has a well-established English name, have only long Latin names and authorities printed or the labels. Now, we admit that, in many cases in a botanic garden, it is difficult to find an English name that is happy or likely to be accepted; but for by far the greater number of the stately or useful trees or handsome shrubs of Europe and America there is an English name to be found, which should receive precedence. Across the head of every horizontal label at Kew Gardens the accepted English name of the tree or shrub should be legibly written. We do not object in any way to two or three long Latin names and a botanical authority, also in Latin, being placed on a label for one of the forms of our common Oak; only they should be preceded by its English name. This seems the more essential when we consider the enormous area over which the English language is now the common tongue. Apart from our British and European trees, with their associations and uses, there are a number of beautiful and useful trees that come to us from America, most of which have their accepted English names given by the settlers, and these names are often used here. Going away from well-known things, such as the Oak and Hornbeam, the Hickory nut, and many other shrubs and trees with established English names, with formidable Latin inscriptions only, we next come to a number of exotic plants, which have no well-recognised English name, and yet here we think it would be wise in every case to try and have an English name, never excluding the latter one, which, however, ought to follow the English one, though not less clearly written. A botanist who also took an interest in his own language could, even in the most puzzling cases, find an English name that would serve, either the translation of the Latin one, or, still better, a name derived from some clearly evident or striking feature of the habit, flowers, foliage, fruit, uses, or properties of the plant or tree.

In some cases at Kew we saw that the English name had been given, and hope the practice is a growing one, until every tree and plant in the garden has its English name.—*Field.*

— I enclose a label which I have got made for my Roses, &c. It is to be fixed to the plant with lead wire, and can be made for twopence each. When used it can be easily seen, and the name can be written with metallic ink; a little vanishing should be used to prevent the weather destroying the name.—B. H. [The specimen sent is T-shaped, about 3 in. wide in the head, and 4 in. long, and 1 in. broad in the shank. In its present form it would be better suited for pots than suspended.]

**A new name for an old plant.**—Funkia is not a pretty name; the plants so-called are pretty and are becoming more popular yearly. No doubt Mr. H. Funk, a German botanist, was deserving of the honour of having his name applied to a beautiful genus, yet let it be kept for botanical uses, and let us have another name for every day garden wear. So thought the editor of THE GARDEN when he offered a prize for a good English name for Funkia. In some books it is called Day Lily, but there are other plants to which that name belongs. The prize was awarded to the name Plantain Lily, which was suggested by Mr. Edwin Jackson, Llandegai, near Bangor, North Wales. The name is a very happy hit, as the leaves of the Funkia at once suggest large Plantain leaves. We quite agree with Mr. Robinson when he writes: "If plants are not worthy of general cultivation, they may be called by any name. But when we deal with plants which we all

admire and wish to grow, then if the Latin name is not a happy and a manageable one, an English name is a necessity." We are glad to get rid of Funkia, and welcome Plantain Lily, and on behalf of all lovers of flowers thank Mr. Robinson, the editor, and Mr. Jackson.—*American Agriculturist.*

## THE ROSE GARDEN.

### PLANTING AND TRANSPLANTING ROSES.

ON this subject various opinions have been advanced, but the majority of cultivators will agree that the end of October and the beginning of November is the time when transplanting may be done with the best results. I have invariably found that November-planted Roses suffer less and do better than those moved at any other period; they make a little growth at the root before spring sets in, and spring-planted ones never do that very freely. All Roses are the better for being transplanted every three or four years. As in the case of other trees and bushes, we want healthy fibrous roots for them, and these can only be secured by transplanting. When left for a number of years without being moved, long roots are formed with few fibres, the top growth is "scraggy," and the flowers never gain their original colour and size. I have shifted old Roses from poor soil which were next to useless, but which, after being in good soil for a year or two, became as fine as the youngest and best cared-for plants. Still, I do not recommend very old, worn-out Roses to be planted in the best situations, or in places where young plants would be more satisfactory. Places could be found for the old Roses in nooks in the pleasure grounds about the margins of shrub beds. Old Roses, when planted in good soil, and not cut in too much, have a good effect in such places. With the view of taking advantage of the best time to plant, let all Rose plants and beds be looked over forthwith; where it is thought plants are on the decline, let them have the benefit of transplanting. If they are so far gone as not to be worth a good place, give them an inferior one; where the stock is likely to be short, order at once. Do not be over anxious to get the very newest kinds in quantity, if plenty of good flowers must be grown; well-proved varieties must be depended on for this.

**How to plant** is of as much importance as when to plant. All must be done with care and forethought—care not to damage the plants, and forethought in supplying them with healthy good material at the root to keep them for a few years. Heavy soil suits Roses best. With plenty of manure a sandy soil may produce a few good blooms the first season, but that will be about all; consequently, sandy soil should be as little used as possible. Very old worn-out soil does not grow them well either, and where the beds in which they are to be planted is of this, a good deal of heavy loam should be added. Where Rose blooms of the finest "show" form are wanted, all the old soil should be taken out, and the bed filled up wholly with new loam. In all cases the new soil should be got in, and the beds thoroughly prepared before planting. When the plants have to be put back in the same bed, they should be lifted out carefully and laid in stock until the bed is ready for them. Allowing them to become dry at the root through being out of the ground is destructive. The best way is to put in new soil first, making the bed up with this, and digging the manure in afterwards. The soil ought to be at least 2 ft. deep, but the manure need not be put down quite this depth, as it only tends to draw the roots downwards—a bad result. If the manure is close to where the roots will be, it is in its proper place. It is generally known that Roses like manure, but when it is put in such quantities that it lies in lumps and heaps together under the surface it is injurious to them. It is only when it is well mixed through the soil that the greatest benefits are to be had from it. The poorer the soil the more manure must be given, and at all times it should be of the best quality. Half rotten straw and leaves are no good; heavy pig or cow manure

is the best. Do not crowd the plants together. Individual plants well grown are more pleasing than a crowd and confusion. From 2 ft. to 3 ft. apart is close enough for any Roses, and some of them may have more space than this.

**In planting**, make the hole big enough to let the roots in comfortably; putting them in in a bundle or one on the top of another is not the way. They ought to radiate from the centre and spread out well. Old plants with long thick fibreless roots should have them cut carefully in to 8 in. or 10 in. from the base of the stem. Deep planting should also be avoided. Let the roots be covered with the soil about 3 in. and no more. When let down a foot or more to keep the wind from blowing them away, they will neither grow nor bloom well. Make the soil fine round and over the roots; standard and dwarfs alike should be tied to a firm stake, as it is important that the roots are not moved after planting. A good coating of half-decayed manure should be placed over the surface of the beds. C.

### PROPAGATION OF OWN ROOT ROSES.

CUTTINGS put in in October are best in the case of those who are short of glass room, and who cannot devote the time and attention required by cuttings put in two months earlier. It would, however, be misleading to say that there is no difference in the results, because there is. Cuttings put in in August, and treated as I have formerly recommended, can be potted off the same autumn, and the plants comparatively well hardened and established by the following spring. Not so those put in in October; they must remain where they were first planted until the October following. I do not say that they cannot be moved in spring as soon as they show signs of new growth, as then they will have a certain number of roots; but the risk is great, and by deferring their removal until autumn a greater number of plants will be saved than if disturbed earlier.

**Cuttings under hand-lights.**—Although the cuttings may be put in the open ground and a fair proportion of the number may make plants, I have had the best results under hand-lights. I choose a warm south border. Take out the soil and run it through a fine sieve, and at the same time mix with it a good quantity of coarse sand, taking care that there is a depth of 9 in. or 10 in. of this sandy soil. I then water it and make it firm, and place the hand-lights on it, when it is ready for the reception of the cuttings. Where Roses are grown in any quantity there will be no difficulty in getting cuttings. It does not matter whether they are obtained from standards or dwarf plants, the only condition being that the growth must be fairly ripe, that is to say, soft sappy tops and late growths will not do. Any shoot whether it has produced flowers or not, may be cut up into lengths as cuttings if the wood is firm and the buds prominent. In making the cuttings, let a clean cut be made at a joint, remove two or three of the lowest leaves, and have two at the top when practicable, but it does not always happen that an otherwise suitable shoot is well furnished with leaves; in that case the cuttings may be inserted without them, but preference should be given to shoots that have leaves upon them. First plant a row all round the light, and then put in the others 3 in. apart each way until the light is full. As soon as the space is filled up give the soil a good watering, put on the light, and let it remain. If bright weather should occur directly after the cuttings are put in, shade the lights for a few days. All the attention they require is to examine them about once a week to see if they are in need of water, as the soil should be kept moist, but not wet. They will want no air all the winter, but in hard frost they will be the better if some old mats or dry litter are laid on the lights. Three or four times during the winter take a wooden rammer, such as is used at the potting bench, and ram the soil carefully between the cuttings to make it firm, as worms will be sure to work amongst them and leave holes which will let in air and prove



fatal to some of the cuttings. The month of March is soon enough to commence giving them air, which may be done first on mild days, increasing the quantity as the weather gets warmer, but it is not desirable to remove the lights altogether until the cold May winds are over. In March remove all the dead leaves and weeds from amongst the cuttings, and in summer an increased quantity of water will be necessary; under this treatment the plants obtained will be at least from 50 to 60 per cent. They must be allowed to grow in their own way all the summer. The strongest will most likely flower if the buds are not removed, which they ought to be. Twelve months from the time when the cuttings are put in the plants may be taken up and planted whenever they are required with perfect safety. If large plants are wanted they must, as a matter of course, be grown one year longer in some good soil before they are finally planted out.

**Cuttings out-of-doors.**—In the case of cuttings put in the open ground, a warm position is the first consideration, the next that the soil be somewhat sandy so as to encourage the roots to work freely, and the next that the cuttings be from 7 in. to 8 in. long to allow sufficient length to go under the surface to enable the operator to fix every cutting firmly in the soil. A good deal of the success, too, depends on the way in which the cuttings are planted after making the soil firm. The best plan is to make a cut with a spade, then let each cutting rest on a firm bottom, treading them in so firmly that a moderate pull with the hand will not remove them; when the winter has not been too severe I have got as many as 40 per cent. of plants in this way. The watering, weeding, and other attentions must be the same as recommended for cuttings put in under lights. J. C. CLARKE.

## THE GARDEN FLORA

### PLATE CCCI.—IRIS ORIENTALIS.

AMONG the beardless Irises few are in so many ways interesting as the members of the group which we may speak of under the general name of the Siberian Iris. They are all graceful plants; some of them exceedingly beautiful. They are very widely spread, ranging all over Central and Southern Europe, and a large part of Asia, from France and Spain to China and Japan. They exhibit many curious affinities with other groups of Irises. Though we believe Dean Herbert to have been right in asserting that no true *I. sibirica* is found in America, many of the American forms are nearly allied to it. Between it and the wide and variable group of *I. ensata* there are also clear ties, while in another direction we can trace many connecting links between the typical *sibirica* and the gorgeous forms of *I. Kämpferi*. In fact, so closely is *sibirica* connected with so many other forms, that if we suppose, in accordance with modern doctrines, that all the varied forms of Irises have sprung from some common ancestor, *I. sibirica* undoubtedly may be regarded as still retaining many of the features of the ancient parent.

All the members of the group have certain general characteristics. Their leaves, growing in thick tufts, are narrow and slender, not unfrequently attaining a considerable height. The stalk, which is generally tall enough to throw the flowers well above the leaves, bears at its summit two buds enclosed in a common spathe, and in most cases there is still at least another flower lower down on the stem. In all cases the stem is hollow, in fact tubular; indeed, this is considered as diagnostic of the group, though I am rather inclined to think that it cannot be entirely relied on. The falls have a broad limb and narrow claw, the standards are narrow and erect, and the styles stand up from the falls

instead of closely arching over them, so that there is free passage for insects without the anthers being disturbed. The flowers are in most cases small, but their colours are choice, and the delicate veining of the falls gives them a distinctive beauty. The capsule is obtusely triangular, and the seeds numerous and flat. The generally branching rhizome sends out dense masses of closely matted rootlets.

Though the general structure of the Iris flower is beyond question specially adapted for fertilisation by means of insects, several kinds of Irises are readily capable of self-fertilisation, and I believe that *I. sibirica* is one of these. In any case it seeds most abundantly, and the seed germinates rapidly. In most botanical gardens which I have visited the two forms of Irises which I have found supplanting rarer kinds in the Iris bed have been *Pseudacorus* and *sibirica*, the explanation being that these two forms, seeding freely, have scattered their seedlings in the places belonging to other species, and the vigorous seedlings have eventually usurped the labels originally belonging to forms which have died away.

In consequence of this energy in reproduction there exists in cultivation, besides the natural varieties, which are in themselves numerous, a large number of seedling forms. To enumerate all these would be a laborious and hardly profitable task; I will therefore limit myself to a few distinctive forms.

First of all, there are two common forms, which we may take as typical of two divisions, two forms very distinct from each other, the difference between them being greater than between many good species.

The one which we may call the typical *I. sibirica* has pale yellowish or light green, somewhat flaccid leaves, often attaining the height of 2 or even more feet, and, though always narrow, varying a good deal in breadth. The other, which is *I. sibirica acuta*, has very narrow stiff dark green leaves, hardly exceeding 1 ft. in height. There are differences also in the form and colours of the flowers, and in the characters of the capsules of these two kinds.

A third distinct kind is the handsome form known as *I. sibirica orientalis* or *sanguinea*. The leaves of this are pale green, like the typical *sibirica*, but on the whole broader and taller. The flowers are larger, of a deeper colour, with a different veining, and the limb of falls especially broad and expanding. It derives its name from the red colour of the young shoots and leaves, though so far as my experience goes this feature does not seem to be constant; at all events in most of the specimens I have seen of this plant, though they were undoubtedly truly named, the young shoots were by no means conspicuously red; whereas the bright scarlet or crimson tinge of the spathe valves was a most striking character, giving the bud a remarkable beauty, even before the flower had opened.

These three kinds are very distinct; no one can possibly fail to make them out. But when we come to look over a collection of Siberian Irises, we find a great number of additional and intermediate forms.

The typical *sibirica* varies a great deal in the size of the plant, height and breadth of the leaves, colouring, veining, and even form of the flower. There is a white form tolerably common which was described by Gawler, in *Botanical Magazine* (t. 1163), as *Iris flexuosa*. The special name was given to it on account of the stem being bent or flexuose; but this seems to be by no means a constant character of the white variety. Of the *acuta* form I have seen more than one variety, and there exist in cultivation plants intermediate in character

between *acuta* and the typical form; indeed, the kind known as *I. maritima* partakes to a certain extent of the characters of both. The ugly plant known as *I. sibirica flore-pleno* is in most cases a sport of the *acuta* form, though the type occasionally breaks out into reduplication. *I. pratensis* may be taken as a synonym of the type.

The beautiful flower figured in the plate, and known under the garden name of *Melpomene*, is, like its sister, the so-called *nigrescens*, somewhat a puzzle. It is undoubtedly a *sibirica*, and, apparently, it sprang from some member of what I have called the typical group; it may be merely a sport seedling, but I cannot help suspecting that some of its beauty is the mark left by foreign blood. In any case, it is a beautiful plant, well worthy of careful cultivation. Years ago, Sweet described under the name of *hæmatophylla* a very desirable form of *sibirica*; this has generally been considered as identical with *orientalis*, but Sweet's description as well as his figure indicate a plant differing in many respects from the more typical *orientalis*, which is common in our gardens now. If it be not a different plant then, as Maximowicz indeed affirms *orientalis*, must be capable of very wide variation.

There exists in Japan still another form known as *var. japonica*, which I have never seen, and Mr. Barr possesses a very handsome, but small-flowered form of *sibirica*, which he obtained from Japan, and which has characters as distinct as those of either of the three forms of which I spoke above. Of *I. trigonocarpa*, which Mr. Baker regards as a variety of *sibirica*, I know nothing. Lastly, I have seen at Colchester and elsewhere still other distinct varieties of *sibirica*; among them a charming dark coloured form, which the Plant and Bulb Company send out under the name of *I. graminea* of Lindley; it has, however, no relation to the true *graminea*. These, however, I must pass over. I have said enough to show how varied is the group, yet all the members of the group may with convenience be spoken of as Siberian Irises, as in so many other cases the ordinary botanical nomenclature fails us when we come to study any so-called species from a detailed, and especially from a gardening point of view.

In attempting to recommend a selection for gardening purposes I feel a difficulty, because I should be unwilling to reject any of them. *Orientalis*, with *Melpomene* and *nigrescens*, would, I imagine, naturally come first; but all the others, especially the large flowered named seedlings, vary so much in colour and general appearance, and the veining of so many of them is so characteristically beautiful, that any one who has space enough will do well to grow several varieties. They are all of them so floriferous, that even the smaller-flowered ones, by the number of their flowers become beautiful; and the dark green rigid foliage of the *acuta* variety makes the plant itself a handsome addition to a bed apart from its flowers. The only kind I cannot recommend is the *I. sibirica flore-pleno*. The Iris is certainly one of those plants which does not lend itself to reduplication.

**Culture and position.**—As the synonym *I. pratensis* indicates, the Siberian Iris is a meadow plant; it thrives best in rich, fat, damp soil, and this is, perhaps, especially the case with *orientalis* and some of the other large-flowered varieties. But if it is to flower well it must have abundance of sunshine; it will not show its real beauty in dampness begotten of shade; nor is it like *I. pseudacorus* and some other forms, absolutely devoted to it, when it becomes thoroughly established it will bear without even finching an amount of drought which would be fatal to it when newly planted; indeed, I am



inclined to think it flowers all the more freely under a moderate restraint as regards moisture. The closely-matted roots show that the soil must be rich and full of vegetable matter, but as far as my experience goes, this Iris has no special fancies, and will grow in any soil which has been made adequately good. In planting it, it will be well to secure this good ground to start with, for the plant has a very great objection to being moved. Transplantation will in most cases prevent the bloom of the succeeding summer. Moreover, its real beauty does not become apparent till the plant has grown into a good sized bush. Plant your plant, then, in thoroughly good soil, with appropriate surroundings, so that its head of flowers may be seen above dwarfed plants, standing out against still taller foliage, and then leave it alone. In a year or two, even though it flowers in May and June, when the garden is full of other beauties, you will, I think, be not dissatisfied with the Siberian Iris. F.

[Our plate was drawn from specimens supplied by the New Plant and Bulb Company, Colchester.]

## TREES AND SHRUBS.

### THE STYRAXES.

BY THE LATE GEORGE GORDON.

THE hardier kinds of *Styrax* are elegant deciduous shrubs or low trees, with alternate leaves; they are natives of Asia Minor, North America, and Japan, and somewhat tender in the climate of London, where they require to be planted against a wall, and where they will produce a profusion of their racemes of axillary white flowers, which resemble those of the Orange, but smaller. All of them amply merit a place against a wall on account of the beauty of their pure white flowers, and the great profusion in which they are produced from June to August.

***Styrax officinale*** (the Medicinal *Styrax*).—The *Officinale* *Styrax* forms a bush or small tree in its native country from 12 ft. to 15 ft. high, but under ordinary circumstances in England its height is seldom more than 4 ft. or 5 ft., and as it is somewhat tender in the climate of London, it is best trained against a south wall. It forms a deciduous bush somewhat resembling some of the *Deutzias*, but with the flowers not extending beyond the leaves. The leaves are about 2 in. long, ovate, simple, alternate, entire or serrated, bright shining green above, and clothed with short, close, rather soft hairs beneath, which give to the under-side a hairy appearance. The flowers are pure white, and produced in great abundance in simple or axillary bracteate racemes of five or six together in June and July. They resemble those of the Orange. The drupe or fruit is ovate-globose, one-celled and generally three-seeded, greenish in colour, nearly dry and ripe in October. It is a native of Syria and the Levant, and is not uncommon all over Greece and the Peloponnesus, and is naturalised in some parts of Italy, particularly about Tivoli. The finest plant of it in Britain is in the Apothecaries' Garden at Chelsea, where it has attained a height of 12 ft. against a wall, and flowers profusely every year, and ripens seed. The *Styrax officinale* merits a place in every choice collection on account of the beauty of its pure white flowers, which are produced in great profusion in June and July. It requires a rich, light sandy soil on account of its hair-like roots, and is increased by layers, cuttings, and seeds.

***Styrax lævigatum*** (the Smooth-leaved *Styrax*).—This is a deciduous, slender, smooth-branched shrub, 3 ft. or 4 ft. high; native of South Carolina and Virginia in swampy places, flowering in July and August; the leaves are oval-lanceolate, acute at both ends, rather thin in texture, on shortish footstalks, smooth on both surfaces, and irregularly short-toothed on the

edges, with the points entire; flowers axillary, twin or one-flowered and white; fruit about the size of a red Currant; greenish, and ripe in the autumn. Its synonyms are *Styrax americanum*, *glabrum*, and *leve*.

***Styrax pulverulentum*** (the Powdery *Styrax*).—This kind forms a shrub from 4 ft. to 6 ft. high; it is a native of Carolina and Virginia in woods, and flowers in July and August. The leaves are nearly stalkless, or obovate and obtuse; they are clothed with powdery tomentum beneath, and smooth above. Flowers axillary, and mostly by threes on short flower-stalks. It is sometimes named *lævigatum*.

***Styrax japonicum*** (the Japan *Styrax*).—This forms a very slender branched small shrub or tree, with the leaves smooth on the upper side, somewhat powdery beneath; the leaves, which are acute pointed, taper to the base, on short foot-stalks, rather thin in texture, nearly smooth in the adult state, but powdery on the under side when young, bright green above, pale beneath, entire or slightly and irregularly toothed on the margins, bright green on the upper surface, pallid beneath, and about the size of those of *officinale*. Flowers, white, axillary, in racemes, and produced in August; peduncles many flowered, and almost terminal.

### THE PRIVETS (LIGUSTRUM).

ONE of the most accommodating of shrubs is the common Privet, thriving as it does almost equally well in whatever situation it may be planted. Even on dry banks, where scarcely anything succeeds, it makes itself quite at home, and stands the drought well, while there are but few plants less affected by the drip from overhanging trees. As a hedge plant, too, it is in general use, and may be kept to any required size, although the Japanese *L. ovalifolium* being of quicker growth is now often employed for that purpose. Privet hedges are largely used for sheltering small and tender plants, but where so employed care should be taken to prevent the roots running into and robbing the spaces intended for the protected plants. Of late years some of the Privets have occupied prominent places as flowering shrubs, and well deserve them when in flower (and they are very floriferous); some of the species, such as *L. japonicum*, *lucidum*, and *sinense*, are really charming. The species are—

***L. CORIACEUM*** (the thick-leaved Privet).—A slow sturdy-growing plant well deserving its name, as the leaves are very leathery, almost round, and of a deep green. This is the slowest growing of the whole, and as it thrives well in confined spaces useful for town gardens.

***L. JAPONICUM***—A beautiful evergreen shrub bearing ovate leaves of a bright glossy green, from 4 in. to 5 in. long, and from 2 in. to 3 in. broad; its foliage alone would recommend it, but it also bears an abundance of pretty white flowers. This species attains a height of 10 ft. to 12 ft., and succeeds best when somewhat shaded, as the leaves then assume a darker colour, whereas when in the full glare of the sun they become yellowish. There are also several variegated varieties varying in the depth and colour of their variegation, one of them, tricolor, when grown under glass, being of a very bright colour, but scarcely vigorous enough to succeed out-of-doors.

***L. LUCIDUM*** (the Wax tree).—A very old kind, having been introduced as long ago as 1793. This species forms a large shrub of from 15 ft. to 20 ft. in height, and is of more vigorous growth than *L. japonicum*, with which it is often confounded. It may, however, be readily distinguished, in addition to its habit, by the leaves being of a darker green, longer, and much more pointed. It also thrives better in sunny situations than *L. japonicum*, but in their flowers the two much resemble each other. The largest plant of *L. lucidum* that has come under my notice is close to the herbarium on Kew Green, in the small front garden of a private house, where it forms a plant quite 20 ft. in height, and is, during the season, laden with flowers. *L. lucidum macrophyllum* is

a variety in which the leaves are larger and not flat, as in the species, but concave, so as to form a channel down the centre. This species is often met with under the name of *sinense*, which is quite distinct, and in its turn is often known as *L. Fortunei*.

***L. LATIFOLIUM ROBUSTUM***.—Under this name there has been introduced from the Continent a Privet with leaves equal in size to those of the Laurel. It is apparently but a variety of *L. lucidum*, from which it differs only in the larger leaves and longer spikes of flowers. Of *L. lucidum* there is also a variegated kind.

***L. OVALIFOLIUM***.—A native of Japan, somewhat resembles a vigorous variety of the common Privet, and, as I have said, is in many places superseding it as a hedge plant; but although it reaches the required size sooner, yet when that is attained its strong growth is then rather a drawback to it, as it necessitates more frequent clipping. This kind is also largely employed for game coverts.

***L. LINEARE*** is generally considered a variety of *L. japonicum*, but it differs from that kind in so many respects, that for horticultural purposes it is sufficiently distinct. Its linear leaves are quite 6 in. long and not more than 1 in. wide, and much thinner than those of *L. japonicum*. The flowers are more sparingly produced, and the plant is almost deciduous. It is also met with in nurseries under the name of *angustifolium*, and is apparently the same as that mentioned by Loudon as *L. salicifolium*, but whether a variety or not, it is when growing freely certainly a striking kind.

***L. SINENSE***.—A charming plant in shrubberies, being about the end of August covered with beautiful plumes of fragrant white flowers, reminding one of sprays of *Spiraea japonica*. The leaves of this species are about 2 in. long, of a light green colour, the edges being undulated; and the branches growing out horizontally from the principal stems have a frond-like appearance, which is heightened by the regular arrangement of the leaves. It is, as the name implies, a native of China, and forms an evergreen shrub of from 10 ft. to 12 ft. high.

***L. ROSMARINIFOLIUM***.—Under this name there is a very small growing kind to be found in the nurseries, which flowers profusely when not more than 1 ft. high; it is certainly an interesting little plant.

There are also several other kinds in cultivation, such as *L. amurense*, about which at present little seems to be known. ALPHA.

### SEASONABLE NOTES.

#### Woods and Plantations.

THE principal work in progress during the present month should be the mowing of wood and plantation rides, and the trimming up of their sides; shooting tracks also ought to be trimmed and new ones in young covers made where necessary. After so long a spell of wet weather, roads and rides on which the haulage of timber and other wood produce has been going on, will need attention to put them in good order: quarry, or otherwise get together sufficient stones, gravel, or other material for the repair of carriage roads during autumn and winter. The thinning and pruning of young plantations and the cutting away of rubbish from young trees that is likely to injure them ought to be finished off at once. Staking and tying standard forest and ornamental trees is important work at this season that should not be overlooked or neglected. Where planting operations have been carried on and ground game plentiful wire netting is the surest and safest protection to young trees; even if rabbits are said to be kept down and are somewhat scarce, and wire netting is considered unnecessary, newly planted hardwoods and evergreens too frequently become victims to the nibbling of rabbits during frost and snow; to prevent and ensure the plants from such harm I have found it a simple, safe, and good plan to "bush" standard, forest, and ornamental trees, especially Ash, by tying a



couple of handfuls of Heath round them near the ground; if Heath cannot be had, young Birch or the trimmings of Fir trees will answer the purpose well enough, but I prefer Heath to any other material if it can be readily procured, as it will last for several years.

Where planting is in contemplation for the fast approaching season no time should be lost in deciding on the site and extent to be planted, as preparations ought to be commenced early, such as enclosing, draining, cutting, and clearing away rubbish, and digging holes for the plants. The present is a favourable time to transplant evergreens, particularly so while the weather is moist and warm. Hedge trimming and cleaning may now be done as opportunity offers when hands are not required for more urgent work. The annual supply of charcoal for home use should now be burnt before the days become very short. The usual stock of firewood, oven, and fire-lighting faggots must be got ready without delay and stored away in stacks or sheds when dry weather again returns.

During a wet showery time something like the present, woodmen can be advantageously employed in cutting Ivy off trees and grubbing out its roots wherever it is establishing itself on young Oak trees, saplings, or indeed on any other hard woods intended for profitable timber. In parks, pleasure grounds, hedges, or in well ornamented woods, Ivy may be permitted limited freedom, especially on old, picturesque, and inferior trees, but on young specimens either deciduous or evergreen it ought not to be allowed to get foothold; neither should it receive any quarter in young woods or plantations intended to be grown for commerce. Notwithstanding all that Repton or any one else has written or said on the subject of the non-injury of Ivy to the growth of trees, it cannot alter the veritable fact that Ivy is positively injurious to the free growth of young trees in full vigour, particularly young Oak and other trees with smooth bark. No argument, I think, can convince any one who has handled, barked, and worked amongst Oak timber that Ivy is not harmful. It checks the natural development of the bark, stem, branches, and leaves of young trees. Even in a common-sense view of the matter, without practical experience on the subject, the evil results accruing therefrom are too apparent and obvious. For instance, imagine a healthy young tree being enveloped in Ivy, its trunk tightly laced in a mat of rope-like shoots, its neck, head, and arms girdled and muffled up in wreaths of evergreen—why, the wonder is how such a tree so heavily handicapped and clothed can keep on growing at all. My advice to owners of fine timber trees is not to permit Ivy to take possession of them; surely there are plenty of old or otherwise inferior and damaged trees on most estates that may be given up to Ivy to luxuriate on and display its highly ornamental festoons of glossy greenery without its being allowed to encroach on and cripple fine trees. Honeysuckle is another ornamental climber that should be kept under in young plantations. If allowed to take possession of the Larch in the early stages of its growth its will utterly destroy the leading shoots and damage the trees so much that they become almost, and in many cases, quite worthless.

In the nursery ground the transplanting of evergreen trees and shrubs may forthwith be done. During wet weather cuttings of shrubs and trees can be made when the "hands" are unable to work outside. Trim and clean hedges. Make compost heaps of road parings, weeds, and quick-lime; turn and well mix old compost heaps and re-form them into steep ridged mounds. Look over hardwood trees and clean their stems by pruning off branches and dis-budding to about one-third their height; lighten the heads of standard trees by foreshortening the largest and heaviest branches, and thin out the shoots where they are too numerous, leaving the central or main shoot intact to form the backbone. Shrubs that are getting straggling in their habit and encroaching on one another should

be slightly trimmed round, and any strong bare shoots well cut back. Towards the end of the month deciduous trees that are to go out this season, and are sufficiently ripened in the wood may be lifted, sized, and thinly heeled in, but care must be taken to cover their roots with plenty of soil, so as to be secure them from frosts in case they may not be removed before the severe winter months.

G. B.

**Variiegated Thorn.**—We consider this worth growing only as a variety. As a variegated tree for producing effect it is valueless, compared with such trees as *Quercus Cerris variegata* (the Variiegated Turkey Oak), *Cornus Mas variegata* (Variiegated Cornelian Cherry), *Ulmus campestris argentea* (Variiegated English Elm), and others, consequently we have discontinued propagating it.—SALTMARSH & SONS, Chelmsford.

**Prickly Oak** (*Quercus coccifera*).—I brought some Acorns of this from the forest near Hyères where it forms the main undergrowth, evergreen, and never exceeds from 4 ft. to 5 ft. in height. I sowed them in June, and they are now nice plants a few inches high. Should it prove hardy it would be useful where a low evergreen growth is required, such as would not intercept a distant view, but it is hardly ornamental enough to deserve a place in the greenhouse.—GEORGE H. CORNWALL, *Moccas Court, Hereford*. [In the arboretum at Kew this Oak is a stunted bush about 5 ft. in height. It is apparently hardy. We saw it some years ago in a thriving condition in Gloucestershire.]

#### RAMBLES OF A PLANT COLLECTOR.

(Continued from p. 249.)

As my time was short to spend in Yeddo, and my next journey a long one, I decided to start overland first to Nikko on my way, and then to Awomori, the northernmost port in the island of Nippon. I was obliged to go overland, as the steamers were not running to Hakodati in Yesso, on account of the civil war in the south. My journey was over 500 miles, and I left Yeddo (with only a Japanese map) in the last week in May. The season compared with that of England was some three weeks earlier: Wheat was in ear, and Rice just appearing in the thickly-sown watery seed beds. We left Yeddo, and after two days' travelling arrived at Nikko; a magnificent avenue of *Cryptomeria* occupied 50 miles of the road; one tree blown down measured 173 ft. long and 6 ft. in diameter at the bottom. I counted the rings in a sawn log from another tree and there were 340; hence, I suppose, we may say it was 340 years old. I was told the avenue was planted about 300 years ago by a daimio, as a gift to the first Shogun, the founder of the Shogunate. The scenery was magnificent; the highest mountain, Shirani Jan, is about 9000 ft. high, and is about 10 miles from Nikko. I left Nikko and proceeded on my journey. The road from Yeddo is very good, being one of the old daimio roads, and the highway from the north to the seat of government at Yeddo; in the old days the road was better kept than it is now, and I was told that when a prince was *en route* for Yeddo scarcely a stone or weed was to be seen the whole way; trees were planted for considerable distances, and formed splendid avenues. The country thus far was mostly flat, and paddy fields bordered the road north on both sides. Away on the left could be seen the snow-capped ridge of mountains stretching from north to south of Nippon, and in the early morning the scenery was fine. We passed numerous villages, and generally the country was thickly populated, and the fields finely cultivated. In the larger towns we had very good hotels, and rooms beautifully clean. We arrived at Lendai, and found it a very large town, to all appearance almost as big as Yeddo.

After leaving Lendai the road got very uneven, and in some places almost mountainous. I was obliged to walk in many places, and our baggage was sent on horses and bullocks. We came to a town called Morioka, from which a fine mountain can be easily reached. I made a trip up the hill, but found very little to interest me. I also made several short journeys off the road between Morioka and Awomori. I found a greenish *Aquilegia* growing plentifully on one hill. The forests were principally Oaks, Maples, Chestnuts, Birch, and Alders; over the low hills *Eulalia* and *Lespedeza bicolor* were growing for miles, and quite 4 ft. high, intermixed with abundance of *Pteris aquilina*. After leaving Morioka I found the country very thinly inhabited; in some places we went for seven or eight miles without seeing a house or signs of cultivation. After fourteen days' hard travelling we arrived at

**Awomori**, the northern town of Nippon. Here I was obliged to wait several days for a steamer to take me across the straits of Trugar to Hakodati, about sixty miles. Here I decided to make a trip to a mountain about twelve miles out from the town. I took a ramble in the evening round Awomori, and passing a garden I saw a particularly handsome *Abies*. I asked permission from the owner to examine the tree. I found it to be a new species. I wished I could have transferred it as it was to England. Its foliage was light green, all the leaves lying flat on the upper part of the branches; and I was told by the Japanese that he took it as a small plant from the mountain I intended visiting. Of course I immediately gave orders for a thorough search on the mountain, and went home, but not to sleep that night; my thoughts were too much bent on the new Conifer, and the next day I left Awomori for the mountain in question. I started to walk, with one coolie with me to carry my vasculum, expecting to have horses to ride back. We reached the bottom of the mountain at 8 o'clock, and we then procured a guide. We were walking and climbing from 8 till 1, when I found we had ascended 3500 ft. We had passed over a most difficult road, and the track we had followed now came to an end in a dense Bamboo scrub. Far above us could be seen the long-wished-for *Abies* in large quantities. Once I was so near that I could see the cones standing up on the branches, but I could not reach any of the trees. It was impossible to get up through the Bamboo. I tried the ascent up the river gorge, but had to turn back; and after struggling about for nearly two hours we gave up the search. I dined on the rocks by a pretty waterfall, and contented myself with gathering specimens of Ferns and the plants growing round to dry. We returned in a terrific thunderstorm, having to pass, as it were, through the clouds down the mountain. We could, as it were, almost feel the thunder, and several times we lost our way in the dense mist and rain. We arrived in Awomori at 9 in the evening, very much put out at not being able to procure specimens. We walked about thirty-four miles that day. I, however, left again the following morning on horseback with my boy and a charcoal-burner for a guide. We ascended the mountain by another road. When we were about 2000 ft. up, we passed over a large sloping tract of land covered with Lily of the Valley now in full bloom. I had never seen such masses before; they were growing in a perfectly exposed situation, not a tree for at least half a mile to shade them. We descended into the river (not the same we were in yesterday), and after a stiff climb with our horses, again skirted the forest about 3000 ft. on the north side; we were on the south before. I found the Bamboo was not near so thick, and here I discovered a fine evergreen *Lastrea* now



called Maximowicz; a hardy evergreen *Lomaria* with fronds 2½ ft. long; and an *Arum* with enormous leaves—a swamp plant with a white spathe about 4 in. long. Several *Actinidias* with white and coloured leaves were twining everywhere, and at last I came suddenly on a clearing of burnt forest, in which there were two or three fine specimens of the much-wished-for *Abies*. I was soon at the top of one of the trees, and was rewarded with half-a-dozen fine cones and branches. I felt I had done enough for one day, so we made a thorough examination of the specimens, and I felt convinced a new species had been discovered. Dr. Masters has since named it *Abies Mariesi*.

Near here I discovered a swamp in which several almost boiling sulphur springs were oozing out; the mountain is evidently an old volcano. This is by far the wildest part of Japan I have seen, and very few Japanese even have ever been where we rested to-day. We disturbed two black bears upon which we came suddenly; they had a good look, and were soon out of sight. On the deep rotten Bamboo leaves were hundreds of snakes sunning themselves, all of them harmless.

As we returned along an old lane near a forsaken temple I found a grove of another, to me, new Fir. I thought I had found *Abies Douglasi*; it was so much like it, and quite as handsome. I went to the top of one and my boy another, and we found an old dry cone; then I thought it was *Abies Veitchi*, and took specimens as being such, and it was not till I had been in Yesso that I found out my mistake. I, however, think it to be a variety of *A. Veitchi*; it is a stronger grower, and if anything a finer Fir than *A. Veitchi*; both are very fine; it is also a fine timber tree of quick growth. Dr. Masters has named it *Abies sachalensis*, and having found two new Firs, my trip quite repaid me for all my trouble, and my only thought now was, how could I procure seeds? I found when I returned from the mountain that my baggage had been taken to another house away in the country. During our absence a fire had broken out in the town of Awamori, and quite half the town was burnt, in all about 1000 houses. What was a pretty Japanese town in the morning was now lines of black charred posts. We were, however, transferred to good quarters—to a villa residence with a nice garden, and very clean and neatly furnished. Our host was a great man for plants and gardening, and was delighted when I made him a present of a couple of small plants of *Abies Mariesi*; he also gave me a valuable description of Yesso, for on both sides of the island he had been a traveller. We left our host in the morning to go on board the steamer for Hakodati.

C. MARIES.

**Pansies.**—Miss Jekyll says "These have been in flower since March and are still a mass of bloom, but going off in size and colour. I am cutting them all over to get a second bloom." What a sacrifice! The Pansies here are as bright in colour as in spring, and much more profuse as regards bloom—masses of gold and purple. About once a fortnight all the seed vessels are carefully removed, and in that lies the secret of their prolonged vigour and beauty. The process is simple, and the results most satisfactory.—A. G., *Mid-Scotland*.

**Pelargonium Bonfire.**—I notice that this is the only one that shows colour at a distance, and a bed of it and *Duchess of Sutherland*, grey *Viola* alternating and edged with *Dactylis*, is the best of all the flowering beds here. I must, however, say a word of praise for the *Alternanthera* and dwarf succulent beds (I will not call them "carpet"), for they are as bright as ever, and do their best to cheer the melancholy of gray and green.—E. H. W.

## THE KITCHEN GARDEN.

### POTATO CULTURE.\*

AFTER shortly adverting to the introduction of the Potato, Mr. Farquhar said, Few vegetables are so badly treated in respect to the preparation of the soil as Potatoes. While every one possessed of a small bit of ground makes an attempt to grow them, they are too often planted in ground which had lain undisturbed since the Potatoes were dug the former season. Under such treatment they cannot be expected to make great returns. Soil and its conditions are important elements to successful cultivation; and whether the natural soil intended for that crop be peat, loam, clay, or sandy, or combinations, I would say trench thoroughly 15 in. or 18 in. deep at least, and as early in the autumn as possible; and in gardens generally at that season there are accumulations of decayed vegetable matter, as the stems of Cabbages and others of the Brassica tribe, herbaceous flower-stems, leaves, and grass, &c., all of which are useful in the bottom of each trench. These act as drainage, and assist to keep the soil open, and allow atmospheric influences to play the more important part of breaking up and disintegrating. Trenches 2½ ft. to 3 ft. should be thrown into ridges, picking out all stones of any size, and throwing the rougher portions of the soil to the surface. The ground selected should also have a free open exposure, not by any means shaded either by trees, hedges, or walls, as nothing is more injurious to the free development of the Potato than shade of any kind. It may add to the tops, but diminishes the roots, both in quantity and quality. Every one growing Potatoes is anxious to obtain a few from the open ground as early as possible, either by planting at the foot of a wall or early border, but those who have neither of these advantages may, with a little extra labour, convert a whole quarter of ground, so as to give similar advantages to early crops, by commencing at the north end of the quarter, and turning it up in trenches of 7 ft., the trenches running from east to west, and with a slope to the south of 12 in. on the trench of 7 ft. This will give lines 5 ft. long and 2 ft. apart, and will produce crops heavier and about as early as from the borders. Before coming to speak of seed and planting, I think it proper to name a few sorts, not a competitor's list, but such as have been found in general to be good, useful sorts for table use, and most of which are likely to retain a place in the seedsman's catalogue for some time, viz.—White Kidney—Ashleaf of sorts, Early Ashtop Fluke, Woodstock Kidney, Snowflake, and Magnum Bonum. Coloured Kidney—Purple Ashleaf, Bountiful, Stafford Hall, and Red Regents. White Round—Handsworth Early, White Forty-fold, Coldstream, Regents, and Victoria. Coloured Round—Forty-fold, Emperor, Grampian, and Blue Fluke. I refrain, as I have just said, from giving names of sorts suitable for competition; these vary so much every year, besides the competition table requires colour, size, and shape only, while for the table a white mealy Potato of good quality and of moderate uniform size is always preferred.

**SEED OR SETS.**—Previous to the disease much abuse existed as to a proper selection. Some used all the larger roots for table use, and planted only the small refuse, while others chopped them all and sundry with a spade to save time in cutting. Both was a great abuse, and must have occasioned bad results. At the present time good cultivators are divided as to their opinions. The one prefers to use moderate-sized tubers whole,

cutting all the eyes but one, or even very large Potatoes, doing the same, giving distance in planting; or they may plant as they are, and take off the extra shoots as they appear above ground; while the other system comes to us from America, and is now in very general use—viz., that of cutting up the largest and finest-shaped Potatoes in single eyes, and dusting with lime to prevent the loss of sap. This I find is the most economical, and it gives the best-formed tubers and the largest returns. The most notable example of this method was the Hooper's contest of 1875, in which from 1 lb. of sets planted (*Snowflake* and *Eureka* were the sorts selected), the results were from 60 to 600 lbs. of sound produce; the number of eyes into which 1 lb. was cut varied from 48 to 72, and were planted 12 in. to 18 in. apart in the lines, which were from 4 ft. to 6 ft. asunder. The sets should, if possible, be selected while digging up, and they should not be over-ripe, selecting the most uniform and true of the type. This is often to be known as much by the haul as by the tubers. They are then to be laid aside on shelves or lofts, or any airy place under cover, thinly spread out where they can be looked over, and diseased or injured ones picked out—ultimately to be stored, each sort by itself, in shallow boxes or cellars, where they can be clear of frost and not too warm nor close to induce an early growth. Potatoes, except for forcing purposes, should not be allowed to sprout before planting. When such growth does take place, and is broken off, it is just so much the energy of the plant wasted; hence it is unreasonable to expect the same results as from healthy sets.

**PLANTING.**—If very early Potatoes are desired, forcing in pots or boxes is the most convenient, and, if large enough, they may remain in such till they come to maturity, planting but one seed in each, and earthing up as they grow. Forcing in frames or pits is the most common, using from 2 ft. to 3 ft. of hot manure, mixed with leaves, to produce a gentle heat, and when it subsides, 10 in. or 12 in. of light, open mould placed upon it. Thereafter the Potatoes are planted, two lines under each ordinary-sized light. The sets may be started 2 in. or 3 in.; if desired early, plant shallow and earth up as they grow; also cover at night with mats or straw to protect them from frost, and as they advance to maturity a considerable amount of air is given, which adds both to the quantity and quality of the Potatoes. In forcing the Potato, it invariably is the Ashleaf or some of its varieties that is used; these should never be cut for forcing; use medium-sized sets whole and place them perpendicular, thick end uppermost, so that when all are planted in one way the crops come more uniform and earlier to maturity. Those also who grow Potatoes in early borders, or such beds as I have mentioned, use the Ashleaf, started and carefully transplanted with a trowel, placing over the roots at the time a handful of refuse soil from the potting bench, or some such dry material. Lines 2 ft. apart are sufficient, and when they appear above ground, if there be any danger from frost, examine daily and draw the mould over them. Besides flower-pots, mats, boards, and branches are all used for purposes of protection. In treating of the more general planting of the main garden crop—say in February or March, according as the season is suitable and the soil dry—if the ground has been trenched in autumn, as recommended, the ridges should now be levelled down, and if the ground require any heavy manure, such as that of cows or horses, or old hot-bed manure, this can be dug in preparatory to taking out the lines. Avoid fresh manure, as it injures the flavour of the Potatoes.

\* Read by Mr. R. Farquhar, Fyvie, at the North of Scotland Association's Meeting, Aberdeen.



The lines should run south and north if possible. These, then, are to be marked off only a few inches deep, either with the hoe or spade, 3 ft. apart, and into these, at planting time, the lighter manures are often used with advantage, as wood ashes, leaf mould, lime, salt, woollen rags, bone dust, guano, soot, and Potato manure. I do not mean all of these to be used at one time, but one, two, or three, as may be thought necessary for the ground, and according to the planter's choice in selecting and his means of obtaining them. The sets may be from 10 in. to 15 in. apart in the lines, and some time after planting, the ground between the lines should be dug up with a four-pronged digging fork. Hoeing and earthing up is then all that is necessary till the crop is ripe. Two or three points are necessary to be considered in respect to Potato culture, viz., do everything to the ground when in a dry state; give plenty of space according to the respective sorts, so that the roots and tops may have ample room for development; plant shallow, eyes always uppermost, and cover lightly. The sorts of Potatoes for the main crop are more varied than for forcing, but the white kidneys are preferred for table use during summer, while round sorts are in general the heaviest croppers and more in use with amateurs and for market purposes. The coloured varieties are better keepers and of better quality for winter and spring use.

**STORING.**—Potatoes are often stored in what are called pits on the ground, placing each sort by itself or in such quantities as might be suitable for taking indoors at once. These are covered either with turf, straw, dried fern, or rushes, whatever may be the easiest obtained, and afterwards a good covering of earth is placed above all, and of sufficient thickness to protect them from frost. The Potatoes so covered should always be dry, and all such as might be showing symptoms of decay or in any way injured should be taken out. But from the experience of last winter, I would advise those having much to do in keeping Potatoes either to use cellars, or to have a house set apart for Potatoes where they could be conveniently looked over during a long stormy winter, so as easily to obtain the daily supply, and to pick out any that might be going wrong; but even here they must be well protected with layers of dry earth, sand, or ashes, covered over properly with some dry and light material, easily removed and effective against frost, because they ought to be kept dark and close to retain the good qualities of a proper Potato.

**SEED RAISING** becomes necessary in order to improve the sorts, as a degeneracy in the Potato is known to exist. Some speak of growing the same sort for thirty years without detecting any deterioration in the sort, but from fifteen to twenty years is generally given as the limits of a race; but under good culture and a change of soils, many last good much longer. Since the disease of thirty-five years ago the raising of new sorts from seed has been often recommended as the principal remedy for getting clear of it. Many therefore resorted to seed raising without the knowledge of selection by hybridising; so many of the new names we yearly hear of, most of them soon fall to the ground, because, when out of the raiser's hands, it is discovered very often that though new, they are not better than sorts we had before. Now it is only those who attend to fertilising, selecting sorts possessing the qualities sought for, that are rewarded with success, and even in their case there is much chance work, for out of perhaps 100 plants or seedlings, only a few may be worth retaining, and perhaps none. The work no doubt is simple, but it requires a mind thoroughly interested in it, also leisure and close observation to work it

out, as from the time the collecting of the seed takes place it takes three years before the quality of the tubers can be ascertained. And according to Mr. Fenn, one of the most successful raisers of the present day, and one who has more good sorts before the public than any other, it takes four to five years before the true type of character is fixed. New sorts are also often increased by cuttings.

**DISEASES.**—The Potato has been at two different periods threatened with extermination. The first mishap was the curl in 1764, for which the only remedy then known was obtaining seed from a colder clime, a practice which still holds good, and for the same reason seed not thoroughly matured is also recommended. The next was the murrain, or fungus, the resting spores of which Mr. Worthington Smith discovered and named *Peronospora infestans*. This disease first broke out in 1845, since which it has never entirely left us, and neither science nor art has been able to find a remedy. Some sorts are said to be disease proof, but I have never found any Potato to be so. I have more faith in thorough good cultivation than anything else. Select good sound sets which have not been sprouted, plant in ground possessing all the requisite manures to bring the plants to proper maturity, and not too rich to induce luxuriant tops; also well pulverised and entirely free from shade. Plant in spring when the heat gets into the ground neither too early nor too late; also lift early. Autumn planting has been recommended as a cure. I have tried it, but never found any advantage, so I gave it up.

**Potato planting.**—Mr. James Howard writes to the *Times* as follows respecting his experiments on autumn and spring planting Potatoes: On November 3 a piece of land which had yielded a heavy crop of Champions was planted with Rivers' Royal Ashleaf, the rows being 45 yards long each, and 97 sets being put into each row. One portion of the land was left unmanured (purposely); the other had a dressing of soot. The remaining portion of the ground was planted on March 29 with the same variety of Potato, one section being unmanured and the other dressed with soot. The autumn portion of the unmanured plots averaged 111½ lb. per row, the spring-planted 98 lb. per row. The autumn-planted portion dressed with soot yielded 137 lb. per row, and the spring portion 110 lb. A second experiment was made upon another plot of ground from which a crop of Onions had been taken. Three rows, each 11 yards long, were planted on November 12 with Rivers' Royal Ashleaf, and three rows on March 29 with the same variety. The average yield of the former is 58 lb., the latter 49 lb. per row. Two rows of Beauty of Hebron, planted alongside, on November 12 and March 29, yielded respectively 110 lb. and 104 lb., while two other rows of Woodstock Kidneys yielded respectively 102 lb. and 69 lb.—an astonishing difference in favour of the autumn-planted. Deep planting in autumn, 8 in. to 9 in., is needed. The late severe winter proved that even this was not a sufficient depth if planted upon ridges—drills, as they are termed in Scotland. I planted a portion of a field upon ridges or drills, the seed upon which was completely destroyed by frost; while upon plots planted on the flat in precisely similar land—boulder clay—not a set was touched. The results this year have not been so clearly in favour of autumn planting as last year, except that the crops both years were ripe two or three weeks before the spring-planted ones, and thus might have been gathered both years before disease made its appearance.

**Hardy Maiden-hair Fern** (*Adiantum Capillus-veneris incisum*).—In the neighbourhood of Lisdoonvarna, Co. Clare, is found in considerable quantities this distinct variety of the Maiden-hair

Fern, mentioned in *THE GARDEN* (p. 199). Deep down in the clefts of the limestone rocks close by the sea-shore, it may be found luxuriating in the moist and mild climate of the west coast of Ireland, where the influence of the sea protects it from the frosts of winter. Although quantities are annually brought by children for sale to visitors, it is still possible to find it amongst the more distant rocks, where also abound *Asplenium maritimum*, crested and fringed forms of *Scopolendrium*, *Dryas octopetala*, *Geranium sanguineum*, and various other rock plants. —J. T. POE.

## BIRMINGHAM BOTANIC GARDENS.

LIKE most of the botanical gardens in the provinces that at Birmingham is much too limited to properly carry out what a garden professedly devoted to botany and horticulture should do. Small as it is, however, it has the advantage of a pleasant site, and the dozen acres of which it consists were originally laid out very appropriately by Loudon, but subsequent alterations have somewhat marred the design. When this garden was formed a general interest appeared to be taken in botany and arboriculture, and the garden literature of that time gives evidence that this Birmingham garden was instrumental in introducing quite a host of beautiful flowers and trees to our gardens, but now, unfortunately, public interest appears to be diverted in another direction, as the majority of our botanical gardens, and particularly those in the provinces, too plainly show. One of the greatest evils that has crept into our provincial botanic gardens, and one that unfortunately seems to be getting a firm hold, is that of allowing popular games to be played therein; consequently, oftentimes the best part of the garden is appropriated either to croquet or lawn tennis. To the latter a good portion of the Birmingham garden is devoted, and to effect this it was necessary to destroy both tree and shrub growth, not only valuable from an educational point of view, but an important embellishment to the grounds. Such destruction certainly ought not to be countenanced by those who have it in their power to suppress it. This appears to us to be sacrificing the pleasures of the many to the pastime of the few. Apart from this, the garden is in excellent condition throughout, the grounds bright and cheerful, and the houses teeming with a rich collection of well-cultivated plants. The formality of long lines of beds, poor plants, and staring labels is not apparent at Birmingham, the garden set apart for educational purposes being screened from the main portion. What we most admired in the grounds were the bold groups of particular tribes of trees, a feature indicative of the designer. How different is this bold grouping from the ordinary plan of jumbling together a heterogeneous mixture with the idea of creating variety, but which in the majority of instances degenerates into confusion. Here in one part we have a fine group of Hollies; in another a similar one of Pines; Maples occupy another, and so on throughout all the finer types of our hardy trees and shrubs. Much, however, as has been done to represent the fine vegetation of our northern clime, still much remains to be accomplished, particularly as regards the herbageous element to which in all our parks and gardens but scant justice is done.

The garden is on the red sandstone, and at one extremity of it, formerly a quarry, there is a fernery, good in design, well suited for the growth of Ferns, and stocked with a rich collection far finer than we can boast of in our national garden at Kew. The sides of this grotto-like excavation form a steep rugged declivity, the blocks of sandstone jutting out in a most picturesque manner, and the soft green of the



Ferns form a pleasing contrast to the prevailing tone of red. We noticed several kinds in this fernery that are benefited by shelter, and which would not have thriven in a more exposed situation. Another good site for a Fernery would be found where now is a mean pool of water, which in no way harmonises with the other parts of the garden, and would be far better converted into something more appropriate. A pleasing feature is the broad sweep of undulating lawn, uninterrupted by beds or other impedimenta, and where visitors can promenade within a few yards of the orchestra. Along the crest of this lawn is the only display we saw of bedding plants, and the beds being on the slope the plants show to advantage, and enliven the surroundings with their bright colour without being too obtrusive.

The houses are numerous, the principal being arranged in a block along the uppermost part of the garden, supported by a terrace overlooking the whole. The structures are a mixture of both old and new—the old now in a dilapidated condition, but comprising once a handsome house with a central dome of noble proportions, but supported on either side by mean-sized lean-to houses. These are all constructed of iron, and the twisting of the sash-bars shows too plainly how unsuitable the material is for such structures. The new structure, with a ridge and furrow roof, is really a handsome one, the front portion being the largest, the back a tropical aquatic house. These are supplemented by numbers of other houses, smaller houses, and pits in the rear. The collection of plants is extensive and thoroughly representative, and on the whole grown in an excellent manner by the curator, Mr. Latham.

The large conservatory contains some really fine plants, some not to be met with elsewhere. For instance, of *Dicksonia arborescens*, a rare cultivated Fern from the Diana's Peak, in St. Helena, there is a grand specimen with a stem some 4 ft. or 5 ft. high, and a wide spreading head of fronds that are extremely handsome, much more so than those of *D. antarctica*, which *arborescens* somewhat resembles. Of such tree Ferns as *Cyathea medullaris*, *spinulosa*, *Smithi*, *Dicksonia regalis*, *Youngi*, and *fibrosa*, there are some exceptionally handsome specimens in vigorous health. These Ferns are interspersed with equally fine examples of other plants, the whole combining to render the house most interesting and beautiful. One of the most remarkable plants was a specimen of *Lapageria rosea* planted against a back partition. The branches had spread over a wide extent of trellis which was placed a short distance from the roof, and the large highly coloured flowers hung from it in graceful profusion. The plant itself is growing in free soil of a peaty character, and the spot is somewhat shaded. Stove aquatics, consisting chiefly of *Nymphæas*, are grown well in a snug tank surrounded by a variety of beautiful tropical vegetation. In this house some suspended baskets or pans of *Achimenes* were unusually fine, being wholly covered with bright mauve coloured flowers. Another remarkable plant was *Callicarpa purpurea*, a shrub bearing dense clusters of small purple berries crowded at the axils of the leaves. In autumn and winter it is highly attractive, and deserves to be grown for the berries alone.

Ferns are represented by a remarkably rich and well-grown collection. Besides the tree kinds we have just mentioned, there are housefuls of others, some of them rare even in our best collections. Amongst these may be mentioned *Drynaria Meyeniana*, a noble species from the Philippines with leathery fronds that form a spreading mass; *Humata pentaphylla*, a neat growing Hare's-foot, well suited for covering a block or Fern stem quickly, and not being deciduous is all the more desirable; *Rhipidopteris*,

*peltata*, a pretty little Fern, growing finely in a large pan; *Gleichenias* are also well grown in a cool span-roofed pit, *G. dicarpa*, *flabellata rupestris*, *Spelunca* and *Mendelli* being particularly fine, and all the more noteworthy, as these are among the Ferns that usually are so badly represented in botanical collections. Among other Ferns of note were *Thysopteris elegans*, a rare species from Juan Fernandez, with elegantly cut fronds of firm texture—altogether a most valuable greenhouse Fern, and one that ought to have found its way into general cultivation. *Gymnogramma Pearcei*, one of the most interesting of the Golden Ferns, and *Adiantum amabile* (Moorei) an exquisite Fern for baskets. Among the hardier kinds was some plants of that rare North American Fern, *Aspidium fragrans*, with fronds having a perfume akin to that of Violets. It is quite hardy, but inclined to be delicate if in soil at all unsuitable. The pretty South Brazilian Fern *Mohria achilleaefolia* deserves notice, as it is said to be almost, if not quite hardy. The fronds are very finely cut, like those of the common Milfoil. This species being so elegant is well worthy trying in various localities. *Nipholobolus Lingua corymbifera* is a handsome variety with the fronds terminally tufted. It is represented by a very fine example. *Platycerium Willinckii* differs from all the rest in having the elegantly cut fronds drooping in long tail-like masses from the suspended blocks. The true *Pellaea flexuosa* is a more graceful plant than *P. calomelanos*, which is often sold for it; the former may be distinguished at a glance by the zigzag arrangement of the rachises. *Polypodium appendiculatum* is a beautiful Mexican Fern, differing from all others in the stalks and the intricate network of the fronds being tinged with bright red, rendering it singularly attractive. *Drynaria muscicola*, *Pellaea ornithopus*, a delicate Californian Fern, and various filmy kinds were among the others we particularly took notice of.

Orchids are represented by a numerous collection, but being the duller time of the year with regard to their flowering we did not take note of any but those whose flowers attracted us. Among these was *Disa grandiflora*, in a pan with stems bearing from six to nine blossoms. Other kinds in flower were *Cattleya Loddigesii*, a species in the way of *C. Harrisoniae*; some of the trusses bore four and five blossoms of the most beautiful delicate mauve tint imaginable. I also noticed *Phalænopsis* in rich variety and in luxuriant growth, as were also some of the *Dendrobiums*, notably *D. primulinum* and *Wardianum*, grown in shallow baskets suspended in as light a position as possible under the roof.

Other plants taken notice of as being remarkable were *Methonica superba*, the true form and a very beautiful plant that well merits being grown in every stove as a pillar or roof climber. *Dipladenias* are well grown, *insignis* being finely in flower. *Ceropegia Saundersii*, a highly curious Cape plant, is the finest we have seen: *Scutellaria Mocciniana*, above all others, brightens up the stoves with its orange and scarlet heads of flowers—a plant pre-eminently suited for private gardens. *Vriesia Glazouviiana*, a noble Bromeliad, has huge recurved leaves, produced in a vase-like manner; *Phytolacca decandra*, a plant with a long pendulous raceme of purple black berries, was used with good effect among fine foliaged plants. *Francoa appendiculata*, a hardy plant grown in pots for the conservatory, was very beautiful, as were also the *White Belladonna Lily* (used for a similar purpose); *Cyrtanthus obliquus*, an *Imantophyllum*-like plant, with dense clusters of orange and red flowers on stout erect stalks; *Lasiandra Kunthiana*, a showy plant in the way of *L. macrantha*, but of more straggling growth; *Lobelia littor-*

*alis* or *Pratia angulata* grown very prettily in hanging baskets; *Sibthorpia europæa variegata* might also be seen here and there, and the *Chilian Dodder* (*Cuscuta chilensis*), with its thread-like stems entwined in death-like grasp round the stems and branches of some dwarf shrubs.

In the herbaceous department outside there is a good collection of alpine and herbaceous plants, many of which were showily in flower, the brightest being the *Flame Nasturtium* (*Tropæolum speciosum*), which has established itself against a foot of one of the walls, covering it with a profusion of its vividly scarlet wreaths of blossoms.

W. GOLDRING.

## THE INDOOR GARDEN.

### THE CAMELLIA AND ITS CULTURE.

Soil.—About ten years ago Mr. W. Paul gave an interesting lecture on the Camellia at South Kensington, and some discussion took place as to the best soil and other treatment necessary for it. The compost used at the Waltham Cross Nurseries, where very successful results have been obtained, is one of good turfy peat and yellow loam. The late Mr. Pearson, of Chilwell, considered that loam without any peat was better for the Camellia than any mixture, and he preferred it cut from an old pasture and used at once. Since that time I have tried many experiments with the Camellia, and amongst them the system of cutting turf from an old pasture where the soil was a light sandy loam. In this the plants did well for some time, but afterwards the growth was not satisfactory, and the foliage had not that dark glossy green hue so much desired. There is also a black sour peat obtained from undrained boggy soil which is even more unsuitable than some loams. Sandy turfy peat, on which Heath grows freely, two parts, and about one part of good turfy loam, which grows Brackens and in which the *Rhododendron* will thrive, are the best. Add to this some crushed bones and rotten stable manure. This compost is of a lasting character, and in it roots are formed freely, and do not perish if the plants are judiciously watered. The young roots of the Camellia are white, brittle, and easily injured. In repotting the plants, if these are in good condition, they ought not to be disturbed; it is enough merely to remove any loose soil from the surface with a pointed stick; the broken potsherds should also be carefully removed from the base of the ball. Select pots 2 in. or 3 in. wider than those in which the plants were growing previously, and let them be clean and well drained, and press the compost in moderately firm. It is well not to give any water for a day or two after repotting.

Camellia houses.—The form and style of house in which Camellias are grown has also something to do with their success. The modern system with a large extent of glass surface exposed to the sun, large squares, and light bars in the roof is not the best. Such houses look well from an architectural point of view, but for the purposes of Camellia and Orchid culture the closely placed bars and small panes of glass are better than very large squares. One of our best practical gardeners near London told me that it was his belief that the modern system of hot-house building had killed nearly all the fine old Camellias in the neighbourhood of London. In the old style of house so much shading was not required, the lightest material being the best, and its use was required during the hottest part of the day only. It is also believed by many that the small panes caused a purer atmosphere in the house, by promoting a healthy circulation of air where the panes joined. We have some evidence that this is of considerable importance in maintaining the health of the plants. To do the Camellia well, a house with a west aspect suits it best. It should either be a lean-to or half-span. If a whole house can be given up to



their culture, it is comparatively easy to grow them well. They require an airy greenhouse temperature all the year round, except when they are making growth during the early summer months, when a close, moist, rather warm atmosphere suits them best. If Camellias have to be grown in a greenhouse with other plants, they ought to be removed to another house while making their growth. When the buds are formed, it is then a question what is to be done with the plants. If there is room under glass I would not think of placing any plants out-of-doors, but sometimes there is no alternative; then it is as well that they be partially shaded from the midday and afternoon sun, and also from heavy rains. The best place for them is a shady part of the greenhouse or conservatory.

**In forcing** the Camellia in order to obtain early flowers, put the plants into the forcing house early in the year, and let them remain until the buds have swelled considerably. This year we could have cut plenty of flowers a month before Christmas, and had a succession until the end of March. The latest flowering plants are never taken out of the greenhouse. There they remain while making their wood.

**Buds dropping.**—Camellia buds have a tendency to drop off if they are subjected to a change of culture when the buds are advanced. For instance, the plants remain out-of-doors in a partially shaded place until the end of September, where the leaves are alternately drenched with dews and rains. At that time they are removed into the comparatively dry and warm atmosphere of a greenhouse or conservatory, with the result that many buds will drop unless the change is made gradually; this can be done by admitting rather more air than usual and syringing the Camellias overhead once a day.

**The size of plants purchased,** if any, may be according to requirements, but it is essential that they be healthy and free from scale. Young plants get into bad health from various causes, the most common being inattention to watering, and allowing them to remain so long in their pots that they become pot-bound. When a Camellia gets into this state it is difficult indeed to bring it round into good health. The best plan is to repot after removing the dead roots and useless soil. This should be done before the plants start into growth; they should then be put into a house or pit in which there is a moderate heat, and be dewed overhead twice a day, taking care not to over-water at the roots, until fresh ones are formed to draw up the water. They must be well shaded from the sun until they start into growth.

**Camellias planted out.**—Although most persons must be content with Camellias in pots, after all this is not the best system of culture. They succeed best planted out in a prepared border of good soil. I have seen them do remarkably well planted in the inside border of a vinery, or rather a greenhouse and vinery combined. The Vines were planted outside and did not quite cover the glass roof, and the management was such that the Camellias did not interfere with the Vines nor the Vines with the Camellias. There was annually a good crop of Black Hamburg Grapes, and in the case of the three large Camellias, Lady Hume's Blush, fimbriata, and the Old Double White, each of them produced hundreds of blossoms annually. The Vines were not forced, and the roots did not run into the space given up to the Camellias; and, moreover, they were thoroughly drenched with water—root and branch—during the growing season.

**Camellias hardy.**—It is not yet known to everybody that the Camellia is quite as hardy as the common Laurel. We had one large bush thoroughly exposed to the north-east during last winter and for two winters previously, and there are two more Camellias in the garden here partially sheltered by trees, and all of them were quite unharmed by the severe winter of 1879-80. The two large bushes have been out for ten years, and some seasons they have been quite loaded with flowers. In many cases the Camellia might be planted out instead of the common Laurel; its

leaves are more varied and beautiful, and in some seasons its flowers would be produced after the flowering period was over indoors.

The varieties of Camellias are very numerous now, but the Double White and Fimbriata are the most grown. Imbricata is a good red variety when that colour is required, and the new American varieties sent out by Mr. Hovey should be in every collection.

J. DOUGLAS.

Loxford Hall, Ilford.

#### SPECIES OF KENTIAS.

CONTINUING my remarks on some of the hardier Palms, I would next call attention to the Kentias, most of which may be successfully grown in a greenhouse or intermediate temperature, and whose graceful habit and robust nature, together with the ease with which they may be cultivated, are characters which should win for them general favour as decorative plants. They are of comparatively recent introduction to gardens, the first to make its appearance, *K. Canterburyana*, being introduced about ten years ago, since which time about a dozen species have been added, every one of which bids fair to prove a valuable addition to the many beautiful Palms now in cultivation. Kentias are all natives of Western Australia and the adjacent islands, and belong to the pinnate-leaved section of Palms. As already stated, they are easily cultivated, and, assuming as they do a graceful, ornamental character at an early stage, they are well adapted for table decoration and other furnishing purposes, for which they may be freely used, as with ordinary care such treatment does not injure them. Seeds are easily imported, and soon germinate if sown in light, sandy soil, and placed on a hot-bed. For young plants a light loam with a little peat and sand may be used, and if kept in a stove temperature they soon make useful little plants. For larger plants loam with a little sand and well rotted cow manure may be used. During summer they delight in plenty of moisture, both at the roots and overhead. In winter less water should be given. Kentias are frequently attacked by red spider and thrips, for the destruction of which sponging with soapy water should be resorted to. For scale, an enemy to all Palms, I use petroleum, a wine-glassful to a gallon of soft water. With this the plants are syringed, and afterwards sponged over, by which the scale is easily removed, as the petroleum causes it to loosen its hold on the plant. Although included in the following list, there are several species which are natives of distinctly tropical parts, and therefore will require a stove for their successful cultivation; only those species that are natives of temperate countries being what are here recommended for greenhouse culture. With the exception of temperature, they thrive under similar treatment as regards soil, water, &c. Owing, perhaps, to some of the Kentias so called having received their names when seen only in a young state, and before there was sufficient material to allow of their correct naming, some confusion exists in their nomenclature, a great authority having separated them into no less than seven different genera. As, however, they are likely to be known in gardens for some time yet as Kentias, and a long string of synonyms could not fail to cause confusion, and perhaps disgust, we will stick to the old name, at least till science with her chopplings and changings compels us to accept her decision.

The following are those that are known in gardens:—

**K. BELMOREANA.** A graceful arching-leaved Palm, with long terete, shining, yellowish-brown petioles, which bear in young plants from 20 to 30 deep green strap-shaped pinnae. In a young state this is one of the most ornamental of Palms. Native of New South Wales, where it grows to a height of 35 ft., with leaves 6 ft. to 8 ft. long. Greenhouse.

**K. FOSTERIANA** only differs from the above in having bright green petioles, by which it may easily be distinguished from that species. A native of South Australia. Greenhouse.

**K. CANTERBURYANA.** The Umbrella Palm of South Australia and *K. australis* are both something similar to the first mentioned species, but are much more robust; light green and thicker in the petioles, which in *K. canterburyana*, are covered with whitish mealy scales. Greenhouse.

**K. GRACILIS** is a distinct species, having almost straight, stiff, guild-like petioles, bearing narrow linear pinnae, which are thinly arranged and almost straight, giving the plant a rather stiff appearance. A native of New Caledonia. Intermediate house.

**K. WENDLANDIANA.**—A magnificent Palm which is likely to prove an effective exhibition plant. It is a robust grower with stiff channelled petioles which are clothed with meal-like scales. The leaf segments are broadish and of an equal width to the tip, which instead of being pointed is toothed or jagged like the fin of a fish; bright green and slightly arching. Queensland. Intermediate house.

**K. MACARTHURI** resembles the last described, but is a much more graceful, finer, dwarf species. It produces offsets at the base by which it may be propagated. New Caledonia. Intermediate house.

**K. LINDENI** (*K. macrocarpa*) is a most striking Palm, and one of the best plants of recent introduction. It is a robust grower, with purplish-brown petioles and broad acuminate arching pinnae, which have a long bristle-like point. When young the leaves are of a rich blood purple, which gives the plant a really splendid appearance. New Caledonia. Stove.

**K. LUCIANI.**—*K. robusta* and *K. costata* are new introductions, which I have not yet seen only in a young undeveloped state. They are described as being valuable additions to our stove collections.

**K. MONOSTACHYA** (Areca).—The Walking-stick Palm has until recently been known as an Areca. It grows to a height of about 6 ft.; the stem is about as thick as the thumb, and is crowned with a head of graceful leaves, which are sheathing at the base, and divided into irregular, variable segments. A most useful Palm for table decoration. South Australia. Greenhouse.

**ARECA SAPIDA** and *A. Baueri* are by some called Kentias. They are well-known greenhouse Palms, and will stand a low temperature, the first being a native of New Zealand, and the second found in Norfolk Island. *A. sapida* may be distinguished by its narrow linear dark green segments, those in *A. Baueri* being wider and clothed at the base with mealy scales.

**PRITCHARDIA FILIFERA.**—This Palm, sometimes known as *Brahea filamentosa*, is another plant which may be recommended for greenhouse culture and outdoor work in summer. It has not long been known in gardens, a fact which is somewhat surprising, as the native country of this Palm, California, has been long since well explored by collectors, and so striking a plant could not have failed to attract the attention of even the most casual observer. It belongs to the fan-leaved section of Palms, and resembles in many points the well-known Sabal Palmetto, but is a much more desirable plant, being a freer grower and of a far more graceful character than that Palm. It is a tall growing Palm, specimens having been seen in San Francisco with stems at least 30 ft. in height, and which were crowned with a head of leaves measuring 20 ft. in diameter. The petiole is smooth and furrowed above, and bears a broad fan-shaped leaf blade which is split up into narrow arching segments, the edges of which are clothed with long curling silvery filaments which hang over and about the plant in great profusion, giving it a most graceful and beautiful appearance. Although found wild only in the south of California, yet from the fact of its being found thriving so far north as San Francisco, this Palm may be expected to prove of the greatest value as a subject for the sub-tropical garden, &c., and should thrive outside here with little more protection than that required by Fortune's Chamærops. There is no Palm of recent introduction more worthy of the attention of cultivators than this Pritchardia, and as it may be procured from the nurseries for a very



nominal sum, it is to be hoped that it may soon become as popular as it undoubtedly deserves to be. Unlike most Palms, *Pritchardia filifera* is very impatient of cramping at the roots, and never thrives unless it is liberally treated as regards pot room; in fact, the best plants that I have seen were planted out in beds of rich soil. Treated thus, and liberally watered and fed, they made astonishing progress, and the unusual vigour and rich green of their foliage were evidences of their delighting in such treatment. A mixture of light loam and good leaf-mould and sand with a sprinkling of rotten cow manure form a mixture in which these plants thrive. Plenty of water at all times should be given, care being taken that the drainage is all right, so that the water can pass away quickly. The syringe should be freely used for all Palms, especially when they are growing. For young plants an intermediate temperature will be found best, in which, if liberally treated, as above advised, they will soon make plants sufficiently large for the conservatory and out of doors in summer. Z. B.

#### CHRYSANTHEMUMS FOR EXHIBITION.

*Will Mr. Douglas describe correctly the method of thinning out the buds of Chrysanthemums so as to secure well formed flowers? Success in Chrysanthemum culture for exhibition depends mainly on the thinning process, and the whole thing wants showing clearly once and for all.—F.*

In order to grow Chrysanthemums well for exhibition, they must have unremitting attention the year round. No plants are easier to grow; but in no one instance out of twenty do they receive the attention they require or that their merits deserve. Probably in most cases cultivators are not to blame for this, because the busy time amongst such plants is from April onwards, when every hour, nay, every minute, is precious. I grow my own Chrysanthemums as follows: We fill a house with them 54 ft. by 24 ft., and it requires two cartloads of compost to pot them; I always prefer preparing the potting soil in December. It consists of four parts of turfy loam broken up, one part of rotten stable manure, one of leaf mould, and an 8-in. potful of pounded oyster shells is added to each barrow-load of the compost. This is well mixed together, stored away in a dry place, and is always ready when any repotting is required. About the same time that the compost is prepared we also put in the cuttings, selecting those that grow from the roots in preference to those that grow from the base of the stem, even if they start from the underground part of the stem. Some varieties throw up numerous shoots from underground in the form of root suckers; others form suckers of this kind very sparingly or not at all; and sometimes there is no choice, therefore stem cuttings must be employed. The only objection to them is their tendency to run to flower in May instead of developing strong shoots. Each cutting should be put in a small pot separately, using fine soil; the pots may then be plunged to the rim in some Cocoa-nut fibre refuse in a cold frame. There they remain until March, when most of them will be rooted, and those that are not should be placed in a gentle hot-bed where roots will soon be formed. As soon as the cutting pots are well filled with roots, the young plants must be repotted into a size larger pot and a stick put to each as soon as support is required. Some time in May the plants should be placed in their flowering pots and secured to sticks as they advance in growth. I put two plants in a 9-in. pot, or three into an 11-in. one.

**Disbudding.**—Each plant will produce three blooms, and about the end of August the flower buds form, or it may be as late as the middle of September. "Taking the buds" consists simply in watching them when they form, and when not larger than Radish seeds at once removing the growths which start from the stem close to the buds, and indeed all down the stem, taking care not to injure the buds or leaves left. If the stem growths (especially those close to the flower-buds) are not removed, the main flower-bud would

remain dormant and not run to flower at all. If these flower-buds—which form as early as the middle of August sometimes—are lost through allowing the shoots to overgrow them, all the best flowers will be lost. There is really no thinning process, as "F." suggests. At the end of every main growth, there should be one flower left and no more, and three growths only are allowed on a medium healthy plant, so that for the purposes of exhibition a 9-in. pot would produce six flowers, and an 11-in. one nine flowers. Each side growth would produce a flower larger or smaller according to the strength of the growth, and if allowed to remain as they ought to be, if very large bloom are not wanted, they come in usefully as cut flowers for vases, &c. The plants all through the growing period should be freely exposed to the air, but in our district we find it necessary to shelter them from the south-west winds, which come with hurricane force in September. Up to the first week in May it is necessary to shelter the plants under glass, but air must be admitted freely. We generally place the plants in their summer quarters about the first or second week in May, but this depends upon the weather. I remember putting out a fine collection of specimen Chrysanthemums on the 8th of May one year, and 8° of frost the night following sadly checked their growth for the season. About the second week in October the plants are removed under glass to bloom; but before doing so, if there is the least trace of mildew on the under-sides of the leaves, it is best to lay them on their sides and syringe the under-sides of the leaves well with soft soapy water, to which a liberal proportion of flowers of sulphur has been added. If frost threatens before the plants can be removed inside, it might be necessary to lay them on their sides and throw some mats over them.

When the plants are placed in the house they should not stand too closely together, and they should be as near the glass as possible. Some varieties will not produce well formed flowers at all unless they are quite near the glass. All that have loose, open flowers should have the best positions—such kinds, for instance, as John Salter, Bronze Jardin des Plantes, Queen of England, &c. The Chrysanthemum is a gross feeder, and requires liberal supplies of manure water after the flower buds are formed and until the flowers are fully expanded.

**Flower-dressing.**—After the flowers have been produced, and in order that they may have a fair chance at the exhibitions, they must be dressed. Some ardent young growers exclaim, "That is the very thing; we know they ought to be dressed, but we do not know how to do it." I well remember taking my first collection of blooms to an exhibition, thinking that I stood at least a fair chance for a place. On arriving at the building I showed my stands (a twenty-four and a twelve) to an old grower, who exclaimed, "With such fine flowers you would come in first if they were dressed." I was rather taken aback at this, as I had been dressing and working on my cut blooms from early in the morning of the previous day until ten or eleven o'clock at night. However, after some aid from another exhibitor, we considerably improved them, and the result was that I gained one of the prizes. I made two mistakes; one was that the wooden cups, with tubes attached for the flowers, were not deep enough, and I was afraid to remove the green centres or clusters of stamens in case I should have been accused of mutilating the flowers. First, as to the cups, they should be of various sizes from 1 in. to 1½ in. across, inside measure, and about 1 in. deep, with a stem attached to fit the water tube. Through the stem of the cup there should be a hole bored with a gimlet to allow the thickest flower-stem to pass through. The cup may be made of deal or any sort of wood. The cups being ready, also the stands with tubes filled with water, then cut the flower to be operated upon, remove all the leaves from the stem, so as to allow it to pass through the tube. Then with a pair of tweezers take away the badly shaped petals and green centres. Then begin at the centre of the flower and carefully ar-

range any petals that cross each other; the petals ought to incurve, and in many cases flowers will have open centres, and the object of the cups is to close the centres; this is done by pulling the stem down the tube, which presses the outer petals against the inner ones. When the flower is in its right place a bit of stem should be thrust up the tube to keep the stem firmly fixed. Some flowers do not require any dressing; to attempt it would be to spoil them. Take Mrs. George Rundle and the sports from it as models, and any flowers that are not up to their standard should be brought as near to it as possible by dressing.

**Seed saving.**—How are the flowers hybridised for seeds? asks "Girofle." The late Mr John Salter, of Hammersmith, was the only nurseryman who introduced new varieties of the incurved forms from seeds; he sent the plants from which he wanted to obtain seeds to Algiers to a correspondent there, who grew them and sent the seeds to Mr. Salter. It would be rather a difficult operation to hybridise the flowers and save seeds in England. J. DOUGLAS.

#### LINUM TRIGYNUM.

A MORE useful autumn, winter, or spring blooming conservatory plant than this Flax is hardly to be found. Its habit, the character of its foliage, the colour and form of its flowers, are unique at that, or indeed any season of the year. Years ago I used to grow quantities of this showy plant, though somehow it has dropped out of our houses of late. To grow cuttings or old plants fast and well a genial temperature is most useful to them early in the season. A temperature of 60° in a semi-saturated atmosphere suits it well. In such conditions it may be grown from January to May, stopping the plant several times during the growing season. This is of importance, as the *Linum* only flowers on the extremities of the shoots, and the more vigorous shoots that can be produced and well ripened during the season the more flower. Having thus laid the foundation of the plants in heat, they are gradually inured to the open air, so that from hence to October they may be placed in a sheltered position out of doors. Some were planted out and some grown in pots plunged up to the rims. The planted-out plants always made the finer leaves and generally the stronger shoots, but they did not, as a rule, flower so freely as those that were kept in pots plunged to or over the rim. The leaves on both sets of plants were a sight to see, so large and clean. The plants also grew with extraordinary vigour. So much was this the case that if the shoots were pegged down when the plants were placed in the open air, almost every bud would break into a vigorous shoot, so that thinning was necessary to prevent them growing into a perfect thicket. As to compost, the ordinary soil of the kitchen garden, with the addition of a little leaf mould and sand, was all the *Linums* had. And there are few better composts for these plants, either in or out of pots, than one of two-thirds fibry loam and one of leaf mould, with a fair percentage of gritty silver sand.

By the first of October at the latest, planted-out *Linums* should be potted up, left with the ball intact as much as possible, and placed in 8-in. or 10-in. pots, according to the size of the plant, taking care not to overpot them. Place them in a close pit for a few days till the roots get hold of the soil in the pots, then give abundance of air, or draw the lights off if the weather be mild. As soon as the plants have taken to the pots place them on a conservatory or greenhouse shelf, and treat them the same as other plants in the house. They flower best in a temperature ranging from 45° to 55°, and plants thus grown seem all flower. They must not be over-watered, neither must they be allowed to become dry nor placed in a draught, or too near to hot-water pipes. Anything that gives them a severe check not only mars the beauty of the leaves or causes them to fall off, but also seems to invite red spider to fasten and feed on the leaves. Of course those grown in pots may be lifted in October and go straight on to



the greenhouse stage or window garden. In colder localities almost, but not quite, such good results may be obtained by growing the *Linums* in cold frames either in pots or planted out. Through the earlier period of their growth the frames should be shut down close early in the afternoon, after a heavy overhead syringing; while from the middle of July and all through August to the middle of September advantage should be taken of every fine day to draw the lights clean off the plants. Some also keep the lights on by day, and throw a mat over the glass to exclude the sun, and draw them off at night to give the plants the benefit of the night dews.

Good results may be obtained with old plants, and almost equally good by throwing away all the plants after flowering and starting with cuttings. These, started say in January or February, and forced on in heat, may be grown into fine material for 6-in. or 8-in. pots by October. For the greenhouse shelf perhaps *Linums* never look better than in 6-in. pots, smothered with bloom and with foliage large and fresh free from red spider or thrips. D. T. FISH.

**Griffinia hyacinthina** is flowering strongly (or rather showing flower) now after having been in a cool house in deep shade since early May. The hint which I gained from THE GARDEN last spring as to its summer rest without heat or drought is evidently most valuable, and no one who tries it need fear for the results. As it is generally considered a shy blooming plant, no doubt the conditions under which it flowers have not been sufficiently known.—E. H. W.

**Rhododendron Lady Alice Fitzwilliam.**—As is pretty well known in trade circles, Messrs. Fisher, Son & Sibray, of the Handsworth Nurseries, Sheffield, have devoted much attention to the raising and hybridisation of greenhouse *Rhododendrons*, much of the glass at Handsworth being devoted to them. The best of their proved new sorts raised there within the last few years is decidedly Lady Alice Fitzwilliam. It is a cross between R. Edgeworthi and R. Gibsoni compactum, and is of a denser and more bushy habit than the former. The flowers are pure white, occasionally dashed on the outside of the tube with a faint streak of rosy pink, and are borne in trusses of from three to five, the individual flowers measuring generally 4 in. across, and often as much as 4½ in. As a conservatory ornament this variety will no doubt be valued as much on account of the delightful fragrance of the flowers as anything else, a few flowers being sufficient to scent the air of a whole house. A plant of it 18 in. high in a 7-in. pot bore between thirty and forty flowers. At Handsworth the plants are grown in cold greenhouses and cold unheated frames summer and winter, and the variety may consequently be described as at least half-hardy. It sets its buds freely, like others of its class, and will bear forcing into flower as early as Christmas, but is of course best in spring. This *Rhododendron* received a first-class certificate at South Kensington, and also a botanical certificate at Regent's Park.—J. S.

**Ferns and gas tar.** Let "F. T." (p. 253) get a few lumps of newly burned lime, put them into a bucket, and cover them with water, and let it boil well. As soon as it has ceased boiling, take a brush and put a good coating on the pipes, and also the board which has been tarred. This will destroy the injurious effects of the tar. If the latter has been put on thickly and comes through the lime, apply a second coating hot as before. JAMES SMITH, Watford.

**Diseased Gloxinias.**—Your *Gloxinia* leaves are suffering in the same way as *Gloxinias* received from various other places this summer. The disease is new to us, and though so serious in its effects we can make nothing of it. At first sight the ailment appears to be distinctly the work of some fungus, but in the microscope no trace whatever of a fungus can be seen. On holding the leaves to the light, certain translucent patches look like the work of some leaf-mining larva, but there are no larvae in the leaves and no traces of larvae. There are insect traces on the leaves, but whether these have anything to do with the perpetrator of the mischief, we do not know. In some of the worst diseases caused by fungi it is impossible (or next to it) in some states of the disease to detect the plasma of the parasitic fungus.

**Annuals in pots.**—At the autumn exhibition of the Reading Horticultural Society held recently, prizes were offered for the best collection of 24 distinct varieties of hardy annuals in pots, but the class was not well filled. The number of varieties required were too large to be had in good condition at this season, if not at any time. Had the class been for six or nine pots only, a good and interesting competition might have taken place. At some country shows held during the months of July and August it is by no means rare to find a class for six pots of hardy annuals capable of doing good service in the greenhouse. The following among others are suitable for this purpose, viz.: *Calendula officinalis*, Meteor, Campanula Loreyi and its white variety; Candytufts, crimson and new carmine; the double-flowered annual *Chrysanthemum* and *C. tricolor* Burridgei; *Collinsia bicolor* and *C. violacea*; *Convolvulus minor monstrosus*, *Dianthus chinensis*, double, and Heddeewigi; *Godetias* Lady Albemarle and Whitney, *Pyrethrum* Golden Feather; *Jacobaea*, crimson and magenta, dwarf German Larkspur, *Leptosiphon roseus*, *Linum grandiflorum*, scarlet; *Lupinus affinis*, Mignonette, new dwarf compact; *Portulacas*, *Sanvitalia procumbens*, double; *Schizanthus pyramidalis* Tom Thumb, *Silene pendula compacta*, and *Viscaria oculata cardinalis*. To these might be added *Antirrhinum* Tom Thumb, *Asters*, *Victoria* and dwarf bouquet; *Petunia*, French Marigold, dwarf; *Phlox* Drummondii, *Stocks*, and *Tropeolum compactum* Tom Thumb, all of which can be sown in the open air, and grown on to flower in pots. As a matter of course, some care and forethought would be required to have the subjects required in flower at the particular season when they are wanted. Whether it would be best to sow the seeds in the pots in which they are to flower and be exhibited, or whether they should be sown in store pans and transplanted is a matter of opinion, but one on which experience can throw much light. Our experience inclines us to the latter practice. The soil must be rich and rather light, the pots well drained; and when transplanted the pots should be placed out in the open air on an ash-bed, where some shade falls during the day, but not too near it to become drawn. No shelter will be required except from heavy drenching rains, to avoid damage to the plants.—R. D.

#### THE ANCIENT BRITISH HOMESTEAD.

FOR the last twenty years special attention has been directed towards the mode of life and surroundings of the races of men who formerly lived in this country. The works of Sir Charles Lyell, Sir John Lubbock, Prof. Boyd Dawkins, and many other authors, abound with curious and reliable data illustrative of this subject. Innumerable camps and ancient British habitations have of late years been opened up, the floors laid bare, and the earth carefully sifted. The operations have been constantly watched by antiquaries, zoologists, and other scholars, and every scrap of stone, bone, fabric, branch, leaf or seed preserved, so that Englishmen know fairly well what our ancient British precursors were like and how they lived.

It is unnecessary to give long references here; the journals of archaeological societies are full of evidences, but Professor W. Boyd Dawkins, in his recently published "Early Man in Britain," gives a brief summary of the ancient British homestead: "Their lines of smoke rising from amongst the trees of the dense virgin forest at our feet would mark the position of the Neolithic homesteads, and of the neighbouring stockaded camps which afforded refuge in time of need; while here and there a gleam of gold would show the small patch of ripening wheat. We enter a track in the forest, and thread our way to one of the clusters of homesteads, passing herds of goats and flocks of horned sheep, or disturbing a troop of horses or small short-horned oxen, or stumbling upon a swineherd tending the hogs in their search after roots. At last, on emerging into the clearing, we should see a little plot of Flax or small-eared Wheat, and

near the homestead the inhabitants, clad some in linen and others in skins." The peaceful occupations of the men are then described: "While the women are preparing the meal with pestles and mortars and grain rubbers, and cooking it on the fire, generally outside the house, or spinning thread with spindle and distaff, or weaving it with a rude loom."

The small short-horned domestic ox here mentioned is *Bos longifrons*, one of the animals upon which the ancient Britons lived. The men, although they could fight and hunt as well as farm, were by no means savages who lived on wild beasts, but, though somewhat rude, were yet in a sense cultivated men, who studied agriculture, had ploughs, hoes, and other agricultural implements, and made axes and knives of exquisite beauty and finish.

In the "dense virgin forests," described by Professor Dawkins, there were wild and dangerous beasts, notably the wolf and wild boar; the latter no doubt was at times hunted, and now and then consumed at meals, but the ancient Britons did not live upon it. Another beast was the wild bull (*Bos primigenius*), but this creature was very rare in the principal woods, and its bones have but once been found in an ancient British refuse-heap.

My friend Mr. Chas. Babington, Professor of Botany at Cambridge, who is as good an archaeologist as he is a botanist, has published a paper on a skull of *Bos primigenius* with a stone axe embedded in the frontal bone, and found in Cambridgeshire. Prof. Babington says: "Abundant evidence of the *Bos longifrons* having served as food for man has been found in Ireland as well as England, and Owen supposes them to have been domesticated by the ancient Britons, but until recently we did not possess any certain evidence of *Bos primigenius* having been hunted in England." When this bull was common here, man was only present in a few places at the south. Men did not make it rare by eating it; but as lions and hyenas were common, these latter animals probably reduced its numbers.

Did space permit a great deal might be written on the plants and animals of the ancient Britons, and their agricultural implements. Some accounts might be given of the wheat of that time, how it was reduced to flour, how baked into bread; of the flax, and the looms, spindles, and distaffs, the Apples, the Acorns, the Beech-mast, the joints of meat, the mode of cutting up and cooking; the ancient British house, the fire-place, the cupboard, the knives and the pots. The ancient Briton (though no doubt he could hunt as we do now) was not, as has been stated, a savage who lived on the produce of the chase.

W. G. SMITH.

#### BOOKS.

##### A DICTIONARY OF ENGLISH PLANT NAMES.\*

THE study of the common English names of plants has long been a favourite one with lovers of plants, and of late years a very large impulse has been given to the study by the excellent works of Cockayne and Dr. Prior, both of whom treated the subject in a more scientific way than it had before been treated. The present work is very much on the same lines, but has a wider range, because it takes in all the more local and provincial names of plants, and because it is not confined to the names of British plants, but includes many exotics which have been introduced long enough to have acquired a well-established popular English name. It is a work that we can thoroughly recommend to all who wish for the latest discoveries in the history of our plant names, and we are sure that all who consult it will be glad that the plan of the English Dialect Society is sufficiently elastic to allow of the pub-

\* "A Dictionary of English Plant Names." By J. Britton, F.R.S., and R. Holland. Published for the English Dialect Society by Trubner & Co.



lication of such a work in their lines of original glossaries. At present the work is incomplete, being only in two parts, from A to O, but the concluding part is promised during the present year. There is so much difference of opinion on the origin of many of our plant names, that we do not expect the present dictionary to be accepted as a final Court of Appeal, but in almost every instance of disputed derivation, where we have consulted it, we have had reason generally to accept the decision given, and where we could not quite do that to acknowledge from the authorities quoted that much was to be said on both sides. The authors show a very extensive acquaintance with old English literature, and this has sometimes led them to multiply the names apparently more than was needed, *e.g.*, they give all the different ways in which the name is spelled in different old authors; but this, if a fault, is one on the right side, because it insures that a reader will find the name of which he may require an explanation under whatever form he may meet with it in any old writer. The value of the book is much increased for botanical readers by an excellent Latin-English index, which gives the Latin name and then all the English names by which a plant is known or described.

## OBITUARY.

### MR. CHARLES LEE.

ONE of the best known and best esteemed of our leading London nurserymen ended an active and useful life during the past week (Friday, September 2). We speak of Charles Lee of the old and well-known Hammersmith firm, which, perhaps, of all the London houses has longest held a distinguished place. He was one of the young men spoken of by London in the following abstract from his "Encyclopædia," published in 1824:—

At Hammersmith is unquestionably the first nursery in Britain, or rather in the world. At the beginning of the last century it was a vineyard, and produced annually a considerable quantity of Burgundy wine. A thatched house was built in the grounds; the upper part occupied as a dwelling house, and for selling the wine; and underneath were the wine-cellars. The ground was taken by Messrs. Lee and Kennedy, the fathers of the present, or late occupiers of that name, and continued by their sons, who dissolved partnership in 1818, and the concern is now the sole property of Lee. This nursery owes its celebrity, in a great measure, to the late James Lee's knowledge in botany, and to his publishing the introduction to that science at a time when its principles were not generally diffused. Lee was patronised by a great number of the nobility and gentry, for his general knowledge in natural history, and for his sound sense and strong understanding. The nursery is now carried on by his son to greater extent in every department than any other nursery in Europe. J. Lee, jun., has four sons, whom he intends to bring up to the business in four separate departments: the seed business, the counting-house, exotics in houses and fruit trees, forest trees and hardy plants. Besides an extensive correspondence, and a vigilant attention to procure every new plant as soon as introduced by others, a great many plants have been introduced to the country directly by this establishment. Among the collectors they sent out for this purpose may be mentioned a person collecting Oaks and other plants in America; another, for eight years, at the Cape of Good Hope, in partnership with the Empress Josephine, collecting Ericas, bulbs, and other plants; and a man in South America. The whole concern, from its first establishment to the present moment, has been conducted with singularity and skill; no expense spared to procure new plants from abroad, and preserve and propagate them when received. The greenhouses are extensive, and a house 200 ft. long has lately been erected for fruiting the different sorts of Grapes, and another for Figs. The proprietor has grounds for the commoner descriptions

of stocks in different parts of the country: as at Bedford for stocks for fruit-trees and for Cherries; at Hounslow and Bagshot for stocks, and also for seedling fruit trees, and other commoner articles, &c.

Mr. John Lee, writing from the Royal Vineyard Nursery on the 7th inst., says: "My brother started from his house in Hounslow in his usual health and spirits to drive up to Hammersmith Nursery on business, and had not driven 200 yards when he dropped off his seat into the chaise and was dead instantly—his doctor says from sanguine apoplexy, but I think from heart disease as well. He was seventy-three years old last February, and had been connected with the Hammersmith Nursery over fifty years."

WE regret to have to announce the death of WILLIAM EDGUMBE RENDLE, of Westminster (formerly of Plymouth), who expired on the 3rd instant at Eastbourne, after a long and severe illness. He was born at Compton Giffard, near Plymouth, on February 10, 1820. He was engaged in several large mercantile pursuits, and was patentee and inventor of what is now known as Rendle's Patent Glazing, which is adopted by H.M. Government and all the leading railways, his latest and largest work being the Great Citadel Station at Carlisle. He was also successful in theatrical matters, and was partner with Mr. Augustus Harris at Drury Lane Theatre when the great piece, "The World," was produced. He was also lessee of the Imperial Theatre, Westminster, and proprietor of the Clarendon Hotel, Brighton. Mr. Rendle was the introducer of the tank system of heating, and, being of an inventive turn of mind, was continually developing some improvement in the construction of houses. Beginning with the plant protectors, not many years ago, he went from point to point with improvements in glazing till he obtained some of the largest contracts in the country, including, as has just been stated, many of those of the Government.

## BOTANICAL PRONUNCIATION.

WOULD it not be an excellent thing if, in your "Flowers of the Open Air," the botanical names of the plants were accentuated, so as to give their proper pronunciation? One very rarely finds two gardeners who pronounce the same word alike. What one would call *Enōthēra*, another will call *Enōthēra*; *Retinōspōra* sometimes becomes *Retinōspōra*; *Niphētos*, *Niphētos*; and they cannot all be right. How often one hears *Viola* instead of *Viola*; *Clematis* for *Clemātis*, and so on. Many clever gardeners quite ignore the final *e*—calling *nudicaulē*, *nudicaul*; *pratense*, *pratens*, &c. It may be said that pronunciation is of little consequence; but surely it is of as much consequence in using a foreign tongue as it is in using English. We should not like to hear a *Dāndēlion* called a *Dāndēlion*, or Traveller's Joy called Traveller's Joy. Perhaps the best way to make the pronunciation most generally understood would be to print it phonetically after the word in italics, thus *Weigela (ryggeela or rygheela)*, to prevent the *g* being sounded soft like *j*. This would go a long way towards removing some misconceptions as to the use of words, but it is of course impossible entirely to remove all mistakes and prejudices by this means. For instance, I once saw at a Leeds flower show a certain cut Rose labelled "Glory de John"! Well, I do not think the writer of that label could easily be convinced that he was wrong. F.

[We approve of your suggestions, and may carry them out some day, but in a different work.]

**Names of plants badly spelt.**—"A. R.," see p. 214, asks "should not secretaries to shows see that such matters are put right?" Now, secretaries have a great deal to do besides looking after the spelling of names, but perhaps the judges or others when coming across them might

obliterate the letters that are wrong, or the name altogether. Nothing to my mind looks worse than badly spelt names. Excuses may be made for bad or indifferent writing, but now-a-days when education is general, spelling correctly should be made the rule, and not the exception. I lately saw at the Manchester Show *Delabechia* spelt *Delebachia*. It was corrected, probably by the exhibitor himself, as the printer may have put the letters in the wrong place—by mistake, of course. At the same show I saw an *Erica Eweriana* *superba* labelled *E. uhna superba*, or very much like it, which was the cause no doubt of it being in the list of prize takers as *E. nana superba*. These things should, I agree with "A. R.," have some little consideration.—J. S. T.

**The Golden-leaved Alder** (*Alnus glutinosa aurea*).—Mr. Cornhill rightly speaks a word in favour of this bright golden-leaved Alder, and I would suggest to those about planting such a gem to place it in a well exposed position where as much light as possible can play upon it, and then I feel confident many will not be so disappointed with it as has been the case. It seems to be doing remarkably well in a garden adjoining mine, the golden-yellow foliage lighting up as it were the other shrubs and scenery. It may be added that these are planted on the top of mounds, forming a shrubbery planted on each side of the carriage drive, so giving a charming contrast to the green shrubs, and is indeed a feature both pleasing and attractive.—J. S. T. *Aigburth*.

## LATE NOTES AND QUESTIONS.

**A. Woolgate.**—The Crab you referred to was not received by us.

**Cracked Pears.**—What is the remedy for this? I have a young healthy-looking tree, planted two or three years since in a light soil with plenty of good loam, but every one of the Pears are badly cracked and wholly useless.

**DORRING.**  
**Glass structures.**—In our report on this department last week it was inadvertently stated that the gold medal for the best exhibition of hothouse and other horticultural appliances was awarded to Messrs. Lowe and Son, Manchester and Edinburgh, whereas Messrs. Halliday and Son, Manchester, took the prize.

**Open-air Vines.** In THE GARDEN (p. 403) is an article on "Vine Culture" by "Sylvestris." Could he inform me what was the average thickness of the wood for the first few years? Has he experimented upon Black Hamburgh, Gros Colmar, or Alicante? Can any other reader give any information on the subject? A. A. M. H. C.

**Protecting trees from rabbits.**—I propose to plant some land with young trees this autumn which adjoins a wood full of rabbits which belongs to a neighbour. Can any of your correspondents inform me whether there is any effective way of protecting the trees from rabbits other than by wire netting?—N. B.

**Plum leaves infested with fungi.**—A. S. Smith. The Plum trees at the back wall of the orchard house are suffering from a very bad attack of the fungus named *Puccinia prunorum*. The same fungus grows on *Rhamnus catharticus*. It is curious that the pot trees escape; they may possibly be younger and in better condition. No cures have been published, though it is probable that all diseased plants are susceptible of cure.

**House plants.**—Will some one tell me suitable flowers, bulbs, and grasses to grow in a house until next spring? I have no green-house or even hot-bed, and want to know how to treat my plants. I once saw bulbs that had been put in a sponge, and grew out; how would they be treated? and what sort of bulbs? What kind of grasses do people sow in saucers and baskets to look green through the winter? and is water or soil best to sow them in? What is the best kind of Ivy for the house? and how is it best started? Is there any other kind of twining plant suitable for growing in rooms that will be green in winter?—IGNORANCE.

**Pinching Pelargoniums.**—I have been keeping back my Pelargoniums to flower October 20. When should I leave off pinching back the buds for the flowers to open by that day? They are in a greenhouse.—M. C. Cornwall. [I will suppose that the Pelargoniums in question are zonal varieties. And if so, in order to have them in the best possible condition on the 20th October, I would discontinue pinching about the middle of this month. It would have been better if up to that period the plants had been in the open air, or better still, in a cold pit or frame, plunged in cinder ashes, but fully exposed, excepting during heavy rainfalls. When transferred to the greenhouse, about the time stated, the plants (particularly if the pots are somewhat small) should be watered about three times a week with "Florvita," in the proportion of two teaspoonfuls to a gallon of rain-water.—P. G.]

**Names of Plants.**—F. J. S.—*Salpiglossis sinuata* (annual).—C. L.—*Sparganium ramosum*.—*Clematis*.—J. Plumbago *Larpenae*; 2, *Agrostemma coronaria*.—G. S. S.—*Nicandra physaloides*.—A. T. D.—*Bryophyllum calycinum*.—F. R. M.—*Le Poivrier* or Pepper tree is *Schinus molle*, one of the *Anacardiaceae*.—*Subscriber*.—*Juniperus oxycedrus*.



## THE FLOWER GARDEN.

## THE LONG BORDER IN VICTORIA PARK.

I AM glad to see attention called to the herbaceous long border in Victoria Park; the "Special Reporter," commented on in "Notes from Norfolk," accurately describes the state of the border when he saw it, I have no doubt, as it was making straight for that kind of effect at the end of May. It is, as he describes it, "a huge mass of plants" arranged on the "stick-'em-in-anyhow" principle for the most part, and planted with little or no regard to good effect, or to the nature and requirements of the plants used.

The public have been so accustomed to seeing the bedding system carried out to perfection in the London parks, that it is only natural they should imagine that whatever is presented to them there is the best of its kind; so that a "Special Reporter" could scarcely avoid taking for granted that the border of hardy plants in question represented a good example of the use of hardy plants for border decoration.

The border described is in front of the shrubberies in the two eastern divisions of the park, and forms a continuous belt of plants nearly three-quarters of a mile long, a fourth or more of the border being visible from several points; it is separated from the walk, from which alone it can be inspected, by a belt of turf from 8 ft. to 30 ft. wide, in which pincushion beds are cut at intervals. In one or two places the border is level with the turf, but generally it rises in a rounded slope to the feet of the shrubs, from 1 ft. to 2 ft. above. The soil is light, and rests on a deep bed of gravel and sand; consequently it is a dry border, facing south, and sheltered from the north by houses and shrubbery. The plants I noticed in spring were *Arabis*, perennial Candytuft, and some smaller plants I could not make out; common *Daffodils*, double and single; broad-leaved *Saxifrage*, white and pale purple *Pinks*, doing very badly; *Pansies* nearly dead; a few clumps of *Hyacinths*, some weedy-looking *Composites*, a narrow-leaved *Iris* with yellow flowers, some clumps of the commoner varieties of German *Iris*; some plants which looked like *Trollius giganteus* very badly grown, and a fair lot of *Pyrethrums*, which would have made a good display if grouped in a few large clumps, instead of being dotted all over the border. A few *Lilies* were on the way, but there seemed to be no room for later flowering plants. At the end of May the whole of the plants seemed to be dying from want of water. A sloping border formed of light dry soil and exposed to the full sun is not the best situation for a good collection of hardy plants; had the wider parts of the border been first lowered to the level of the turf and plentifully manured before planting, the plants which prefer a moist soil would have had a better chance, however badly arranged; but a really first-class display could only be made by devoting the whole space now occupied by turf and small beds to herbaceous plants and bulbs, save and except 4 ft. or 5 ft. of turf nearest the walks. Were such a border stocked with even such plants as could be raised from seed, such as Sweet *Williams*, *Pansies*, alpine *Auriculas*, *Columbines*, *Antirrhinums*, *Wallflowers*, *Stocks*, *Hollyhocks*, *Carnations*, *Delphiniums*, *Campanulas*, *Primroses*, &c., with a few grand clumps of *Lilies*, *Phloxes*, *Pentstemons*, *Irises*, and *Gladioli*, and here and there groups of *Pampas Grass*, and pyramids, arches, and hanging festoons of *Clematis*, climbing *Tropæolums*, Sweet Peas, and *Bindweeds*, a display would be produced on which people would not turn their backs to look at the carpet bedding, as I saw them doing. Even people who care nothing for

gardening would scarcely pass without admiring a group of *Tiger Lilies* or *Lilium auratum* in full flower, or a clump of a dozen *Hollyhocks*, or of the old Steeple *Campanula*, or a mass of such *Phloxes* as *Gideon*, *Auguste Riviere*, *coccinea*, *Mons. Marin Saison*, and *Triomphe du Parc de Neuilly*, mixed with the chaster whites and whites with coloured eyes. It seems scarcely possible that the border in question is put forward as a test of the capabilities of hardy plants for garden decoration; but if so, one can only say of the designer, in the words of Queen Bess in the "Strand" burlesque of "Kenilworth," "That engineer has very much to learn."

J. DUNDAS.

[So much attention has been given, and intelligently and successfully given, to summer bedding in the London parks, that it is perhaps too much to expect that any change made in another direction should be the best of its kind. Even in places where hardy plants are made a speciality of it is rare to find a specimen of a good mixed border. The knowledge, taste, and above all a good stock of the finest things are so seldom found together, that good effects are rarely seen from mixtures. Borders half a mile long, with perhaps three dozen good things out of the many hundreds known, are not representative of what can be done, even if the few dozen kinds are made the most of as regards culture and arrangement. In the face of this every-day difficulty the best way is to pay more attention to things grown by themselves or in combination with other subjects, as in this way some good effects are obtained, and better culture is the rule. Even where the borders are good special culture of all the choicer things in 4-ft. beds adds greatly to the pleasures and resources of a garden. The borders in the London parks are not in any sense representative of good art in hardy flower gardening, and they can only be made so by an addition of skilled labour and resources, which at present are not available for this purpose.—Ed.]

## ALPINE PLANTS AT HOME.

THE following is a copy of a letter just received from Mr. Harvey, of Aigburth, a keen amateur in the cultivation of alpinæ:—

Edge Hall, Malpas. C. WOLLEY DOB.

"Pontresine, Aug. 27, 1881.

"At last I have found some rare and good plants, but at first I was in despair. The fact is, I am a month too late, and the summer having been dry the flowers are over sooner than usual; but in any year it is best to come before the mountain pastures are mown. After this, only the plants that grow in the bare stones in the highest regions are plentiful. Last week, however, I have found a district with some rare and beautiful plants not over. A high-lying district between Pitz Languard and the Val de Fair near the Bernina pass is rich in strict alpinæ, yielding amongst others the following gems in full glory, though just on the edge of going out of flower: *Androsace glacialis*, *Campanula cenisia*, *Eritrichium nanum*, *Dianthus glacialis*, *Saxifraga planifolia* and *stenopetala*, *Ranunculus glacialis*, *Gentiana imbricata*, *Papaver pyrenaicum*, *Cerastium alpinum* and *latifolium*, *Achillea moschata* (with perfumed leaves) and *nana*, and *Phyteuma pauciflorum*. These all grow in the bare stony wastes among the stones where there is no humus (or as to a few of them but very little), but where the melting glaciers keep their roots moist, and with them the not less beautiful though less rare *Linaria alpina*, *Geum reptans*, *Leucanthemum alpinum*, and many others. Lower down on the slopes and in the valley the most remarkable flower still in full beauty is the bright orange-coloured, almost scarlet, *Senecio abrotanifolius*, of which this valley is one of the

few habitats; but besides this, *Senecio carniolicus*, *Aronicum Clusi*, and *Gentiana bavarica* are still in flower and found plentifully. Plants which cover the ground, but are out of flower on the slopes descending from the high plateau, are *Anemone sulphurea*, *Daphne striata*, *Geum montanum*, *Gnaphalium Leontopodium* in flower still. This flower (the *Edelweiss*) I have rather an enmity to, because it usurps too exclusively the attention of the ordinary visitors. This place seems to have *Edelweiss* on the brain. The word is hardly ever out of your ears. One gentleman measures every bloom, and when he finds an unusually large one he takes it round the visitors in triumph, and he brought a very large one to me, asking if I had ever seen its equal. I told him to his gratification that I had never seen so fine a specimen growing wild, but added to his mortification that a few weeks since I had seen one perhaps larger in a Cheshire garden, meaning yours. *Artemisia Mutellina*, which the Germans call *Edelraute*, is also a pet with the German botanists, and is found in the same place; the silvery leaves are very pretty. A few other noticeable plants are *Lloydia serotina*, *Semprevivum*, *Wulfen* and *montanum*, and *Saxifrages* are numerous in all places. Every torrent is filled with *Saxifraga aizoides*, and *S. stellaris* is very pretty. The last week I have much regretted your absence, and I am sure you would have been delighted, especially with the quite singular beauty which the bare stony wastes, studded with the brightest jewels of the floral world, present to the eye, with a background of precipices and glaciers, and distant views of long stretches of valleys far beneath your feet into dim distance."

## CARNATION AND PICOTEE SECTIONS.

IT is at this season of the year that catalogues of Carnations and Picotees are sent broadcast through the land, and anyone looking into them will find that a collection of Carnations is divided into certain classes or groups, and probably the uninitiated find it hard to comprehend the significance of these terms. Those who grow Carnations in the border as border flowers for cutting from care but little for distinctions between bizarres and flakes; but with the florist who grows a collection for exhibition purposes it is a different matter, and he, when making additions to his flowers, finds it of great convenience to have the flowers set forth in classes. Besides, many persons who are fond of flowers are desirous of understanding the technical terms used by florists, and though we cannot place before them flowers an attempt is made to make the terms as plain as possible. There are two main divisions, and these are subdivided, each into three classes, some particulars of which will now be furnished.

In speaking of Carnations, growers and exhibitors divide them into bizarres and flakes—two main divisions. Bizarres are distinguished by having two colours on the white ground, and are generally more esteemed than the flakes, particularly when the colours are well proportioned, and of a rich and lovely hue, but as regards colours they vary considerably in all the classes, some being deeper and others paler in their tints; still, all are beautiful in contrast with each other. The bizarres having two colours on the white ground, it will be necessary to describe what are considered run petals in each class. In the scarlet bizarres there must be scarlet and white in every petal; any petal without the scarlet and white would be considered a run petal; for instance, a petal of scarlet and crimson, petals all of scarlet, all of crimson, and white and crimson, are all run petals.

In the crimson bizarres there must be rose and white in every petal; consequently any that are of crimson and rose, crimson and white, all crimson, or all of rose colour, are all run petals. In the pink and purple bizarres there must be pink and white in every petal; therefore all that are of pink and purple, purple and white, all purple, or all of







## THE ENGLISH FLOWER GARDEN.

**Poppy Anemone** (*continued*).

**CULTURE OF THE CHOICER SORTS.**—Although all the beauty of the Poppy Anemone in its brilliant variety of colour may be enjoyed by simple culture, especially in good or warm soils, it is desirable to give here what is considered the best way of growing the finer and named varieties, which have been favourite florist's flowers for a long time. Messrs. Vilmorin and Andrieux, writing to us from Paris (Sept., 1881), say that the growth "of the Anemone as a florist's flower in France is of ancient date. The finest were known to come from Caen and Bayeux, nearly 100 years ago, and it is there that the best in France are now cultivated." There is no better soil for the Anemone than a good yellow, gritty, or sandy and friable loam; but as in most gardens little or no choice is to be had, none need doubt that the choicest Anemones may be well grown in ordinary garden soil of fair quality enriched with decomposed cow manure or decayed leaf-mould. In the more loamy soils decayed old hotbed manure will do. In some very heavy clayey soils the cultivation of the plant cannot be successful without taking more trouble than it would be wise to give.

**PLANTING.**—In regard to planting, the florists of forty years ago had two seasons for doing this; one the middle of October, the other at the end of January. "The early vegetation of such roots as are left in the ground would intimate that the former is the most natural season, and undoubtedly October-planted tubers make stronger plants, throw up more flower buds, bloom earlier, and, when the season is favourable, mature finer blossoms than those that are planted in spring. The main drawback is that the blossoms expand before the frosts have ceased, and hence a larger amount of care and protection is necessary." It was generally held as a part of the florist's experience that a bed planted the first week in October would be in bloom about the second week in May; and as this is a period when severe frosts often happen the blossoms are injured if not protected. But it is important to remember that the best bloom is always from autumn-planted kinds, and the double ones should be planted in September in an exposed situation if possible, and even early in the month. Where the cultivation of the Anemone is seriously taken up it will be best to plant at several different epochs, particularly in the case of the single and semi-double kinds. We have had very fine blooms from late spring planting, and an autumnal bloom may be had by planting in midsummer. But the glory of the plant is as a brave spring bloomer, and we do not gain by forcing it to deviate much from its natural season.

Correct planting is a matter of much importance. Many persons have purchased Anemone and Ranunculus roots, and by planting them badly, failed. A bed of prepared compost should be made; it matters not where the position is, so that it is a subsoil well drained. A stagnant soil is hurtful to the Anemone, especially in a wet winter. The Anemone roots deeply, and the bed should be some 18 in. deep or more good soil. When planting, the surface of the bed should be raked level, and the bed marked in cross rows. Mr. Carey Tyso recommends a bed 3 ft. 4 in. in width, and five roots planted in a row, which will allow of each being 6 in. or 7 in. apart. "As the tubers are varied in form and size, the hand or a trowel should be used in making the holes, 2 in. deep and large enough to admit the root to rest evenly on the soil, avoiding much pressure, as the limbs of the tubers are often slenderly attached to the crown and are easily broken off." Anemone

tubers vary much in size and shape, according to the variety, and are "formed of irregular fleshy bunches, having a number of small protuberances called crowns. These crowns are distinguishable as tufted pieces, or obtuse points, often a shade darker in colour than the surrounding skin. They are frequently found in clusters near the centre, and sometimes singly at the extremities of the projecting limbs. They are easily recognised by the practised eye; but, as amateurs have been known to plant them upside down, some attention to this matter is needful. The base or lower part of the tuber is known by the remaining fragments of the fibrous root of the former year, unless, indeed, they have been very carefully cleared away. The direction to plant the right side upwards seems trite, but is not superfluous."

In the days when the Anemone was much more of a florist's flower than it is now, it was customary to spread over the surface of the bed 2 in. of half-decayed leaves for a protection against frost. The florist dreaded the effects of frost on his Anemones, Ranunculus, Tulips, &c., and made provision to mitigate its effects. The surface covering of leaves was placed on the bed for this purpose; but it was necessary when the leaves commenced to come through the soil to liberate rising foliage as the decaying mulch, coming into combination during wet weather, and becoming matted together when dry, would injure the leaves. The surface over the plants should be broken fine, or pressed as might appear needful. Should the protecting material be thought untidy as the spring advances, it may be carefully drawn off.

Thinning the flowers was done with advantage when the Anemone was an exhibition flower, like the Tulip, as some of them would show signs of defectiveness in their formation; some of them would become blind, or without the complement of centre petals, that give so much symmetry of appearance to the double forms, and these were pinched off to strengthen the remainder. Weeding and watering are two important matters of detail. On the rich soil of the beds weeds will be certain to grow with vigour, and it is obvious they must be plucked out, and the surface of the bed kept stirred and tidy in appearance. The Anemone is a moisture-loving plant, and water should be given freely in dry weather, giving a good soaking when it is administered.

When the roots show signs of ripening and the foliage decays they should not be neglected. If drought prevails water should be given at times, so that the roots be fully prepared by maturation for service another year. At the end of July, or in August, they should be dug up, and put into boxes with some soil attaching to the roots, and put away in a cool, dry place of safety for planting out another season. The strongest can be divided, and in this way a collection is extended. The roots should be looked over occasionally during the winter to see that they are in good condition.

**A. fulgens** (*The Scarlet Windflower*).—The Scarlet Windflower is a native of the south of France, where it occupies but a very limited area, and that for the most part cultivated land, especially in vineyards. Although it is nearly related to Anemone stellata (Lamarck), there appears to be quite sufficient ground for considering it a distinct species, as Gay did when he described it as *A. fulgens*. In fact, the localities in which *A. fulgens* and *A. stellata* are found are far distant from each other, and the seedlings of *A. fulgens*, although very often distinct from their parent, in no way ever revert to *A. stellata*. On the other hand, it seems to be perfectly certain that the plant known as *A. Pavonina* is only the double-flowered form of *A. fulgens*, as its roots, leaves, and other

characters are perfectly identical with those of *A. fulgens*; and, moreover, it frequently turns up among seedlings of the latter, and is sometimes even intermixed with it in a wild state. As *A. Pavonina* yields no seed, and is propagated only by roots, the reason is obvious why it never under cultivation reverts to *A. fulgens*. The Scarlet Windflower may be considered to be perfectly hardy, inasmuch as it has been known to withstand, in the open border, the severest frost of the last ten or twelve years; it is scarcely, indeed, if ever, injured by mere cold, but stagnant moisture is very detrimental to it. No hardy spring flower with which I am acquainted can compete with it as regards brilliancy and colour, which, when lit up by bright sunshine, becomes perfectly dazzling. In good, well-drained soils it will succeed anywhere, but it thrives best in a rich loam on a northern aspect and in a somewhat shaded situation. To insure success, it should have a liberal supply of manure incorporated with the soil, which should be mulched with stable manure before frost sets in. Division of the roots is the surest and most rapid way of propagating it, as it is liable to sport if raised from seeds. Seedlings, as a rule, lack the bright colour and the substance of the parent plant, while some will become double, and resemble, more or less exactly, *A. Pavonina* as grown in gardens. Roots of this Anemone may be transplanted almost all the year round, although the resting time extends only from June to August; but in order to insure early and good flowers, they should be planted as early as possible in the autumn. Some leaves will make their appearance in September or October with a rounded three to five-lobed outline; these will be succeeded in January by finely and deeply-cut leaves, and soon afterwards by flowers. A good bed of well-grown plants of *A. fulgens* in full bloom is a gorgeous sight; but it is not only useful for out-door decoration alone, inasmuch as the cut flowers will be found to expand beautifully in water, and last for a week or more if cut when just coming into bloom and kept in a moderately warm room.—H. V.

In the extensive experiments made by M. Henry Vilmorin in the culture and propagation of this plant it was found that many of the seedling plants were not of the brilliant colour so remarkable in the true and finest strain, but of a red with a shade of brick in it. We have seen many of these plants which were carefully separated from the pure stock. They are singularly alike in hue, and manifest no tendency towards *A. stellata*. On the other hand, plants of the true colour are raised in this way, and sometimes remarkably fine ones, but seed is, nevertheless, not to be depended on for reproducing the plant in its finest form.

**A. hepatica** (*Common Hepatica*).—An exquisite flower of early spring, hardy everywhere, not fastidious as to soil, though it loves a deep loam. In positions somewhat sheltered, and where the soil is porous, the foliage will usually stand well through the winter. The Hepatica is a deep rooter—indeed, having regard to the shallow nature of its crowns, few plants send their roots deeper into the soil; hence it thrives so well upon made banks and rockwork, and especially likes positions where moisture will not lodge about its crowns. It will do as well as Primroses or Violets in any good garden soil, and where left alone, and not ruthlessly dug about or cut with the hoe, or often lifted and pulled to pieces, will make tufts strong and broad. Clumps of the rich-coloured blues and reds when a mass of bloom are in the month of March exceedingly beautiful. Few plants are more impatient of frequent division. The best plan is to put a young plant into good soil, and let it remain until it has become a strong clump—this would



give perhaps twenty or more single crowns—then plant again, allow these to remain a few years, and then re-divide. Thus a good stock may be obtained. The Hepatica is a native of many hilly parts of Europe and also of North America. The best known kinds are the double red and single blue, both amongst the hardiest of the section. Then there are the single white (a charming sort for bouquets), single red, double blue, rich in colour, and always scarce Barlowi, evidently a rich-coloured sport from the single blue; there is a single red known as splendens; lilacina, a pretty mauve kind; and some others. Every variety of the common Hepatica is worthy of care and culture. Is it possible to imagine a more beautiful feature than we may produce by planting a mixed edging of the various colours round say a bed of dwarf American plants? It is but one of many ways in which we may tastefully use them. Usually found in copses and half-shady positions these will be found to suit it best in a cultivated state also. Where plants and space are to spare, there would be little trouble in naturalising this in any copse or among bushes, or in a thin shrubbery—anywhere, in fact, the plants would not be overrun by larger things. Mr. Frank Miles, who has been very successful in raising seedlings, describes his practice as follows:—

**HEPATICAS FROM SEED.**—Sow the seed directly it is ready to fall, in light sandy loam. If it once gets dry before sowing it is unlikely to germinate. Put flat on the soil slates or bricks. Slates used for tiling are the best; they will not then require either watering or weeding. In October or November the seeds will begin to germinate. Remove the slates and put the boxes under glass without any heat. By spring time every seed will have germinated. During the summer keep the seedlings in a shady place. Some will then make their first leaf and probably bloom the following spring, but from the time of sowing the seed it will take three years before the plants show their free character and blossom well. I adopt exactly the same treatment for Hellebores. I owe this system to Mr. F. Gibbons, of Bramcote, near Nottingham, one of the cleverest herbaceous plant growers in England.

**A. japonica** (*Japan Anemone*).—A tall, autumn-blooming species, 2 ft. or 3 ft. high or more, with fine foliage, the flowers large and rose coloured. The variety named Honorable Jobert, with pure white flowers, is a beautiful and effective plant. Both should be cultivated where supplies of cut flowers are required in autumn. The white is a sport from *A. japonica*, and is a more valuable plant than the type. Both are first-rate plants for the flower garden, for groups, borders, or the wild garden. By having them in various situations, some on a north border, some on a warm one, the bloom may be prolonged. The white form is charming in the shade of a wood. Various hybrids raised between the Japan Anemone and *A. vitifolia* were obtained at Chiswick, but they appear to have been lost for the most part. Any of them we have seen were not so good as the type, and the best of all, the white. Some suppose that the white is the original form of the plant, and we think with good reason. As to propagation, every bit of the root grows when divided. A rich soil is desirable for these plants.

For greenhouse purposes, "Brockhurst" writes: "We keep a stock of good-sized plants of it in the reserve garden, potting them when the buds are well formed, and then place them in the conservatory or cool greenhouse, where they bloom very freely, and are even more beautiful than those in the open ground. By a little management it is easy to have these Anemones in flower in the conservatory for nearly two months. For dinner-table decoration it is also exceed-

ingly useful, either in pots or in the shape of cut blooms. The latter last fully a week in water if cut when freshly opened. It is perfectly hardy, and needs no skillful cultivation." "*Anemone Honorable Jobert*," according to M. O. Frébel, "is not a garden hybrid between *A. vitifolia* and *A. japonica*. The variety originated at Verdun-sur-Meuse in the garden of M. Jobert. He obtained it from a large tuft of the old *A. japonica*, with red flowers, from which plant a root branch flowered with pure white flowers.

The uses of the various forms of the Japan Anemone are various and important—borders, groups, fringes of shrubbery, and here and there in half-shady places in woods and by wood walks. One of the plants best worth growing for affording cut flowers.

**A. nemorosa** (*Wood Anemone*).—This native plant adorns our woods in spring, and also those of nearly all Europe and Russian Asia. It is so abundant in the British Isles, that there is little need to plead for its culture. There are double varieties, and the colour of the flower is occasionally lilac, or reddish, or purplish. Flowers from March to May; white, and reddish outside. Height, 6 in. Division.

The sky blue variety of the Wood Anemone (*A. Robinsoniana*, Hort.) has become a very much-sought-after plant of recent years. It is a plant of easy culture and of peculiar beauty, especially if seen as the morning or noon-day sun is on the flowers. This plant is fitted to grace a ledge of the rock garden as a colony or wide-spreading tuft. Also for the margins of borders, as a ground plant beneath taller subjects, forming a carpet for beds of choice shrubs with ample space between, in the small beds beneath standard Roses, and also for the wild garden, and dotting through the Grass in the pleasure ground in spots not mown early. In this case some taste should be exercised to get the groups or colonies of easy natural outline. After a time the plant will take care of itself.

The Rev. H. Harpur Crewe writes as follows concerning *Anemone Robinsoniana*: Of a numerous and very beautiful family, this is, to my mind, the undoubted queen. There is a gorgeous splendour about *A. fulgens* and *Pavonina*, and a dazzling beauty in *A. stellata* and *coronaria*; there is much delicate grace about *A. bracteata*, *trifoliata*, *apennina*, *blanda*, *sulphurea*, *alpina*, *nemorosa*, and *narcissiflora*; we all admire the purple and silk in which *A. Pulsatilla* and *vernalis* love to clothe themselves, and seldom tire of gazing at the golden sheen of *A. palmata* and *ranunculoides*; *A. japonica* and *vitifolia*, and their varieties and hybrids, have much pleasant autumnal brightness; but, to my mind, all fade before the simple and innocent loveliness of *A. Robinsoniana*. Most botanists seem to agree that, though in many respects very distinct, it is a variety of the Wood Anemone, *A. nemorosa*. It is a much dwarfer plant, blooms later, and both leaves and flowers possess more strength and substance; but its distinguishing characteristic is the pure, pale, cerulean blue of the inner surface of its petals. I know of nothing more exquisitely lovely than a fully-expanded patch of this beautiful flower on a bright spring morning. It is a rare British wild plant; I know of its occurrence in Norfolk and Essex, and I believe it has also been found in Kent, Sussex, and Oxford. It was practically unknown to the general public till a few years ago, when Mr. Robinson found it growing wild, and, struck with its marvellous beauty, so frequently spoke of its charms that it became a general favourite, and, in compliment to its champion, took the name of *A. Robinsoniana*. This name was first given it in a garden in a northern suburb of London.

**A. palmata** (*Cyclamen-leaved Anemone*).—A very distinct kind, with leathery leaves and large handsome flowers, of a glossy golden yellow, only opening to meet the sun. A native of North Africa, Spain, and other places on the shores of the Mediterranean, this charming flower requires and deserves a little more attention than most of its cultivated sisters. It should be planted in deep turfy peat or light fibrous loam with leaf-mould. It should not be placed in positions on the face of rocks suited for Saxifrages and many other plants that are content with mere crevices, and drape the face of the rocks with the slightest encouragement, but rather on level spots, where it could root deeply and spread into firm tufts. There is a double variety, *A. palmata* fl.-pl., and a white one, *A. palmata* alba. Flowers in May and June, 6 in. to 14 in. high, and is propagated by division or seeds.

**A. Pulsatilla** (*Pasque-flower*). Though sparsely distributed in Britain, this fine old border plant is a true native, and when it does occur on a bleak chalk down, it is generally freely dotted over the turf. The position is usually such as to suggest the aptness of the name Windflower for the family generally. There are few sights more pleasant to the lover of spring flowers than to see its purple blooms just showing through the hard Grass of a bleak down on an early spring day. The plant is much smaller in a wild than in a cultivated state, usually having a solitary flower. In the garden it forms rich healthy tufts, and flowers more abundantly and vigorously. There are several varieties, including red, lilac, and white kinds, but these are now rare. There is also a double variety. It prefers well-drained and light, but deep soil. Flowers in March, April, May; purplish. Height, 3 in. to 12 in. Propagated by division or by seeds. A border or edging or rock plant.

**A. ranunculoides** (*Yellow Wood Anemone*).—Not unlike the Apennine and the common Wood Anemone in habit, this species is so very distinct in its clear golden flowers, that it is well worthy of cultivation even by the side of the most admired kinds. It is a South European species, and apparently is not so free on the generality of our soils as the Apennine *A.*, but when grown into well-established tufts on a light or warm and well-drained soil, it blooms in a way of which those who have merely seen isolated plants or figures of the plant can have no idea. I have not found it do well on clay soil, but on chalk soil it seems to grow as freely as the common Crowfoot. It is quite charming for association with tufts of the Apennine or the Wood Anemone, the Pasque-flower, any of the varieties of *A. Hepatica*, the Aubrietias, and like plants. It is among the naturalised group of British plants, and grows in a semi-wild condition in Herts, in Notts, and it is also reported to occur in several other counties. Flowers in the end of March and beginning of April. Height, 4 in. to 6 in. Propagated readily by division.

**A. stellata** (*Star Windflower*).—This native of Southern Germany, France, Italy, and Greece, if not so showy, is quite as beautiful as the common Anemone. The star-like flowers, ruby, rosy purple, rosy, or whitish, springing from the much dissected leaves, vary in a very charming way, and usually have a large white eye at the base, which contrasts agreeably with the gay or delicate coloration of the rest of the petals, and with the rich brownish violet of the stamens and styles that occupy the centre of the flower. It is not so vigorous in constitution as the Poppy *A.*, and requires a little more care than that does, but this will only make it the more interesting to all who love variety in their collections of hardy plants. It likes a sheltered, yet warm position, a light, sandy,



well-drained soil, and seems to make little or no progress on heavy clay soils. It is suitable for association with the choicer kinds of Anemone on the rockwork, the mixed border, and the choice spring garden, and should be grown in every garden where spring flowers are appreciated. Here, as in the case of the finely-coloured Poppy Anemones, the best way will be to select and increase certain fine forms. It is the more desirable in the case of the Star Anemone, because it does not do well on all soils. Where the soil and district suits the plant, it is well to encourage it. Mr. Ellacombe, of Bitton, speaks highly of the white variety: "At first it is rather stained with purple, but when fully out it is a pure white star, with pale purple under petals. This with the black eye and the pretty foliage make it a striking flower, and a very good addition to spring flowers." Flowers in May. Height, 10 in. Propagated by division or by seeds. Sometimes known as *A. hortensis*.

*A. sulphurea* is a beautiful soft yellow form of the Alpine Windflower (*A. alpina*).

*A. sylvestris* (*Snowdrop Windflower*).—A free and handsome species, growing vigorously on almost any soil, the white flowers, as large as a crown-piece, being freely produced over a mass of fresh green leaves. A native of Siberia and Central Europe, it is perfectly at home in this country, and should be grown wherever first-rate border flowers are appreciated; it will associate well with the Alpine Windflower, and plants of like size, about the lower parts of the rock garden. Being naturally a native of the grove, it will be found perfectly at home along our wood walks and half wild spots, in shrubberies. The aspect of the drooping unopened buds has suggested its English name—the Snowdrop Anemone. Flowers in April and May; pure white. Height, 1 ft. to 15 in. Propagated readily by division of root.

The previously named Anemones are the most beautiful of the family, which, however, contains many other interesting and useful plants. These, from their rarity, slowness of growth, or from various other causes, are only enumerated here: *A. acutipetala*, *A. alba*, *A. baldensis*, *A. nemorosa bracteata*, *A. collina*, *A. dichotoma*, *A. Halleri*, *A. Hudsoniana*, *A. montana*, *A. multifida*, *A. narcissiflora*, *A. Nuttalliana*, *A. obtusiloba*, *A. ochotensis*, *A. patens*, *A. pennsylvanica*, *A. Popeana*, *A. pratensis*, *A. rivularis*, *A. scaposa*, *A. sibirica*, *A. thalictroides*, *A. trifoliata*, *A. virginiana*, *A. vernalis*. There are also tender species not included here; most of the above are of easy culture with the exception of the alpine species, like *A. vernalis*, which are slow and require to be carefully grown in fully exposed spots in moist, gritty soil.

*A. thalictroides* (*Thalictrum anemoides*).

*A. vitifolia* (*Vine-leaved Anemone*).—As regards mode of growth and flowering, this closely resembles the Japanese Anemone before alluded to, but is much more downy, and it flowers a fortnight earlier than *A. japonica*. It is a native of the moist shady valleys of Nepal, where it is said to be one of the commonest and most beautiful of all wild flowers. The name *A. vitifolia* occurs in many catalogues and on labels, but we have not often seen any plant under the name that differs from what is known as *A. japonica* or one of its forms. A plant in Mr. Elwes' garden has the leaves simple and Vine-like, as the name implies, whereas the white *A. japonica* has the leaves compound with the exception of a few root leaves. *A. vitifolia* is earlier in flower, and the blossoms not quite so large, the white having a slight tinge of pale purple outside. It really is in no way better than the white Japan Anemone, if so good; they are close allies, and there is some reason to believe the large white kind

to be the original type, and the red forms sports from it, the contrary being the usually accepted notion. *A. vitifolia* was in cultivation before Mr. Gordon raised a number of hybrids between it and *A. japonica*.

*Angelica*.—Bold growing plants of the Celery Order, which would be of some use for their form had we not so many finer hardy plants still in the same Order. One is a native of our woods and river banks, and the other is a well known plant grown in most kitchen gardens.

*Anisodus luridus*.—A hardy perennial of the Solanum family from Nepal. It has greenish yellow bell-shaped flowers and ample bright green foliage. Of no garden value. It is also called *Scopolia lurida*.

*Anomatheca cruenta*.—A pretty and distinct South African bulbous plant growing from 6 in. to 12 in. high. The flowers are about  $\frac{1}{2}$  in. across, of a rich carmine crimson colour, three of the lower segments being marked with a dark spot. They are produced in loose clusters on slender stems overtopping the narrow sword-shaped foliage. It is quite hardy on many soils, but in other places it should be planted on warm slopes of rockwork, in very sandy dry soil, or on warm borders among the smaller and choicer bulbous plants; the bulbs should be planted rather deep. In many soils it increases rapidly without attention.

*Antennaria* (*Cat's-ear*).—A small genus of Composites, the cultivated species of which are all perennial, *A. margaritacea*, the Pearly Everlasting, is a North American plant, growing about 2 feet high; the flowers, produced in broad flat clusters, are white and of a chaffy nature, hence are used for winter bouquets in a dry state, and are also dyed in various colours. The Pearly Everlasting, though one of the oldest and commonest plants in our gardens, is not worth a place for any purpose. It does not yield the flowers of the true Immortelle wreath, which are those of a much dwarfer plant (*Gnaphalium arenarium*). *A. plantaginifolia*, another North American species, is an unimportant plant for the garden. The Mountain Cat's-ears, *A. dioica* and *A. alpina*, and varieties *minima* and *tomentosa*, are neat-growing dwarf plants with white downy foliage, hence are largely used as carpeting plants in masses. All are of the simplest culture in any ordinary soil in exposed positions. These are good rock-garden plants, and the pretty little rosy heads of one form of the Mountain Everlasting may be seen in the cottage gardens of Warwickshire. These last kinds only grow a few inches high, and are very easily increased by division. *A. tomentosa* (Hort.) is a plant of a similar character that has been much used as a dwarf silvery plant in the flower garden. It is hardy and of easy increase and culture in bare spots.

*Anthemis* (*Camomile*).—Of the numerous kinds of these in cultivation there are but few worth growing. *A. Aizoon* is a dwarf silvery rock plant—from 2 in. to 4 in. high, having small white Daisy-like flowers. Its chief beauty is the leaves, which are covered with a white downy substance. It should be grown in the rock garden in exposed places. *A. Kitaibeli* is a pretty object in the mixed border. It grows rather tall, and requires to be neatly staked, for its large, pale, lemon-coloured, Marguerite-like flowers are very showy. *A. tinctoria* is very similar, and both are excellent for cutting. The double flowered form of the Corn Camomile (*A. arvensis*) is sometimes cultivated among annual plants. Lasting, as it does, a length of time in water, its flowers being double and pure white, the flowers are useful for cutting.

*Anthericum* (*St. Bruno's Lily*).—A large genus of the Lily family, containing but a few species hardy in this country. These are the European kinds, some of which are

among the most beautiful of hardy flowers, and well worth cultivating in every garden.

*A. Hookeri* (*Chrysobactron Hookeri*) is a showy perennial, growing from 1 foot to 20 in. high. It flowers in early summer, the blooms being bright yellow, nearly  $\frac{1}{2}$  inch across, freely produced in racemes, 3 in. to 5 in. long. The leaves form dense tufts in ordinary soil, but the plant grows best in one that is moist and deep, such as an artificial bog. A native of New Zealand.

*A. Liliago* (*the St. Bernard's Lily*).—This grows from 1 foot to 2 feet high, producing single, sometimes branched flower-spikes that bear numerous pure white flowers in early summer. It is known also as *Phalangium Liliago*. *A. ramosum* has the flower-stems about 2 ft. high, much branched, and bearing small white flowers; it has narrow Grass-like leaves, and the plant soon grows into large tufts. It is sometimes called in gardens and nurseries *A. graminifolium*.

*A. Liliastrum* (*St. Bruno's Lily*).—A most graceful alpine meadow plant. It requires to be planted in deep free sandy soil, and in early summer throws up spikes of snowy white, Lily-like blossoms. In dry soils a good mulching with rotten manure would be a great help to it, and in early spring the plants must be protected from slugs and caterpillars, from attacks of which they are liable to suffer. It is propagated by division of the roots in autumn, which is the best time to plant, or it may be raised from seed. It usually grows about 15 in. high, and is an excellent plant for choice borders. It would look better still as a good colony or group in an open space between dwarf shrubs. Where plentiful it would be an interesting subject to naturalise in a Grassy place. This species is also known under the generic names of *Paradisaea* and *Czackia*.

The major variety of the St. Bruno's Lily has much larger flowers (2 in. across) than the type, and possesses the peculiarity of sending up large single flowers from the root. These open before the flowers on the spike and are larger, resembling the white blooms of a *Pancratium*. Generally one solitary bloom of this kind grows on each plant at the root and far below the spike, and it seems as if strange flowers appeared in the bed. This peculiarity of the plant points to it as distinct from the ordinary type of St. Bruno's Lily. It grows 3 ft. high in good soil, and is a fine border plant, but though many think highly of it, the species is more elegant in form and to us more precious.

*Antholyza*.—A genus of bulbous plants of the Iris family, numbering about a dozen species, all natives of the Cape of Good Hope; of these only four are worth cultivating. These have narrow, erect, Iris-like leaves and flower-spikes that overtop the foliage, bearing numerous flowers of a bright red, though they are not very attractive on account of the flowers not expanding sufficiently. The names of these are: *A. aethiopica*, *A. ringens*, *A. bicolor*, and *A. Cunonia*. The latter is a distinct plant, but the others much resemble each other. They are quite hardy if planted in a warm, sheltered border thoroughly drained. The soil should consist of a good sandy loam enriched by well decayed leaf-mould. The plants may be propagated by the offsets or small bulbs which are annually produced in numbers from the parent bulbs or by seeds, which in favourable seasons are freely produced. These should be sown as soon as ripe in light soil in an ordinary hot-bed, where they will germinate the following spring. In the current summer the seedlings should be planted out and treated in the same manner as mature bulbs. It is advisable to lift the plants every autumn, so as to separate the small bulbs. This should be done about the end of August, and the bulbs



should be replanted in October and November, or may be delayed till February. A handful of litter over the bulbs during winter would be the best way to ensure the safety of the plants. *Watsonia Meriana* and others are known in some gardens as species of *Antholyza*, but they correctly belong to *Watsonia*.

**Anthyllis** (*Kidney Vetch*).—A genus of the Pea family, of which there are some half a dozen species in cultivation; few worth growing. *A. montanus*, the Mountain Kidney Vetch, is a plant seldom seen in our gardens, though a very hardy rock plant. It is very dwarf, about 6 in. high, the leaves being pinnate, and nearly white with down. On good light soils it grows larger. The pinkish flowers are produced in dense heads, rising little above the foliage, and forming with the hoary leaves pretty little tufts. This plant is desirable for every kind of rockwork, but chiefly valuable for its power of thriving on stiff, cold, and bad soils. Resisting any cold or moisture, it is peculiarly fitted for a position among the dwarf plants in the front rank of the mixed border. A native of the Alps of Europe. *A. erinacea* is a singular-looking, much branched, tufted, spiny, almost leafless shrub, about 1 ft. high, with purplish flowers. *A. Vulneraria* (Woundwort), a common native plant, is pretty, and well worth growing in a mixed border or on dry banks. There is a white-flowered variety and another red.

**Anticlea** (*Zygadenus*).

**Antirrhinum** (*Snapdragon*).—A distinct family of northern plants, by far the most popular of which is the handsome *A. majus*, the common Snapdragon. Like the Wallflower, this claims a place from the facility with which it may be grown on old walls and ruins, or even on the tops of walls far from old. Had we but the common variety, it would be well worthy of our attention from this habit, but when it is considered how many beautiful striped, and self-coloured, and flaked, and mottled, and delicately dotted kinds are now abundant in gardens, and raised from seed as easily as Grass, few will doubt the claims of this plant. The varieties have been much improved of late years, and will produce from seed a charming and profuse variety of brilliant colours, the white-throated and some of the striped varieties being exceedingly handsome. The Tom Thumb varieties are useful for small beds, and even for the rock garden where space is to spare. A good strain only should be grown, as it is waste of time to cultivate inferior forms; and now that a preponderance of striped flowers is certain to occur in a good strain, that is an additional reason for having a plantation in a garden.

But self-coloured kinds should be selected as even more important than striped ones, giving a better effect in groups or masses. Cold wet springs have an injurious effect on old plants grown in a cold, wet soil. On the other hand, plants in a light, drier soil do wonderfully well; and really very fine specimens can often be seen in gardens in full bloom. Those who have a wet, cold, uncongenial soil will do best to raise plants in the autumn, winter them in store boxes in cold frames, and plant them out in March and April, when the weather is favourable. When those who treat the *Antirrhinum* as a biennial lose their plants through the severity of the winter, they should raise them as annuals. Hard frosts following a wet autumn are destructive to Snapdragons. We saw in a nursery a few days ago some large beds in full bloom of very fine *Antirrhinum*, all of which had been raised from seed sown in heat in January and February last; the young plants had been grown fast and then planted out in the open ground. The plants in bloom were of large size, and were producing large spikes

of very fine flowers, some of the striped varieties being of great beauty. On poor, dry, or high-lying land, no plants give a better return in flowers. They revel in such places.

Among the numerous species, some few are seen in cultivation from time to time, but they do not take a permanent place in gardens. Among the best are *A. Asarina* and *rupestre*.

**Aphanostephus ramosissimus**.—A pretty half-hardy annual of the Composite family from Texas. It grows scarcely more than 4 in. in height, very much branched, as its specific name implies, every shoot producing a flower-head about 1 in. across, with a yellow disc, and violet-blue ray florets. Its peculiarly branching habit conduces to a close carpet-like growth, and ensures an abundance of bloom throughout the summer. It requires the same treatment as other half-hardy annuals.

**Aphyllanthes monspeliensis**.—A pretty Rush-like plant, forming dense, erect tufts 1 ft. or more high. It flowers in summer, the blossoms being deep blue and about  $\frac{3}{4}$  in. across. The leaves are slender, and the root fibrous. South of France. Borders, in light soil. Propagated by division and seed. A very hardy, though slow growing plant, mainly of botanical interest, though a tuft on the rougher slopes of the rock garden will not be out of place.

**Apios** (*Ground Nut*).—*A. tuberosa* is an interesting climbing perennial with a tuberous root. A native of North America. The flowers are a dull brownish purple, sweet scented, produced in summer in axillary racemes. It is desirable for covering arbours or for rambling over shrubs, &c.; the fragrance of its flowers, which much resemble that of Violets, pervades the atmosphere round it, especially after a shower. Belongs to the Pea flower Order, and is increased by division of tubers.

**Aplectrum hyemale** (*Adam and Eve*).—An interesting terrestrial Orchid, growing from 6 in. to 12 in. high. The thick bulb sends up a large oval leaf in late summer, which lasts until the next summer, when the flower-stalk appears with a raceme of large flowers, which are greenish-brown and speckled with purple. Sandy moist spots in rich leaf-mould. Native of the Eastern United States. Of doubtful value for the garden.

**Aplopappus**.—A little-known genus of North American Composites. Two species are in cultivation, one an annual the other a perennial. *A. ciliatus* is a robust growing annual, with stems 3 ft. to 4 ft. high, and bearing flower-heads about 2 in. across, of a bright yellow. It blooms throughout the autumn months, commencing in July. It may be treated either as a biennial, in which case the seed should be sown about August, or as a half-hardy annual, the seeds being sown under glass as early as possible. *A. Fremonti* is a species growing from 6 in. to 12 inches high, with erect stems and flower-heads, of a bright yellow, 1 in. across. It is a native of Colorado in the sub-alpine districts, and requires the treatment of other plants of its class.

**Apotaxis**.—A genus of Compositae of no garden value.

**Apocynum** (*Dogbane*).—A small genus of North American plants, of which there are four species in cultivation, but all are of little garden value. *A. androsemaefolium* (Fly-trap or Spreading Dogbane) is an interesting and curious plant growing from 2 ft. to 3 ft. high, and bearing small rose-coloured blossoms. *A. cannabinum*, the Indian Hemp, is similar, and so are *A. hypericifolium* and *A. pubescens*, and probably only varieties of *A. cannabinum*.

**Aponogeton** (*Cape Pond Weed*).—A beautiful sweet-scented aquatic plant from

the Cape of Good Hope, which, fortunately, is quite hardy in many parts of these islands, and in the north under special circumstances. No one has been more successful with it than the late Jas. McNab, of the Botanic Gardens at Edinburgh, who wrote of it: *Aponogeton distachyon* has been growing in the pond of the Royal Botanic Gardens at Edinburgh for the last 40 years, and now forms many large patches in various parts of it, the largest being 48 ft. in circumference. The situation where the pond stands was originally a marsh; when it was made, the bottom was causewayed with stones, placed  $\frac{1}{2}$  in. apart, in order to allow the numerous springs, peculiar to that portion of land, freedom to rise between them. The pond varies from 2 ft. to 5 ft. in depth, and the bottom is thickly coated with mud, arising from the tree leaves which are annually blown into it. In this decomposed vegetable matter the *Aponogeton* thrives well, and seeds, which are abundantly produced during the autumn months, germinate freely in the muddy bottom. In consequence of the number of springs which exist, portions of the pond are never coated with ice, even during the most severe winters. The overflow is very large, and is never found to vary at any time throughout the year, not even during very dry summers. To these circumstances I attribute the healthy condition of the beautiful Pond Weed, which flowers abundantly every year, not only during the spring, summer, and autumn, but often during the winter, particularly if the weather is at all mild. Plants of it have been sent from this establishment to many ponds throughout Great Britain, but in few has it been successful, evidently owing to the want of constant springs bubbling up amongst their roots, which causes a continual change of water. Plants of it have, however, succeeded in several mill-ponds where the water is kept warm by the condensed steam constantly thrown into them.

About London during the severe winters there has been no more interesting sight than the profuse bloom of the fragrant Cape *Aponogeton*. In the open air, in Mr. Parker's nursery at Tooting, myriads of its handsome flowers, with a scent like that of the Hawthorn, floated gracefully on the water, and long and graceful fresh green leaves quite flat on its surface. In the midland and cold districts it is necessary, for the perfect culture of this plant in the open air, to grow it in spring or other water that does not freeze; but in mild districts and in the south of England this is not needed. In Mr. Parker's nursery, where it grows so freely, it is supplied with water from an Artesian well, conducted into the reservoir in which it is grown. Where natural springs keep a pond from freezing it will grow well in any part of the country, with, of course, a little care in starting it. In addition to its blooming throughout the winter in England in the open air, it may also be grown and flowered well as a pot plant. In suitable positions it may be had in bloom all the year round, and it may be well flowered in an inverted bell-glass in a room. In Devonshire it is grown with greater ease and to greater perfection than in the home counties or near London. Failures often result from putting it in too shallow water.

**Aponogeton spathaceum**.—Unlike its relative *A. distachyon*, this is of erect habit, and is altogether a smaller growing plant. Its flowers are tinged with rose, but quite devoid of scent, a property so much appreciated in *A. distachyon*. It is, in fact, a very poor relation of the Cape Pond Weed.

**Aquilegia** (*Columbine*).—A valuable family of plants for the garden, often beautiful in habit of plant, colour, and form of flower. It is a northern genus, being widely distri-



buted over the northern and mountain regions of Europe, Asia, and America. The Columbines rank amongst the next successional flowers to those that belong purely to the spring months—their flowering period extending throughout May and June. Among them may be found great variety in the way of colour—white, rose, buff, blue, and purple, and also stripes and intermediate shades even in the same flower. Then amongst the American kinds we have yellow, orange, and scarlet, and most delicate shades of blue. Besides colour, too, there is also considerable variation in the shape of the flowers. In some the petals are reduplicated, and in the very double forms of our common garden Columbine, on removing one of the five petals, which are usually distinguished by their brighter colour and almost invariably by the presence of a spur-like appendage, it will be found that a series of from six to a dozen, or even more, petals are beautifully arranged one inside the other.

The Columbines are frequently of greater stature than most of the plants strictly termed alpine, but are, nevertheless, true alpine plants, and among the most singularly beautiful of the class. Where single plants of the wild form of the common Columbine are met with in the open copses and by the mountain streamlets in Northern England, it looks a queen among the other flowers of the region. The blue, and blue and white alpine kinds, living in the high bushy places in the Alps and Pyrenees, and, indeed, of all European and North Asian mountain chains, are among the fairest of all flowers. Climbing the sunny hills of the sierras in California one meets with a large scarlet Columbine (*Aquilegia eximia*) that has the vigour of a Lily and the grace of a Fuchsia; and in the mountains above Salt Lake City, in Utah, and on many others in the Rocky Mountain region, there is the Rocky Mountain Columbine (*A. coerulea*), with its long and slender spurs and lovely cool tints in its erect flowers. Indeed, there is no family that has a wider share in adorning the mountains. The finer Columbines are to the smaller alpine flowers what the Birches are to the hill shrubs. Some of the alpine species, however, are much smaller than those commonly grown, as, for example, the Pyrenean Columbine. Although our cottage gardens are alive with Columbines in much beauty of colour in early summer, there is some difficulty experienced in cultivating the rarer alpine varieties. Hence, such highly-valued kinds as the Altaian Columbine (*A. glandulosa*), the Alpine Columbine (*A. alpina*), are too rarely seen flowering well in gardens, and frequently disappear where introduced. They require carefully planting in free sandy or gritty, though always moist, ground, and in well-drained ledges in the rock garden, mainly in half shady positions or northern exposures. Most rare Columbines, however, fail to form enduring tufts in our gardens, and where this is the case they must be raised from seed as frequently as good seed can be got.

The alpine character of the home of many of the Columbines which makes the culture of some of the lovely kinds so uncertain, and which causes them to thrive so well in the north of Scotland when they fail in our ordinary dry garden borders.

To those familiar with the vigour of our common garden Columbine it must appear strange that there should be any difficulty in the cultivation of the various species, and yet no plants are more capricious; take, for instance, the charming *A. glandulosa*, grown like a weed at Forres, in Scotland, and which is so short-lived and unsatisfactory in most gardens. Nor is this species an exception; it is characteristic of all the mountain species. Let us for a moment examine the conditions under which they naturally grow, and possibly we may get some clue to those con-

ditions essential to success. Their natural habitat is often on the banks of mountain streams and moist slopes or ledges, where, on deposits of gradually accumulated rich alluvial soil, their roots find the special nourishment they require with perfect drainage; and no doubt the shelter of their position, supplemented by the overhanging branches and adjacent vegetation, helps to protect their young spring growth, as on its protection hinges the vigour of the summer bloom. Mr. Whittaker, of Mosely, near Derby, has been very successful with both *A. glandulosa* and the blue variety of *A. leptoceras*, and he told Mr. Niven that he grows them in a thoroughly drained, deep, rich, alluvial loam-soil; the same were the conditions of Mr. Grigor's success.

Mr. J. C. Niven suggests that all the Columbines, except the common one, should be looked upon as biennials rather than good persistent perennials. The seeds should be sown early in spring, and the young plants pricked out into pans or into an old garden frame as soon as they are fit to handle, removing them early in August to their permanent positions; select a cloudy day for the work, and give them a little artificial shading for a few days. Carry out the same process year after year, the old plants being discarded after flowering. Any attempt at dividing the old roots is usually attended with a very small amount of success. There are, however, instances, especially on light soils and hilly districts, where several of them remain good for years.

**A. alpina** (*Alpine Columbine*).—This plant, widely distributed over the higher parts of the Alps of Europe, is a good addition to the choice collection of alpine plants. The stems rise from less than 1 ft. to more than 2 ft. high, bearing showy blue flowers, and leaves deeply divided into linear lobes. There is a lovely variety with a white centre to the flower, which, in consequence of its exquisite tones of colour, is certain to be preferred, and many will say they have not got the "true" plant if they possess only the variety with blue flowers. It does not require any very particular care in culture, but should have a place among the taller ornaments of the rockwork, and be planted in a rather moist and sheltered, but not shady, spot in deep sandy loam or peat. It may be increased by seed or division. In moist districts, and in good free soil, it will prove a first-class border plant. Distinguished from *A. vulgaris* by the stamens being longer than the petals and by its larger flowers.

**A. californica** (*Californian Columbine*).—One of the strongest growers of the American species. The tendency of the plant is to produce one bold woody stem, which under favourable conditions will rise to the height of 3 ft.; the sepals are orange-coloured and blunt-pointed, being closely adpressed to the petals, which are also blunt; they give one the idea that they had been trimmed round with a pair of scissors; hence the appropriateness of one of the specific terms, *truncata*. The spurs are long, bright orange, more attenuated than in Skinner's Columbine, but to appreciate the full beauty of the flower it must be turned up from its naturally pendent position; then the beautiful shell-like arrangement of the petals becomes at once visible, the bright yellow marginal line gradually shading off into deep orange. The seeds of this species should be carefully looked after, as having once blossomed the old plant is liable to perish. I have never been disappointed with the seedlings diverging from their parent type in character.—J. S. N. *Syns*.

—*A. eximia* and *A. truncata*. This plant thrives best on a deep sandy loam and moist.

**A. canadensis** (*Canadian Columbine*).—This was once our only New World Columbine, having been introduced from Virginia

by the younger Tradescant. It may be taken as the type of the scarlet-orange and yellow group. The flowers are smaller than the Western American kinds; this, however, is amply compensated for by the brilliancy of the scarlet colour of the sepals and the erect somewhat capitate spurs, and the bright yellow of the petals. The true *A. canadensis* is a slender grower, scarcely exceeding 1 ft. in height, with sharply-notched irregularly-ternate leaves. As seen in cultivation it is often a cross, with an increased vigour of growth and a decreased brilliancy of colour. Easily raised from seed. It is not so valuable since the introduction of the nobler American species, but it is always a free grower. There is a yellow form. It is a plant for borders or the shrubbery, for placing here and there among dwarf shrubs and plants in the rougher parts of the rock garden, but cannot be included among the very best species. Writing of this species, Mr. Falconer says: "To see it at its best you should see it among the rocks. The Canada Columbine grows in abundance in our woods and always in high rocky places; there it springs from the narrowest chink a little bush of leaves and flowers, or maybe in an earthy mat upon a rock you find a colony of Columbines, Virginian Saxifrages, and pale *Corydalis*; they usually grow together."

**A. coerulea** (*Rocky Mountain Columbine*).—Beautiful as it is distinct, the spurs of the flower almost as slender as a thread, a couple of inches long, with a tendency to twist round each other, and with green tips. But it is in the blue and white erect flower that the beauty lies, the effect being even better than in the blue and white form of the alpine Columbine. It is a hardy herbaceous plant, flowers rather early in summer, continuing a long time in flower. I have seen it flowering freely on light soil in an exposed spot in Suffolk so late as September. It grows about from 12 in. to 15 in. high, and is worthy of the choicest position on the rock garden, and is suitable for the front margin of the choice mixed border, where the soil is sandy and deep, and not too wet in winter. Unlike the Golden Columbine, it is not a true perennial on many soils, though a better report in this respect comes from the cool hill gardens. To get strong healthy plants that will flower freely, seeds of this kind should be sown annually, and treated after the manner of biennials, as it rarely does well after standing the second year, and in many cases dies out altogether at or before that time. The flowers are, however, so lovely and so useful for cutting, that it is deserving of any amount of trouble and attention to have it in good condition, a result which can only be attained by treating it in the manner just indicated. All the Columbines delight in a deep rich sandy soil where they can find plenty of moisture below for the roots, and as they make their growth early, the friendly shelter of shrubs or rock to keep off cold cutting winds and frosts is of use, if not too near to rob them or restrict their root room.

This is one of the many good plants which deserve a home in the nursery department, so to say. It deserves a choice little bed to itself, from which its lovely flowers could be gathered in abundance for cutting and plants obtained for the rock garden or choice borders. A coating of 2 in. of half rotten leaves or other convenient material in summer would assist the bloom. The seed is best sown as soon as may be after it is ripe, in cool frames near the glass, or in rough boxes in cool frames. With abundance of fresh seed there will be no difficulty in raising it in fine beds of soil in the open air, protecting the beds from birds or slugs, but the seed is usually too precious to risk in the open air.

What is supposed to be a white variety of this plant is sometimes called *A. leptoceras*, which was indeed the name first.



No. 513. SATURDAY, SEPT. 17, 1881. Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare.*

## THE ROSE GARDEN.

## TEA ROSES IN THE GARDEN.

To many it is by no means an exploded idea that it is useless for them to try to grow Tea Roses in the open air, and they thus deprive themselves (for an idea) of a flower, that is, if possible, more universally admired than the Hybrid Perpetual Rose itself. What a pity! one feels tempted to cry when one looks at the numberless sunny banks that surround many a suburban villa or country cottage, and sees such choice situations given up, not to a sea of Pinks, Carnations, Cloves, and Mignonette; that is too good to be commonly true; but to what? to a mass of clipped Laurels, frost-bitten and patchy it may be, that the summer's sun has scorched brown as a berry, and never a flower to be found thereon at any season of the year. The fact is, that in many soils and situations, when there is full exposure to sun and air, nothing could be more easily and satisfactorily grown than the Tea Rose. The great enemy of the Tea Rose is damp rather than frost; it loves the open air and sunshine more than the sheltered nook where the dew lies long, and where Hybrid Perpetuals thrive, and enjoy a situation where the grosser growing Roses might suffer from the violence of the wind.

Until the last few years the Tea Rose was grown as a standard, and consequently perished the first severe winter; but now experience has shown us that dwarf Tea Roses on their own roots or budded on the Brier thrive admirably on sunny banks throughout the kingdom without protection, and in the warmer soils and counties on the flat as well. Spite of this, they are not grown half so much as they should be, and the reason seems to be this, that where they have been tried, so many young plants have perished the first winter, or dragged on a miserable and maimed existence, so the disappointed cultivator who had looked for a harvest of fine blooms and charming buds the following summer sighs, "I cannot grow Tea Roses in my garden!"

It is quite certain that something must be "rotten in the state of Denmark;" and so there is. The situation may be airy and sunny, and the soil good enough (for the Tea Rose does not demand the richest soil), and yet how few have survived their first winter, especially in these late seasons.

We have learnt a lesson with such things as the Pampas Grass, Tritomas, and the like, which though they come from warm climates are hardy enough, but yet if planted in the autumn refuse to grow again as a rule; so now, anyone who wishes to transplant them does so in the spring. It is much the same case with the Tea Rose; cannot we apply it? If we plant Pampas Grass in April or May, why not the equally sensitive Tea Rose? If they are hardy, why are they so tender? is a serious question. Anyone who visits the great Rose growing nurseries will see houses upon houses full of young Tea Roses, budded or struck and grown on rapidly in heat, so as to be fine saleable plants in autumn, while those that are propagated in the open ground are but few in comparison. With any other plant but the Tea Rose, should we grow it under glass all summer and then plant it out in autumn to face the rigours of an English winter, and then expect its tendered shoots to thrive next

spring? Certainly not; and yet I wonder how many (including the writer) have done such a foolish thing and bought their experience very dearly. The wonder is not that many die, but that so many do grow spite of all. But if anyone will buy his young Tea Roses and plant them out with the earlier summer bedding plants, or, better still, if he will get his plants in autumn, and if they are not in pots, pot them and keep them under glass all winter until they have flowered in the spring, so that he may see what he has got, then as soon as the bloom is over, and before fresh growth has pushed, plant them out, it may be in the end of April or early May in the north, and he will never lose a plant. A whole summer to establish themselves in and to consolidate their growth, will so thoroughly strengthen them, that they will require no more than a mulch of manure or a soak of water as occasion serves in winter or summer, and a sure harvest of bloom will follow year by year as a matter of course. If they are cut down to the ground by frost they will require no further pruning; but no harm whatever is done by the severest winter in such situations; and if unpruned they do not seem the worse for it.

Another point in favour of Tea Roses is that they always keep much freer from aphids and mildew than the Hybrid Perpetual. Where there is the protection of a low wall at the north side of the bank or bed, and that wall has a movable coping of glass 18 in. wide, Tea Roses may be gathered certainly for six months in the year, a gain that amply repays all the extra outlay. A wall 5 ft. high is amply sufficient for ordinary purposes, or a paling of wood may effectively afford any little extra protection that may be needed. For scent, for continuity of bloom, and delicate beauty of form and colouring, what is there to compare with the Tea Rose? But this delicacy of beauty leads to many a rotten bud whose petals have been soddened and ruined by the rain; and this brings us to the choice of good garden varieties. It is not my purpose here to speak of standard or climbing Tea Roses, because they are both liable to be cut down to the ground by frosts such as we have endured lately, and so pass with a regretful glance at such beautiful Roses in a warm climate as Lamarque, Ophirie, Cloth of Gold, Maréchal Niel, and the like; nor would I plant Gloire de Dijon and its seedlings, Mmes. Bérard, Trifle, Belle Lyonnaise, in such a position unless they had a special plot to themselves, where in company with Cheshunt Hybrid they would carpet many a square yard in a few years' time.

On the Riviera, the flower growers give the palm to Safrano for hardiness, and not without good reason. Mme. Falcot, Isabella Sprunt, and Amazone are also all hardy, and better semi-double yellows of varying tone that will afford an abundance of pretty buds till winter has really set in. Mme. Lambard is by far the best hardy red or deep rose-coloured variety that will admirably fulfil every purpose, early and late, but in hot weather the colour changes sometimes to yellowish white. Of whites deepening to blush, what can compare with Souvenir de Paul Neron, Catherine Mermet, Anna Olivier, Mme. Bravy, or its stronger growing variety, Josephine Malton, Devoniensis, and Madame Willermoz? Of pink Tea Roses, Souvenir d'un Ami, Homer, President, Comtesse Riza du Parc, and Cannes la Coquette are excellent. Of yellows more double than those first mentioned, Marie Van Houtte, Perle des Jardins, Perfection de Monplaisir, and Madame Margottin are very reliable. When a little shelter can be given from soaking rains, which rot the delicate petals so sadly, Perle de Lyon, Jean Ducher, Mme. Welch, Marie Guillot, and Comtesse de Nadaillac must not be omitted, and these with the excellent

Noisette Caroline Kuster, and that sweetest of all sweet Roses, Aline Sisley, will surely be enough for anyone to begin upon, for I would advise those who make a beginning to buy two or three plants of one variety they know to be good rather than one of different kinds, for then the chance of a weak plant causing disappointment is much less likely to occur. Once properly planted, manured, and watered, as may be required, from time to time, the possessor of a bank of Tea Roses will "wonder however he did without it," and will be able to supply his neighbours with many a choice bud, they, in their turn, it is to be hoped, imitating his good example. E. H. W.

## THE ROSE SEASON OF 1881.

Now that our most enjoyable days, weeks, and months are nearly over, now that the Hollyhock and Tiger Lily, the harbinger of autumn, are putting in their appearance, rosarians may safely review the past. I wish we could do so with more pleasure. But we should be thankful for the little pleasures and joys which we have had after such a trying and destructive winter. Here in the midlands I may truly say it has been an unfavourable season for our queen of flowers, and hence she has not presented herself in her true and characteristic loveliness. Caunton, Barkby, and the not less famous "Hunger Hills," each and all bear me out in this.

Sheffield, I presume, was the show of the season, but there Roses were wanting in freshness, brightness, and colour, and last, though not least, size. Of course I speak of Roses I saw there in general. I know there were some boxes shown which might vie with those of other and more favourable seasons, and amongst these were Canon Hole's, the Cranston Company's and those from Mr. Cant, of Colchester. But to speak of Roses which are good and valuable varieties, and of those which have not come to the "front" at all, or scarcely this year, notable amongst them are La France, Charles Lefebvre, Monsieur E. Y. Teas, Constantin Fretia-koff, Marguerite Brassac, Ferdinand de Lesseps, Sir Garnet Wolseley, May Quennell, Marquise de Castellane, and others. Last year these were all, without exception, extra fine in this locality, but as I say, they have from some cause or other, unknown, I suppose, to the most skilled rosarian, failed to put in their appearance in full uniform this season.

But now to a brighter and more cheerful side of the subject or picture. Amongst those that have charmed us and beautified our stands at the various exhibitions are Duchess of Bedford (very good), Countess of Rosebery (one of the finest of the season), Louis Doré, Mrs. Laxton, Penelope Mayo, Madame Ducher, Charles Darwin; and among older and better known varieties Marie Baumann, Alfred Colomb, Francois Michelon, Xavier Olibo, Madame V. Verdier, Horace Vernet, Lord Macaulay, Louis Van Houtte, Baroness Rothschild, Comtesse de Serenye, and a few others.

Among the newer ones which have disappointed us thus far here are Julius Finger, H. P. Gloire de Bourg-la-Reine, Pierre Carot, and Dr. Sewell. The first named has not opened at all; it was to be an advance on the Captain Christy type. Gloire de Bourg-la-Reine is fine in colour, perhaps the brightest of all Roses, but too thin. Pierre Carot is free blooming, but as yet small and "too much alike." But before we denounce a new Rose, or cast it on one side as worthless, we must try it for two or three years. For while we all acknowledge that all Roses have their especial seasons, did ever a season come so cruel as to deprive us of our long proved Marie Baumann and Alfred Colomb? In my opinion no two Roses are so constant, so free, and in all respects so generally good, while the Duke of Edinburgh type with its twin sisters, the Sultan, the Shah, and the Rose named after our worthy President and Canon (Reynolds Hole)—these are first-class acquisitions,



and could not now be easily dispensed with: nevertheless, they are Roses which to use a rosarian phrase choose their seasons and cannot be reckoned upon in the same way as Marie Baumann, Alfred Colomb, and others.

Now, as regards the Rose which has received so much homage of late—A. K. Williams, and one which is to rank with such as Marie Baumann, Charles Lefebvre, and Alfred Colomb—this has not been so fine here this season, owing partly to its having been weakened, I believe, in constitution by over working, and partly to its not yet having become climatised. But can we afford with all our multitude of varieties to dispense with any? I say, No; all are lovely, and all come in and cheer us in their own time and season; those which forsake us for a while are all the more lovely to us, as it were, when after their holiday trip come and present themselves to us once more, as in days of yore. Let us, then, grow all and wait patiently for their developing themselves in their own time and seasons, and we shall not be unrewarded for our waiting.

W. H. FRETtingham.

Beeston.

**Roses at Manchester.**—It was a happy thought that prompted the National Rose Society to hold a show in August in connection with the greatest horticultural event of this or any other year. The result was satisfactory. Some excellent Roses were shown by the Messrs. Mack, of The Nurseries, near Darlington; Messrs. Paul & Sons, of Cheshunt; the Cranston Nursery, and others. The amateur classes were, however, rather inferior. The Roses also showed a considerable amount of injury from the dashing rains, and lacked somewhat of the freshness and quality that characterise them in June or July. Those of the Messrs. Mack and Paul, were, however, wonderfully fine for the season. It was singular and rather disappointing to observe that the Roses that were the best at midsummer were also those most prominent in the winning stands in August. Many had hoped that a Rose show in August might have brought other Roses into prominence, and revealed a race of superior autumn bloomers. That would have been a most useful service to Rose growers. But perhaps it is almost as useful a one to have confirmed to us by experience that the finest summer Roses are also those that bloom most freely and perfectly in the autumn. Among such were the following well-known and much prized varieties: Alfred K. Williams, Francis Louvat, Dr. Andry, Lord Beaconsfield, Duc de Wellington, Alfred Colomb, Mdle. Annie Wood, Catherine Mermet, Annie Verdier, Mdle. Bravy, Sir Garnet Wolseley, Madame Hausman, Etienne Levet, La France, Charles Lefebvre, Comtesse de Serenye, Marie Baumann, Beauty of Waltham, Auguste Rigotard, General Jacqueminot, Louis Dore, Baroness Rothschild, John Stuart Mill, Louis Van Houtte, Ferdinand de Lesseps, John Hopper, &c. The finest of the Roses came, however, from the north of England beyond York, and it would prove interesting and instructive to rosarians were the Messrs. Mack to inform us whether their fine flowers were the products of their first or second bloom. Among Tea Roses, the following were among the best and most distinct exhibited: Niphetos, Marie Van Houtte, Madame Willermoz, Madame Bravy, Souvenir d'un Ami, President, Rubens, Catherine Mermet, Madame Hippolyte Jamin, Madame Berard, Madame Lambard, Letty Coles, Adrienne Christophle, Perle des Jardins, Marie Guillot, Madame Camille, Madame Ducher, Clothilde, Madame Caroline Kuster, Souvenir de Paul Néron, Anna Ollivier, Perfection de Monplaisir, &c. A few stands of Teas were well grown, but on the whole—and considering that Tea Roses are our best, I had almost written only perpetual flowering Roses—they surely might have been better. The Messrs. Paul, of Cheshunt, might have cut better flowers off their pot plants, referred to last week as forming such a beautiful feature in the large tent, and the Perpetuals shown by Messrs. Mack were far nearer perfection than any of the Teas exhibited. It is hoped that by repeating Rose

shows in August, and multiplying them in September, very much may speedily be done towards increasing the numbers and improving the quality of our real perpetual Roses.—D. T. F.

## EDITOR'S TABLE.

**ELÆAGNUS ARGENTEA IN BERRY.**—It is interesting to see this distinct-looking shrub clustered thick with berries. Mrs. Robb, who sends it from her garden in Surrey, writes: "The shrub is lovely here, the sprays borne down by the berries, which are equally pretty in an earlier stage, when the red colour being lighter the spots are more marked. I never saw it anywhere except in the old pleasure ground at Chiswick, now done away with, and there I was so struck by its beautiful habit and its shape in summer, when I saw it, that the berries were a fresh delight. The foliage of *Cratægus punctata rubra* is now going off into a most soft and lovely yellow shade, and the Butternut tree, and *Carya alba*, and the Norway Maple are exquisite, though nothing can vie with *Liquidambar*, *Rhus Cotinus*, and *Quercus palustris*."

**MR. BETTERIDGE**, of Chipping Norton, sends us sixteen varieties of quilled Asters, to the beauty of which by description it is impossible to do justice. They are like balls of closely-fluted honeycomb. The centres of the greater part are pure white, with borders of different colours. Some are deep violet, others rose, pale lilac, delicate peach, mauve, pink, and magenta. There is one gradually shaded from a delicate mauve to pure white, and one has a border of the same fluted appearance of pale magenta, with an outer fringe of more open magenta petals. A new variety, not yet made public, is exceedingly pretty; it has a pure white centre, petals tipped with yellow, and a lilac fringe of open petals. A few of the varieties are entirely rose, pink, deep lilac, magenta, and pale peach, and one pure white.

**WHAT** a pity to see our gardens in autumn devoid of such flowers in a good state owing to the undue prevalence of a few types of flowers which do not always repay the grower so well. A bed of well-grown China Asters adds a charm to any garden, and if there be no room for such in the flower garden proper they are worth growing for their own beauty in some quiet spot where plants may be considered without relation to their surroundings or associates.

**SENECIO PULCHER.**—We have not seen anything handsomer than a noble specimen of this plant, brought us by Mr. G. F. Wilson with five open flowers and fourteen buds in various stages, the open flowers being over  $3\frac{1}{2}$  in. across. A good character of the plant is the fine form of the stem leaves. Grown in warm Surrey soil, it is certainly a precious autumn flower—a large, violet-purple star—the most distinct of all the large Daisy-like flowers of the autumn.

**THE BIRD'S-FOOT VIOLET.**—This charming little American Violet comes to us from Mr. Kingsmill, and not the ordinary type, but what is called the bicolor variety, with a distinct contrast of colour in the flower. There seems to be several forms known by this name, and, judging from what we have seen, some are greatly inferior, but the plant when well grown is always charming, leaf and flower being so distinct. It loves a sandy or gritty and moist spot, and is charming in a little group or colony when the plants flower.

**CLEMATIS CRISPA.**—A most delicate Clematis, half tubular, but the divisions quickly spreading into a delicate lilac star with white bands in the centre; one of the various Clematis which will probably find a place when people have been surfeited with the larger and more showy kinds.

**EVENING PRIMROSES.**—How beautiful the Evening Primroses are in September, both the yellow and the larger white that shades off into pink in fading! No absence of delicate, fragrant, and effective flowers when they are in the garden.

**THE ALPINE TOAD-FLAX.**—This little alpine gem is now full of flowers, as sent from Eastcott. It is one of the alpine plants which, while found in the most dreary and awful slopes in the Alps, seems equally happy on a lowland garden, and will often sow itself and grow as well on a piece of bare gravel-walk as it does on the grit of a high moraine.

**CELSIA CRETICA.**—This is a fine plant when well grown. Once it was seldom seen away from the houses or pits of botanic gardens; now, grown freely, it is really a distinct and handsome plant with its rich yellow flowers and massive polished yellow buds. Well grown in good soil, it is also a stout and effective plant. From Mr. Kingsmill.

**ZINNIAS.**—The Zinnia has never had a place in proportion to its importance. People do not notice sufficiently the strange value of the distinct and lovely colours which these plants show. If we mistake not, their day will come, and both the single and double sorts will receive the good culture they deserve. The double forms, well grown in some Continental gardens, that is to say, planted singly and well, like a Dahlia, are superb, but the single ones have not yet received enough attention anywhere. We are indebted to Messrs. Sutton for a series of double blooms, but the recent bad weather has somewhat tarnished them.

**THE AUTUMN BLOOMING CYCLAMENS.**—There are various flowers and plants which belong by right to our autumn, so to say, which cannot be beaten by even the wet and cold days which have made the beginning of our present autumn so sad. To these belong the hardy little alpine Cyclamens, some of which come to us from Eastcott. In single poor specimens in which they are generally seen these plants are ineffective, but if properly grown as marginal groups or colonies on the rock garden, both their leaves and flowers are charming, the foliage ornamental for a long time.

**DAHLIA GEORGE RAWLINGS.**—A wonderfully large, fine, and dark Dahlia—a seedling named George Rawlings, raised by Messrs. Rawlings, of Old Church, Romford, the Dahlia growers. Much as we like the single Dahlias, these noble double flowers should not be allowed to fall into neglect, as they have been in many places for a good many years past. The Dahlia bed or bank that was the rule at one time was an excellent feature in a garden, for the simple reason that the Dahlia is, take it all in all, the most trusty autumn flower we have. Well grown, they give us such a profusion of flowers when most other plants fail us, and they flower so well when everybody is in the country to see them. It is to be hoped, then, that large Dahlias, and single Dahlias, and other groups of Dahlias will receive the attention that they deserve in future.



**VARIOUS DAHLIAS.**—Our table is made gay with several types of Dahlia from Messrs. Cannell—the curious Cactus Dahlia, which we figured in *THE GARDEN* some time ago; the beautiful single white Dahlia called alba, a most effective and distinct plant; the show Dahlia, with its massive and wonderfully-formed flowers; the bedding Dahlia, dwarf and free; and, perhaps, most valuable of all for profuse and cheery colour, the pompon or bouquet Dahlia, and different races of single Dahlia, yellow, scarlet, and rose.

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**THE LILY OF THE VALLEY IN FRUIT.**—The fruit of this, the central type of beauty of the Lily tribes of northern plants, is as handsome as its flower is graceful—a raceme of round coral berries as large as Peas. Mr. Rose, who sends it from Malton, says it was grown in the garden of a farmhouse at the foot of the wolds. It might be worth while placing the Lily of the Valley in positions where it would fruit more freely than is the rule.

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**VIOLETS FROM KENT.**—Welcome bunches from Linton sent to “show how early, compared with old plants, young runners taken off in spring and planted in beds on shaded borders flower. The sorts are Czar, single blue, and Marie Louise.” The Violet has so much honour for perfuming the winds of March, that its autumnal services are not always remembered or encouraged.

#### NOTES AND READINGS.

ONE of your contemporaries commenting on the Manchester Show, in response to remarks of a correspondent, says, and justly, that it would be unreasonable for employers to expect everything as good as it was seen there. Of course it would; but we do not suppose there are many employers who are so unreasonable, though there are no doubt exceptions. Unquestionably meritorious exhibits represent skill; that much will be ungrudgingly admitted, but sometimes they simply represent an extra expenditure of means and little else. Nobody supposes that the successful exhibitor is always the best gardener, for in a large proportion of cases a successful exhibit only represents some speciality of a garden. The gardener who visits exhibitions, but is not an exhibitor himself, through causes which he cannot help, perhaps, is sometimes apt to be depressed by what he sees when he thinks of his own disadvantages; but he ought to take heart rather, for there are other spheres of gardening besides the show tent that are open to him, if he cares to try, that are likely in the end to confer as much honour upon himself and as lasting a benefit upon his profession, although for the time being he may have to work without any inducement in the shape of pecuniary reward. Neither shows nor prizes are the sole end or aim of gardening, but only an outcome of it, so to speak.

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Much has been said lately about the shop element in horticultural exhibitions—a good deal, too, that is not well considered. Now-a-days there is a good deal of “shop” in the flower show business all round. Societies want money, and exhibitors want money, and both exert themselves prodigiously to get it. It would be hard to say whether the *bona-fide* exhibitor or the undisguised dealer are the most anxious to do business. A great deal that is unfair has been said about the plantsman or nurseryman who takes examples of his stock to the show with the object of doing business, but hardly any one finds fault with the garden appliance and utensil manufacturer who turns the show

ground into a veritable shop with no other purpose than that of business. Moreover, if a horticultural society makes shows with the avowed object of earning money for its own ends, and which it may legitimately do, can it with a good grace prohibit those who patronise it at their own cost from making capital out of the opportunity in the same way? Not likely! Flower shows are now regarded by the trade as good advertising mediums and as opportunities for doing business; deprive them of that character and we shall soon see the result. A single firm will sell hundreds of pounds worth of plants at one show, as we have known them to do. At one time prize taking may have been to some extent regarded as a matter of honour, but it is now a matter of trade, and there is no need to disguise the fact; the greatest opportunities bring out the greatest efforts; the biggest prizes the most exhibitors. If visitors to flower shows are annoyed by importunate tradesmen and exhibitors, it is easy for a society to put a stop to such practices, but they must count the cost, as people have to do in all such enterprises. As flower shows are organised now, it will not do to indulge in too much Platonic sentiment.

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Turning to the exhibitor from private gardens, and who has generally hitherto been credited with all that was honourable and fair in his transactions, we do not now find things so satisfactory as could be wished. Not long after a noteworthy show of Roses had been held in the provinces lately, the following paragraph appeared in the leading columns of a well known daily paper:—

Now that the season for floral exhibitions is well-nigh over, would it not be wise for the various committees connected therewith to rearrange their stipulations ament future exhibitions? Much annoyance has been caused this season by persons obtaining prizes who had not grown a single flower they had sent for competition. Two cases will illustrate my meaning. The first is this: Prizes were offered for Roses at a local show; some of the members carefully tended their blooms, and stood well for awards, but a non-grower, more acute and less conscientious, “ordered” the requisite number of first-class flowers from a distant nursery, “entered” for them, and carried off a prize over the home-growers. No. 2 was a similar case, in which the prize-taker “bested” his fellow-workmen by purchasing his exhibit and boasting of his success.

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Drawing the attention of a noted exhibitor, who has lately been adding to his laurels, to this paragraph, his comment was “no doubt of it. I go to many of the great shows and you hear the same complaint at them all, particularly as regards cut flowers and fruits. I have heard collections characterised as the property of small ‘limited liability companies.’ Every honest exhibitor laments the increasing prevalence of such practices, which put the honest competitor quite out of the running.” It is asserted by those who travel about a good deal, frequent shows, and know pretty accurately the position of exhibitors, what they can and what they cannot do, that there must have been both buying and selling or swapping on a considerable scale at a late exhibition. Horticultural societies and managers are as cognisant of such doings as any one, and have frequently been appealed to in cases, but the difficulties in the way of prosecution or enquiry have been the stumbling-block to the conviction of the offenders. It has been suggested that a large class of exhibitors might, in addition to signing the usual declaration in the “entry form,” be required to also get the testimony of their employer or his agent to the *bona-fide* character of the entries. No employer would decline to give this, and although it would not be an effectual

preventive of cheating in all cases, it would have a deterrent effect at least.

I see, while on this subject, from an American paper that the American Pomological Society has decided that in future “the exhibition of large collections of fruit is not desirable, but that the show of fruits should be confined mainly to new or rare varieties and remarkable specimens, or such as being peculiar to any locality or for any other reason, possess special interest. Intending contributors—whether as states, societies, or individuals—will oblige by giving notice what quantity they propose to exhibit. Three specimens of a variety will be sufficient, except in fruits of special interest.”

It would be no matter of regret if some of our English horticultural societies came to a similar decision in regard to collections of fruit. It is pretty generally acknowledged that giving prizes for these fulfils no good object whatever. The collections usually contain the most inferior fruit in an exhibition. There may be one or two good dishes in collections that render it presentable, and the fag end may be made up of anything that comes to hand. And yet it often happens at great shows that a man will win a large sum of money for a collection not one dish of which would have had a chance in the single classes, where the real tug of war really comes. Yet, in the latter case, for a similar number of dishes, perhaps only two-thirds or less of the amount will be offered in prizes. Exhibitors have been known to win prizes for collections for years in succession that have hardly ever taken a prize in the single classes. The truth of this statement may be verified at any exhibition. It is not a fair arrangement. The single classes always represent the highest degree of excellence and skill at an exhibition, and should be rewarded accordingly. The single dishes should come first and the collections after. If collections were done away with altogether, and an extra prize given to the man who won the most prizes in the single classes, real merit would be rewarded, and a new and better aspect would be given to exhibitions. It would then be seen who were the best cultivators. At present collections too often bring to the front only those who have the most means. To give an example of the unjustness of such a distribution of the prize money, I will take the list of prizes given annually at a noted metropolitan show. For a collection of six distinct kinds of fruits, including two Grapes, £5 is awarded as the first prize. This collection often consists of two varieties of Grapes, six Peaches, six Nectarines, one Pine, one Melon, six Figs, and a dish of Strawberries. For the same number of single dishes of the same fruits, and which are almost invariably of higher excellence than those in the collections, the amount in first prizes is £3 10s. And yet a dish of Grapes or a dish of Peaches may be one man's only exhibit, and his expenses and trouble may be as great as the man who brings the winning collection. This question is a fertile source of discussion among gardeners, and deserves attention at the hands of societies. As I said before, however, collections fulfil no good purpose. If it be desired to encourage a gardener to show the greatest number of excellent fruits, the single classes should be the field of competition; in these only will he meet with foemen worthy of his steel, and a fair field and no favour. Giving prizes to collections is encouraging a species of protection, that should not be tolerated in any free trade community.

Our flower shows would, indeed, not be less interesting or instructive if they were a little



less sensational. Now that the trade comes forward so liberally in the matter of prizes, they might well consider this subject, and instead of offering prizes for exhibits that do not show either discrimination or interest, but only a willingness to become liberal patrons of horticulture, let them encourage gardening in some more varied and useful direction than in simply supplementing the already liberal prizes given by societies. The man who offers prizes for the best examples of his own new Peas or Potatoes, or whatever it may be, is a far greater benefactor of his kind than he who simply rewards some branch of culture that is always being cared for and patronised by everybody else. These objects seem, from what one reads and sees, to be kept in view more among Continental societies than with us. The quality of their productions may not be so striking, but they are of more general interest, and have a wider import and application.

An able lecturer on fruit culture in America is energetic in his denunciation of the practice of growing too many varieties. To cultivators he would say, "Examine the plantations and orchards in your vicinity on similar soil and locations. Note down the smallest possible number of varieties in each class of fruit you propose to grow in order to make a succession, and meet the wants and tastes of the market which you shall select. Then in experimenting upon new or untried varieties, let it be done upon a very small scale, until their value is fully and satisfactorily established. This course rarely results in a failure, while the opposite one scarcely ever produces ultimate success." If this advice is needed in America, it is even more needed in this country, for the culture of too many varieties has been the bane of our practice hitherto.

A "special" in search of information on the subject of taste in flower gardening was, according to a contemporary, told to sit down, and the "British public would answer the question for him in a way that would not admit of his entertaining any doubt on the subject." Our "special" sat down, and the whole question was settled in ten minutes by the groups who flocked round the carpet beds at Hampton Court the other day. This is a truly anti-Ruskin way of settling such problems, and, as Jeffrey said about the preacher, "it will never do." Imagine a critic of the Royal Academy sitting down during some open day to gather impressions on the subject of high art from the babblement of a Cockney public! How, we wonder, would a Millais, a Poynter, or an Alma Tadema fare under such criticism? The plan has one undoubted advantage—it saves the critic who has no particular opinions of his own to offer from giving any, and he can always safely make a scapegoat of the poor British public. If a bear garden or a prize-fight ring existed at Hampton Court, the discriminating British public would have "flocked round," just in the same manner as they did round those lovely mosaic designs, and in all probability we should have had the *Chronicle* exclaiming a week later: "Yes, bear baiting and prize fighting attract fifty admirers for every one attracted by other amusements, and so those who are responsible for the management of our public parks and gardens with great judgment do not run counter to public opinion." I apprehend the journal in question will, one of these days, publish the usual: "We do not always share, and do not hold ourselves responsible, for our correspondents' opinions," above its "specials" columns. The public have to be taught on subjects concerning which they are virtually strangers. They want to be shown the best examples in gardening as in art, and must be led,

not followed. Ruskin has said the public needed the best models placed before them in order that they might have their ideas and conceptions enlarged. Bringing art down to the level of the vulgar mind would be regarded by the great critic and philanthropist as a prostitution of higher intelligence, and this is what the chronicler of Hampton Court means, if it means anything.

Mr. Wm. Taylor wants proof that seven-eighths of the men brought into gardens can attend to a fan-trained tree, or that it is possible to teach them that duty. He contends still that neither is possible. He seems to have forgotten that when one person libels another, it is not the libelled party who is placed upon his trial, or on whom the onus of obtaining proof is thrown, but the man who said the evil things of him. The general impression hitherto entertained of the rising generation of gardeners is that they do possess the intelligence denied them by Mr. Taylor, and it is for him to prove the contrary, seeing he is the only man who entertains such opinions. He says, last week, that "the facts are too evident," and he will neither modify nor withdraw till somebody satisfies him with proof. At present one cannot think of anybody who is likely to have any success with Mr. Taylor. It appears that the late Mr. Thompson, of Chiswick, once wrote that "the fan method requires particular care and some knowledge of the physiology of the tree," and this innocent statement, Mr. Taylor says, corroborates his estimate of the young men in our gardens. This is the proof on his side, and it is only a pity that Mr. Thompson does not live to read it. Seven-eighths of the young men in our gardens cannot be taught to take "particular care" when required, and the same number are incapable of acquiring "some knowledge" of the physiology of a tree. Such is Mr. Taylor's logic when correctly analysed. Shade of Whatley! One does not want to be too hard upon Mr. Taylor, but it is clear enough that one or two casts of the web would land him in a position logically desperate. Mr. Taylor says there is no room in his communications for banter and gossip, but we are pleased to see that his "fish-bone" system of training, which he spoke of as "the method he had to recommend," and described with all the minuteness of originality, is acknowledged to be from the "The Gardeners' Assistant," as we stated. Mr. T. ought to find room for little "acknowledgments of this kind." *Truth* or the *Cuckoo* would have done it. PEREGRINE.

**Mignonette.**—This is very beautiful this autumn, as the recent rains have given it new life, and it is blooming and growing almost too luxuriantly for the production of a good seed crop. Plants of the giant white kind, the best of all for outdoor culture, spread themselves over a large space, and send up quite a mass of young shoots and delicious bloom. One is really surprised to find in large gardens scarcely a plant of Mignonette, and yet a good breadth should be sown every spring. Of all colourless flowers none are more frequented by bees, and the value of a large breadth for money-making purposes cannot be over estimated. Sir John Lubbock spoke at York of the fondness of bees for blue colours. Now, though I have close to me big patches of Mignonette, both pale blue and dark blue, Pansies in full bloom, and the richer blue *Salvias*, the bees don't frequent the masses of blue, but hie to the colourless but richly odorous Mignonette. Indeed, if the love of bees for richly coloured flowers were as common as is believed, we ought to have these hues most abundant in Nature; whereas they are not only the least common, but inconspicuous flowers predominate. Like bees, everybody loves Mignonette, and a good bunch of bloom is just now a most welcome gift.—A. D.

## GARDEN IN THE HOUSE.

**Floral table decorations.**—Is there not both room and need for the exhibition of something original and novel in table decorations? We find just the same style and taste exhibited now as was shown perhaps eight or ten years ago. One special source of annoyance is the eternal March stand, or glass epergne, nearly always of the same pattern, but varying in height and in number of flowers, dishes, or receptacles. The first great error in the construction of this stand is seen in its lack of a pedestal, for nearly all those employed in table decoration have as a base a broad dish which when dressed with Fern fronds and flowers presents upon the snowy cloth a quaint floral pancake, perhaps 18 in. through. As a rule, therefore, dishes and dressings are too large, and the best remedy would be found in fixing them on to a bronze metal pedestal of some chaste design, thus lifting the dish 6 in. from the table. If this were the case, the Fern fronds that are always employed for a bordering would hang over, just touching the table and partly hiding the pedestal. But there is no absolute necessity that there should be a dish. A series of small glass vases fixed round the stand would be even prettier, and admit of a more varied arrangement of flowers and colours. Then the stand should have a clear height of 15 in. between the lower and upper receptacles, so that nothing more than the stem should interpose between the persons sitting on either side of the table. Few persons in judging the arrangements of a competitive dining table perhaps put themselves in the places of the host and hostess, that is, at either end of the table, to estimate the effect of the arrangement. If they did, they would find that in most cases all connection between the most important personages at the table was cut off by the obstructing dressed stands, whilst those sitting on either side of the table, if a stand interposes between them, would be equally badly placed. It may be well, too, to ask why dining tables are always of the stereotyped oblong pattern. In this respect the decorators follow not taste, but the upholsterer's pattern. A round table is not only by far the most sociable form for a dinner party, but it admits decorations of a much more varied and pleasing form than those which now almost universally meet the eye. No doubt in this case there would be the same anxiety on the part of the decorators to start with a gorgeous and numerous loaded centre-piece, thus at once cutting off all sight of one's opposite friends, whilst several smaller stands would support it in perfect conical form. Yet to many it will at once be obvious that no more suitable centre could be found than an elegant *Cocos Weddelliana* with a clear stem of 2 ft., and if the table were large even of 3 ft., and surrounding it some simple chaste stands only sparsely dressed, and yet elegantly so, the aim of the decorator being to give beauty and exhibit refined taste without in any way detracting from the chief object in view—the dinner and the comfort and pleasure of the guests, table decorations show perhaps as much skill as decorators can display upon tables that are stereotyped in form, but the constant repetition has become nauseating. We want, and there is ample room for the change, tables of better form, stands of diverse and more elegant design, and fresh taste shown in their decoration.—A. D.

**Wild flower bouquets in Sligo.**—There were 115 bridal and ball-room bouquets at the Manchester International Show, and not one of them contained a wild flower, nor do I remember having seen one or any in competition for table decorations. THE GARDEN has, however, always taken an interest in lady and wild flowers, and will, no doubt, like to see the following extract from a letter received this morning from a Sligo lady: "I had been at a tennis party at —, and, after admiring the fine selection of greenhouse and stove flowers, was rather surprised to find instead of any of them being employed for indoor decoration, that very telling and unique effects were produced by some of the commonest wild flowers and selections from the wild garden



and semi-wild borders. Take an illustration that seemed very striking. Placed on brackets in one of the ante-rooms were artistic vases of simple construction—the background colouring of the wall being a delicate shade of sea green—containing leaves of black Beet, sprays, flowers, and seed vessels of Fennel, a few tufts of Golden Feather, a bunch of the yellow flowers of Ragwort, with some flowering stems of an indigenous hardy Sedum, with very bright crimson flowers. Effectively arranged, you can hardly imagine, with such ordinary materials, what a piece of harmonious colouring this was—you had crimsons, browns, yellows, greens, &c., very lovely, toned down and shaded into each other—in imitation of Nature—a study for the artist in brown, green, or crimson, and within the reach of all.”—W. J. M., *Cloamel*.

#### HOUSE PLANTS.

ALLOW me to say, in answer to your correspondent (p. 281), that there are several bulbs which, if potted now, will flower in winter and early spring in the windows of an ordinary dwelling house, more especially if they have a favourable aspect, such as the south or south-east. For this purpose Roman and ordinary imported Hyacinths, early Tulips, &c., should be plunged in cinder ashes in the open air to a depth of 6 in. or 8 in., and in the course of three weeks, more or less, they will have emitted roots into the soil, and will have commenced growth. They should then be placed upon a window-sill, or some other light situation, and should be supplied with water when they require it. Hyacinth bulbs may, if desired, be placed in ordinary Hyacinth glasses in water, but the water should at first be allowed to barely touch the base of the bulb, and should be placed in a dark, tolerably warm cupboard, until roots are freely emitted, when they should be brought into the light. Various other hardy bulbs may now be potted for winter and spring flowering in the windows of sitting-rooms, &c., such as those of the Aconite, Crocus, Snowdrop, Snowflake, Jonquils, the pretty little dark blue Scilla bifolia, which is well suited for this purpose; also the Tritoleia uniflora, and the Ixias, Sparaxis, Tritonias, Babianas, &c., together with the following winter-flowering plants, which can be purchased at a cheap rate at any nursery establishment, and then, with ordinary care, will flower in winter in the windows of living rooms, viz., the Common and Harrison's Improved Musk, Hepaticas, Violets of different sorts, Cyclamens, single and double Chinese Primroses, Chrysanthemums, Acacias, Camellias, Bouvardias, dwarf kinds of Cytisus, Daphnes, Epiphyllums, Poinsettias, berried Solanums, and winter-flowering Heaths and Epacris, &c. While in windows where the aspect may not be favourable for flowering plants, an equally good effect may be produced by the use of the Saxifragas, Sedums, Sempervivums, Echeverias, hardy and greenhouse Ferns, and Lycopods. Amongst Ferns the best are the Adiantum or Maiden-hairs, Allosorus crispus or Parsley Fern, Athyrium or Lady Ferns, Blechnums, Polypodiums, and the common Scolopendrium or Hart's-tongue, all of which make excellent window plants, as do also Struthiopteris germanica, or the Ostrich Feather Fern, Trichomanes radicans or the Killarney Fern, and also the beautiful Todea superba, which should with the Killarney Fern be grown under a bell-glass. Possibly Ivy would not succeed well as an indoor climber; at all events some of the many greenhouse climbers might succeed better, such as the Rhynchospermum jasminoides, Hoya carnosa or some of the Hardenbergias, which would at least be green during winter. And for summer many soft-wooded climbing and free-flowering species can be selected, such as Rhodochiton volubile, Thunbergias, Tropæolums, Ipomæas, Maurandias, &c. Various little “conceits” to which allusion is made (p. 281) can easily be effected, such as placing Hyacinth bulbs in a wet sponge, sowing Grass or other small seeds in fancy baskets containing damp Moss, or covering bottles with moist flannel, and sowing Cress or other seeds, or by cutting off the tops of

a fine dark garden Beetroot, Carrot, or even Turnip. By placing these in a saucer containing a little water, in a somewhat warm room, they will soon develop delicate and very pretty foliage, which will remain in good condition for a considerable time.

P. GRIEVE.

#### NOTES OF THE WEEK.

**LILIUM RUBRUM VITTATUM.**—A plant of this lovely Lily, 18 in. high in a pot, has produced, with Mr. Barr, a flower measuring 11 in. in diameter. Besides being prettily spotted, each petal has a broad band of dark crimson running down its centre.

**ACIS AUTUMNALIS.**—This is among the choicest and most delicately beautiful of the hardy species of Acis. It grows about 6 in. high; the leaves are rush-like and few of them; the pretty nodding bell-shaped flowers on slender stalks are white and exquisitely tinged with a delicate blush. Mr. Wilson has it beautifully in flower in his garden at Heatherbank, Weybridge, where it forms one of the most remarkable of the plants now in flower.

**CHESTNUT-LEAVED BEGONIA.**—One of the best of all the Begonias that succeed well in the open air in summer is *B. castaneifolia*, which is used by Mr. Wildsmith at Heckfield in some of his prettiest arrangements on the terrace garden. It reminds one of *B. ascotensis*, but differs materially from it on account on its being of dwarfer and more compact growth, narrow leaves and somewhat smaller flowers. Seen in masses at Heckfield it is a charming bedding plant.

**CAPSICUM PRINCE OF WALES.**—Among the numerous autumn-berried plants this holds a prominent place in the gardens at Heckfield Place, Winchfield, for conservatory and indoor decoration. It is an extremely pretty variety, the fruits being about the size of large Cob nuts, bright canary yellow and shining, and these, contrasted with the deep green foliage, produce a charming effect. The habit of the plant is umbrageous, which displays the fruits to the best advantage. Some plants in  $4\frac{1}{2}$ -in. pots and covered profusely with berries are very handsome, and show how manageable a plant it is.

**RUDBECKIA NITIDA.**—The plant referred to by Mr. Hatfield in your issue for September 10 under this name appears from the description to be the *R. maxima*, which I have had in flower, and which agrees closely with the description of the Bickley plant. *R. nitida* is less tall and scarcely glaucous. *R. fulgida* has smaller flower-heads than those of *R. speciosa* (the correct name of the plant known in gardens as *R. Newmanni*), and has erect branches, those of the second species being divergent, with the foliage much more lobed than on *R. fulgida*, the leaves of which are mostly entire.—W. T. I.

**CUPHEA ZIMAPANI.**—I think you will find that the above is the correct name of the species described in THE GARDEN for September 10 under the name of *C. Zampani*. It is doubtless named in reference to the locality where it was collected by Roezl, viz., the town of Zimapan, in Mexico.—W. T.

**ANOTHER PRETTY COMBINATION.**—A wide-spread, well trained Cotoneaster, 12 ft. high, at the foot of which was planted the Great Bindweed, is now covered with oblique bands of living green, thrown across the dark background, adorned with pure white blossoms. These have reached, untrained, untouched, to the very top of their support, where the persevering tendrils twist themselves into little bunches, as if their aim was over and their duty accomplished.—A. G., *Mid-Scotland*.

**MARTYNIA FRAGRANS OUT OF DOORS.**—We were surprised to see a few days ago some remarkably fine specimens in flower of this plant growing in the open borders at the pretty vicarage garden at Pyrford, Surrey, and the more so remarkable, as the seeds were sown in the border, and afterwards not disturbed. We have been so accustomed to see this sweet-scented plant in the greenhouse that we have not looked for it out of doors. The Rev.

T. M. Ridsdale grows it every year in this way, and is more or less successful with it. The best plants are in an open place, so that they are not smothered by other plants.

**PICEA NOBILIS IN CONE.**—One of the most singularly attractive among the ornamental trees in the grounds of Viscount Eversley, Heckfield Place, Winchfield, is a noble specimen of this very handsome Conifer, bearing on its upper part a profusion of full-sized cones. The silvery grey tint of the foliage and the nut-brown colour of the cones afford a pleasing contrast, and render the tree conspicuous among a group of a similar character.

**CAMPANULA PELVIFORMIS.**—This is one of the finest of the autumn-flowering plants in Mr. Stevens's garden at Grasmere, Byfleet. The plant is extremely floriferous, the flowers large, and of a bright purple. It is a variety of *turbinata*, differing from it in the saucer-shaped or nearly flat flowers, instead of being cup shaped. The habit of growth is tufted, and it is apparently larger than the type.

MR. BRUCE FINDLAY, we hear, is knocked down with hard work arising out of the late great show, and needs rest which he is trying to get for a short time away from Manchester. This will explain any delay that may have occurred in the distribution of the prizes—a matter which will, however, probably receive attention not later than the beginning of next week.

MR. J. C. NIVEN.—We learn with much regret that our good friend, the curator of the Hull Botanic Gardens, is seriously indisposed.

#### NOTES FROM EDINBURGH.

**AUTUMN FLOWERS IN THE BOTANIC GARDEN.**—Clumps of *Colchicum speciosum* are amongst the prettiest autumn flowers now in bloom in these gardens. Mr. Lindsay says that *C. maximum* is still better, but it is not yet in flower. The white form of *Colchicum autumnale* is also very pretty. *Colchicums* would look all the better with a carpet of *Sibthorpia europæa*, *Selaginella Kraussiana*, or some such dwarf plant. The value of Heaths for the autumn garden is well shown both here and in some of the Edinburgh nurseries, where many kinds are still in full blossom. The white varieties of *Calluna vulgaris* are perhaps the most effective, but the double pink form is a beautiful little flower when looked at closely, and is worthy of a place amongst the choicest alpine plants. It is a very late kind, not being fully in flower even in the second week in September. *Galium rubrum* is a dark red, feathery rock plant, and might be used to give the cloud-like effect to a vase of flowers, for which the white *Gypsophila paniculata* is so well suited. *Hemerocallis Kwanso* fl.-pl. is an excellent variegated plant either for a rockery or mixed border. *Senecio speciosus* has outlasted many of the flowers that came into blossom as early as it began to flower in summer. *Montbretia Pottsi* is another good autumn plant for either greenhouse or open air, but it hardly equals in effectiveness *Tritonia aurea*, potfuls of which are now in full blossom in some of the houses. *Roscoe purpurea*, a beautiful Gingerwort, has a mauve flower curiously like an Orchid. Mr. Lindsay has raised a quantity of seedlings of another Orchid-like flower—*Utricularia montana*. A golden Thistle, *Scolymus grandiflorus* (now out of flower), is an excellent hardy plant about 4 ft. high. A large Tulip tree is still in blossom, and the Sugar Maple is bright with autumn tints, but its leaves are already beginning to fall.

IN THE LAWSON NURSERIES the following stove and greenhouse plants amongst others are well worth growing, viz., *Dracæna Baptisti*, *D. Barroni*, *D. Dennisoni*, *D. amabilis*, pale cream colour, *D. Fraseri*, *D. recurva*, dark, *D. Youngi*, dark, and *D. Gladstonei*, rose and brown and of good strong habit, one of the best. *Coleus Beethoven*, *C. Colibri*, *C. Mrs. George Simpson*, velvety purple shaded with crimson; *C. Miss Rosine*, perhaps the prettiest kind grown here, *C. Dr. Brushfield*, light, and the curious *Coleus The Shah*, with the lower half of the leaf dark, and



the upper half light. Associated with these were also *Ficus procumbens*, the leaf of which somewhat resembles that of an Oak, and *Ficus Parcelli*, the leaves of which are like those of the Spanish Chestnut, both leaves and fruit being variegated. The curious little *Ficus diversifolia* is also grown here and fruits well. The leaf of *Eucalyptus citriodora* when rubbed has a far pleasanter scent than that of *E. globulus*. *Sanchezia nobilis* is a good fine foliaged plant, the leaves having bright yellow veins. *Paullinia thalictrifolia*, trained up a pillar, is like a *Davallia* in the beauty of its foliage. *Cupania filicifolia*, the Rosewood tree, also resembles a finely cut Fern. Mr. Fischer says that it should be cut down every year. *Campsidium filicifolium* is a good climbing plant, with narrow Fern-like leaves. *Pteris geraniifolia* is rather like the common wild *Geranium* Herb Robert in foliage. *Adiantum palmatum* and *A. amabile* are good Ferns. *Passiflora Empress* *Eugenie* resembles, but is still finer than *P. Newmani*, the contrast between pale pink and deep blue in the flowers being beautiful. *Thunbergia fragrans* has pure white, sweet-scented flowers. *Plumbago rosea* makes an excellent contrast with *P. capensis*. *Martynia fragrans*, with flowers of a peculiar shade of pink, has glistening glands inside the upper part of the blossom; its fruit resembles a curved horn.

Too much can hardly be said of the beauty of *Picotee* Peter Sinclair; it is white, with a heavy edge of pink. There are a few other excellent kinds of *Picotees* and *Carnations* grown here, and also a collection of hardy annuals, some of which have a very good effect grown in masses. Amongst them are the following kinds, viz.: *Calandrinia grandiflora*, one of the prettiest; *Cacalia coccinea*, *Bartonia aurea*, the flower of which is like that of a large St. John's Wort; *Adonis flos*, with dark red flowers set in feathery foliage; *Nycteria capensis*, with white and brown flowers; and *Nycteria selaginoides*; the three latter, though not showy flowers, are very pretty; *Kaulfussia amelloides*, *Leptosiphon carmineus*, *Hordium japonicum*, *Viscaria cardinalis*, *V. oculata cœrulea*, and *Zinnia Haageana*, with less stiff flowers than those of most *Zinnias*. Sprays of blossoms of *Godetia* Lady Albe-marle, last over four weeks in water. If sown in spring, amongst spring flowers, and well thinned out, these annuals would probably do more good than harm to the spring flowers, and would add much to the summer and autumn beauty of the mixed border. C. M. O.

**Marigolds.**—I am induced by the approving note from "J. G." (p. 264) once more to refer to the wondrous floriferousness and beauty of our summer Marigolds. We have had more than a month of rain, wind, and indeed almost miserable weather. As a result nearly all kinds of bedding plants are out of gear; they look woebegone, and have very little bloom. But the Marigolds seem to revel in the moisture, as they do also in the drought. Of them all the most showy are the bushy dwarf French kinds. I have scores of plants here in full bloom not more than 14 in. in height, and perhaps 15 in. through, carrying from 30 to 50 fresh flowers, and most effective they are. Some are beautifully striped, others are chestnut, yellow, orange, and various mixed colours, and yet all this beauty can be got from a packet of seed sown in April. The very best strains always produce some single flowers, and in spite of all that is said in favour of single blooms no one will care to preserve a single flowered Marigold. In making up a mass of these dwarf French sorts it is therefore well to dibble all the plants into a spare bed until they exhibit a bloom each; then the singles may be thrown away, and the double ones, lifted with balls of earth, may be planted in the beds where desired. Even the very finest African Marigolds, of which we have hundreds of plants finely in bloom, will show this same tendency to reproduce almost one-third of single flowers. Of course these are pulled out, as both useless and ineffectual. A cluster of three or four fine African Marigolds carrying a

score of large orange or yellow blooms create a bit of colour that may be seen a mile away. Because of their unpleasant perfume many persons refuse to grow Marigolds, but the perfume is only noticeable when the flowers are handled.—A. D.

**Pruning Camellias.**—As an eager reader of THE GARDEN, I was glad to see an article on the Camellia, and I have read it with much pleasure, and I have no doubt many will profit by a simple consideration of all that Mr. Douglas has said. I should like to know what he has to say about pruning. I know the free use of the knife is advocated by some cultivators, especially by Continental growers. In England I fancy it is done very sparingly and grudgingly. Which is right? or are both systems right in their different climates? I saw two years ago in Mr. Hanbury's garden at Mentone a splendid specimen of a Camellia about from 15 ft. to 18 ft. in height, and, I fancied, clipped all round as close as a Yew in a churchyard. It had just been received from M. Huber, of Hyères, and was not allowed to bloom the first year. If the Camellia will grow out-doors in this country, as Mr. Douglas says it will, why should it not be pruned and kept in shape here also if it can be improved by that process?—O. S.

**Asparagus plumosus nanus.**—In the fine collection of plants exhibited by Messrs. Veitch at the International Show at Manchester, none pleased me more than this—the most lovely green-leaved plant I had ever seen. The finest Fern which anyone can possibly imagine does not equal it in delicacy. What its height may be I cannot say, but the plants in question were about 1 ft. high, and the little branching frond-like growths bore little resemblance to *Asparagus*, except in its most delicate character. As a pot plant it will be much sought after and highly valued, and for supplying greenery of the most lovely description it has no equal. It is said to do best in a stove or intermediate house, and I believe it is evergreen; but probably those having a longer acquaintance with it than I have may oblige us with fuller details as to its requirements than are here given.—CAMERIAN.

**Propagating Pinks.**—One of the largest stocks of Pinks for ordinary cutting which I have seen in any private garden is at Ditton Park, Slough. There they thrive wonderfully well, and a good stock of vigorous plants is kept up, young ones being raised from pipings every year. Mr. Lindsay, the gardener, mentioned that the most satisfactory method to ensure a free strike was to pinch out the shoots from soft wood with the finger and thumb and dibble them in thickly in sharp sandy soil under handlights. In this way they root freely. The old plan of cutting to hard wood and trimming off the lower leaves and the points of the others never produced one-half such good results as the method just described.—A. D.

**Two good old neglected plants.**—At the annual exhibition of the Tunbridge Horticultural Society, held on the 17th ult., a good specimen plant of *Chironia ixifera* and cut flowers of *Cæsalpinia pulcherrima* were shown, and their appearance awakened much interest among the gardeners present. It is only at this particular show that I see *Chironia ixifera* exhibited, and by one gardener only—Mr. J. Matthews, of Highfield House, Tunbridge. One may popularly describe *C. ixifera* as an exquisite pink *Linum*, and so pretty is it, and so good an exhibition plant does it make, that one wonders it is not more grown for the purpose. The first plant Mr. Matthews had was in a 6-in. pot; it was cut back as soon as it came into his possession, and grown on all the winter in an intermediate house, and at the end of May it was in a 12-in. pot, and measured 18 in. in height and quite as much through. It was then placed in the greenhouse to harden off, and set its flower buds, which it did abundantly, and came into flower for exhibition in August. When first shown by Mr. Matthews, a few years ago, it was the first plant of its kind ever seen in the district. It was only in this particular case that Mr. Matthews placed the plant in an intermediate house, and since he has obtained two or three good-sized specimens, they are altogether culti-

vated in the greenhouse. The plants shown by Mr. Matthews in August were cut back about the beginning of October, when they had done flowering, and were repotted early in spring. Its culture appears to be very simple. The compost in which it grows is made up of good turfy peat, with plenty of sand mixed with it. The pots require to be well drained, and the cultivator must be very careful not to over-pot, and when growing to give it good supplies of water, and keep it in as light and airy a position as possible. It need scarcely be stated that a good specimen, 2 ft. and more through, and covered with its pretty pink flowers, makes a very effective exhibition plant. Of *Cæsalpinia pulcherrima*, gardening books say but very little. There is a capital coloured plate of it as a frontispiece to the volume of the *Birmingham and Midland Gardeners' Magazine* for 1852. I had not seen flowers of it for years till they met my view at Tunbridge. It belongs to a genus of stove evergreen Leguminous plants. The flowers are produced in spikes, and formed of four distinct segments, with an erect lip, and a kind of crest of long stamens, a dozen or so in a group; the colour of the flowers is red, drab, chestnut, edged with golden yellow. It is a plant well deserving of being cultivated at the present day.—R. D.

**Quilled Asters.**—I have this season noticed in looking through gardens, both large and small, a marked absence of quilled Asters; why it is so I am at a loss to understand, except on the assumption that their merits are but imperfectly known. One sees in the large gardens especially beds of *Victoria* and *Truffaut's* *Pæony*-flowered Asters, but we look in vain for the very fine quilled types now grown, and which have been so much improved of late by *Betteridge* and others. Probably some gardeners have heretofore grown bad strains of Quilled Asters, from which little else but rubbish is obtained, and have given up their growth in consequence. But there is all the difference between bad and good things; and were they to grow a fine strain of quilled Asters and give them good cultivation, they would find them so useful for cutting from that they would be certain to continue to grow this strain for the same purpose. The thing is to begin with a good strain, and then save a little seed from the best of them. There is now a good number of fine varieties of the quilled Aster—some self-coloured and some bi-coloured. The latter are also known as fancy varieties, but all are beautiful. They are never coarse, which is more than can be said for the large incurved and flat-petalled Asters, and are far before them in symmetry and refinement. Those who grow them for exhibition present them in their best and most attractive character, but ordinary garden culture in good soil will produce excellent flowers. Those who have grown a good strain of these quilled Asters with some care, who had stirred the surface soil at times, and top-dressed it with some well decomposed manure, will be much gratified with the flowers produced. The past three or four weeks have been suitable for the full development of the blooms, which do not require continuous sunshine, but delight in heavy dews by night, and the cloudy, but on the whole fine, days with which cultivators have been favoured of late. Even the earliest blooms have been very satisfactory, and fine examples have been seen at exhibitions held at the end of August, while those daily arriving at maturity are of splendid form and substance. A gardener who grows the quilled Aster for cutting purposes said a few days ago they were the most useful things he had in his flower garden, for, to use his own expression, "he could cut and come again" as often as he pleased. The side blooms are especially useful for vases, while the delicate forms of *Snowball* and *Unique* in contrast with *Purple Prince* and other dark colours are very effective, and handy for filling the bottoms of the large stands so much in vogue for table decoration, and they are also available for use in other ways. I have mentioned a few of the named varieties, and there are several others equally fine. Cut blooms of quilled Asters last a long time with but little attention when placed in water.—R. D.



## TREES AND SHRUBS.

THE ROSE ACACIA (*ROBINIA HISPIDA*).

THREE of the finest of trees and shrubs introduced to us from North America are undoubtedly the Robinias. These are *R. Pseudacacia*, *viscosa*, and *hispida*. The first, the Common Locust or False Acacia, is too well known to need description, but not so with the other two that are scarcer in our gardens than one would imagine, seeing how fine they are and how long they have been introduced. They bear some resem-

has smoother branches; *nana*, another, is very dwarf, scarcely 1 ft. high; and *macrophylla* or *grandiflora*, the finest of all, having larger leaflets and small branchlets. Neither of these varieties grow to a great size, the largest being only about 20 ft. high when full grown, but they form highly ornamental shrubs or low trees when planted in sheltered situations. They are often grafted as high standards on the Common Locust, and in this form they may be planted with good effect among groups of shrubs with their heads overtopping the surrounding foliage. When not grafted they

## THE CONIFEROUS FORESTS OF THE CALIFORNIAN SIERRA.

THE coniferous forests of the Sierra Nevada are the noblest and most beautiful on earth. So short a time, however, has elapsed since they were first discovered, and so few comprehensive explorations have been made, that they are as yet but little known. Thousands of appreciative travellers have beheld them in the distance, stretching darkly along the range, the snow-clad summits towering imposingly above them—the great central plain of California outspread beneath; and many have passed through the



Robinia hispida.

blance to each other, but the finer of the two is the one of which the annexed illustration is a flowering spray. It differs in being dwarfer than *R. viscosa*, and in the leafstalks and branchlets being beset with short bristles instead of being clammy, also in the flowers being larger and produced in looser and longer racemes, those of *R. viscosa* being crowded in oblong racemes. There is also a kind called *R. dubia* or *hybrida*, which appears to be intermediate between *R. viscosa* and *Pseudacacia*. There are three well marked varieties of the Rose Acacia; one called *rosea* is taller growing than the type and

are years before they grow even 8 ft. or 10 ft. high; then their growth is somewhat straggly. All the Robinias flower about the same time, which is generally at the latter part of May and June, according to the season. A well flowered bush of the Rose Acacia or its varieties is equalled as regards display by few other trees or shrubs. Our drawing was made from a specimen supplied by Mr. Stevens, of Byfleet, who grows it well, his garden being sheltered and the soil good; so fine indeed was the branch he brought us, that it was at first difficult to determine which kind it was.

W. G.

lower and middle zones on their way to Yosemite Valley, obtaining fine glimpses of the yellow and sugar Pines and Silver Firs along the edges of roads and trails; but few, indeed, have gone far enough, and remained long enough, to gain anything like a fair conception of the real grandeur and significance of these glorious forests, as manifested in the harmonies of their distribution and varying aspects throughout the seasons, as they stand arrayed in their winter garb rejoicing in storms, putting forth their fresh leaves in the spring while steaming with resinous fragrance, or reposing heavy-laden with



ripe cones in the rich sun-gold of autumn. For knowledge of this kind one must dwell with the trees and grow with them, without any reference to time in the mechanical sense.

**The Distribution** of the general forest in zones is readily perceived. These extend, in regular order, from one extremity to the other, a distance of nearly four hundred miles; and however dense and sombre they may appear in general views, neither on the rocky heights nor down in the leafiest hollows will you find anything to remind you of the dank, malarial selvas of the Amazon and Orinoco, with their boundless contiguity of shade, nor of the monotonous uniformity of the Deodar forests of the Himalaya. The giant Pines, and Firs, and Sequoias hold their arms wide open to the sunlight, rising above one another on the mountain benches, marshalled in most imposing array, each species keeping its own appointed place, and giving forth the utmost expression of tree grandeur and beauty with inexhaustible variety and harmony.

The inviting openness of the Sierra woods is one of their most distinguishing characteristics. All the species stand more or less apart in groves or small, irregular groups, enabling one to find a way nearly everywhere, along sunny colonnades and through openings that have a smooth, park-like surface, strewn with brown needles and burrs. Now you cross a wild garden, now a meadow, now a ferny, willowy stream; and ever and anon you emerge from all the groves and flowers upon some granite pavement or high, bare ridge, commanding glorious views above the waving sea of evergreens far and near.

One would experience but little difficulty in riding on horseback through the successive belts, all the way up to the storm-beaten fringes of the Alps. The deep, precipitous canons, however, that come down from the axis of the range, at intervals of eight or ten miles, cut the belts more or less completely into sections, and prevent the mounted traveller from tracing them lengthwise.

This simple arrangement in zones and sections brings the forest, as a whole, within the comprehension of every observer. The different species are ever found occupying the same relative positions to one another, as controlled by their various capabilities, soil, climate, &c.; and so appreciable are these relations, one need never be at a loss in determining, within a few hundred feet, the elevation above sea-level by the trees alone; for, notwithstanding some of the species range upward for several thousand feet, and all pass one another more or less, yet even those possessing the greatest vertical range are available in this connection, inasmuch as they take on new forms corresponding with the variations in altitude.

Crossing the level treeless plains of the Sacramento and San Joaquin from the west, on reaching the Sierra foot-hills, you enter the lower fringe of the forest, composed of small Oaks and Pines, planted so far apart that not one-twentieth of the surface of the ground is in shade at clear noon-day. After advancing fifteen or twenty miles, and making an ascent of from two to three thousand feet, you reach the lower margin of the main Pine belt, composed of the gigantic Sugar Pine, Yellow Pine, Douglas Spruce, Incense Cedar, and Sequoia. Next you come to the magnificent silver Fir belt, and lastly to the upper Pine belt, which sweeps up the rocky acclivities of the Alps in a dwarfed, wavering fringe to a height of from 10,000 ft. to 12,000 ft.

It appears, therefore, that the trees forming the upper and lower margins of the general forest are somewhat alike, dwarfed and scattered by snow and frost, drought and sun-fire, while colossal proportions are attained only in the

middle regions, where both soil and climate are most favourable.

This general order of distribution, with reference to climate dependent on elevation, is perceived at once, but there are other harmonies as far-reaching in this connection that become manifest only after patient observation and study. Perhaps the most interesting of these is the arrangement of the forests in long, curving bands, braided together into lace-like patterns, and outspread in charming variety from one end of the range to the other. The key to this singularly beautiful harmony is the ancient glaciers; where they flowed the trees followed, tracing their wavering courses along canons, over ridges, over high rolling plateaux. The Cedars of Lebanon, says Hooker, are growing upon one of the moraines of an ancient glacier. All the forests of the Sierra are growing upon moraines. But moraines vanish like the glaciers that make them. Every storm that falls upon them wastes them, cutting gaps, disintegrating boulders, and carrying away their decayed material into new formations, until at length they are no longer recognisable by any save students, who trace their transitional forms down from the fresh moraines still in process of formation, through those that are more and more ancient, and more and more obscured by vegetation and all kinds of post-glacial weathering.

These studies invariably show that the soils on which the forests are growing were not produced by the slow erosion of the atmosphere, but by the direct mechanical action of glaciers, which crushed and ground them from the solid flank of the range, and in their slow recession at the close of the ice period, left them outspread in beds available for tree growth. For, notwithstanding the many august implements employed by Nature as modifiers and reformers of soils, the glacier thus far has been the only great producer. But however great the quantity thus produced, had the ice-sheet that once covered all the range been melted simultaneously from the foot-hills to the summits, the flanks would have been left almost bare of moraine matter, and these noble forests would as yet have had no existence. Numerous groves and thickets would undoubtedly have grown up on lake and avalanche beds, and many a fair flower and shrub would have found food and a dwelling place in weathered nooks and crevices, yet the range as a whole would seem a bare rock desert. The tattered alpine fringe of the present forest, composed of *Pinus albicaulis* and *P. aristata*, in many places extends above the upper limit of moraines upon lean, crumbling ledges; but when they have the opportunity, these little trees show themselves keenly alive to the difference between rich mealy moraine food and their ordinary meagre fare. The yellow Pine is also a hardy tree, capable of living on sunshine and snow, but it assembles in forests, and attains noble dimensions only upon nutritious moraines or other soil-beds derived from them; while the Sugar Pine and the two silver Firs, which form so important a part of the main forest belt, can hardly maintain life in any form upon bare ledges, no matter what the climate may be.

It appears, therefore, that the Sierra forests in general indicate the extent and positions of the ancient moraines quite as clearly as they do lines of climate. For forests, properly speaking, cannot exist without soil; and, since the moraines have been deposited upon the solid rock, and only upon elected places, leaving a considerable portion of the old glacial surface bare, we find luxuriant forests of Pine and Fir abruptly terminated by scored and polished pavements on which not even a Moss is growing, though soil alone is required to fit them for the growth of trees 200 ft. in height.

Having thus outlined the forest as a whole, I will now endeavour to sketch the species of which it is composed, excepting the Sequoia, which will be presented in a separate chapter.

**Nut Pine, Digger Pine** (*Pinus Sabiniana*).—The first coniferous tree met by the traveller in ascending the range from the west is the Nut Pine, remarkable for its loose, airy, tropical appearance, suggesting a region of Palms rather than cool, resinous Pine woods. No one would take it at first sight to be a Pine or Conifer of any kind, it is so loose in habit and widely branched, and its foliage is so thin and gray. Full-grown specimens are from 40 ft. to 50 ft. in height, and from 2 ft. to 3 ft. in diameter. At a height of 15 ft. or 20 ft. from the ground, the trunk usually divides into three or four main branches, about equal in size, which, after bearing away from one another, shoot straight up and form separate summits; while the crooked subordinate branches aspire, or radiate, or droop in loose ornamental sprays. The slender, grayish-green needles are from 8 in. to 12 in. long, loosely tasseled, and inclined to droop in handsome curves, contrasting with the stiff, dark-coloured trunk and branches in a very striking manner. No other tree of my acquaintance, so substantial in body, is in its foliage so thin and so pervious to the light. The sunbeams sift even through the leafiest trees with scarce any interruption, and the weary, heated traveller finds but little protection in their shade.

It grows only on the torrid foot-hills, seeming to delight in the most ardent sunbeats, like a Palm; springing up here and there singly, or in scattered groups of five or six, among scrubby white Oaks and thickets of *Ceanothus* and *Manzanita*, its extreme upper limit being about 4000 ft. above the sea, its lower about from 500 ft. to 800 ft.

The generous crop of sweet, nutritious Nuts which it yields makes it a great favourite with Indians and with bears. The cones are truly magnificent, measuring from 5 in. to 8 in. in length, and not much less in thickness, rich chocolate-brown in colour, and protected by strong, down-curling hooks which terminate the scales. Nevertheless, the little Douglas squirrel can open them.

Indians gathering the ripe Nuts make a striking picture. The men climb the trees like bears and beat off the cones with sticks, or recklessly cut off the more fruitful branches with hatchets, while the squaws gather them in heaps, and roast them until the scales open sufficiently to allow the hard-shelled seeds to be beaten out. Then, in the cool evenings, men, women, and children, with their capacity for dirt greatly increased by the soft resin with which they are all bedraggled, form circles around their campfires on the bank of some stream and lie in easy independence, cracking Nuts and laughing and chatting as heedless of the future as bears and squirrels.

***Pinus tuberculata***.—This curious little Pine is found at an elevation of from 1500 ft. to 3000 ft., growing in close willowy groves. It is exceedingly slender and graceful in habit, although trees that chance to stand alone outside the groves sweep forth long, curved branches, producing a striking contrast to the ordinary grove form. The foliage is of the same peculiar gray-green colour as that of the Nut Pine, and is worn about as loosely, so that the body of the tree is scarce at all obscured by it.

At the age of seven or eight years it begins to bear cones, not on branches, but on the main axis, and, as they never fall off, the trunk is soon very picturesquely dotted with them. The branches also become fruitful after they attain sufficient size. The average size of the older trees is about 30 ft. or 40 ft. in height, and 12 in. or



14 in. in diameter. The cones are about 4 in. long, exceedingly hard, and covered with a sort of siliceous varnish and gum, rendering them impervious to moisture, evidently with a view to the careful preservation of the seeds.

No other Conifer in the range is so closely restricted to special localities. It is usually found apart, standing deep in chapparal on sunny hill and canon sides where there is but little depth of soil, and, where found at all, it is quite plentiful; but the ordinary traveller, following carriage roads and trails, may ascend the range many times without meeting it.

While exploring the lower portion of the Merced Canon I found a lonely miner, seeking his fortune in a quartz vein, on a wild mountain-side planted with this singular tree. He told me that he called it the Hickory Pine, because of the whiteness and toughness of the wood. It is so little known, however, that it can hardly be said to have a common name. Most mountaineers refer to it as "that queer little Pine tree covered all over with burs." In my studies of this species I find a very interesting and significant group of facts, whose relations may be seen almost as soon as stated.

1st. All the trees in the groves I examined, however unequal in size, are of the same age.

2nd. Those groves are all planted on dry hill-sides covered with chapparal, and therefore liable to be swept by fire.

3rd. There are no seedlings or saplings in or about the living groves, but there is always a fine, hopeful crop springing up on the ground once occupied by any grove that has been destroyed by the burning of the chapparal.

4th. The cones, all of which are persistent through life, never discharge their seeds until the tree or branch to which they belong dies.

A full discussion of the bearing of these facts upon one another would perhaps be out of place here, but I would at least call attention to the admirable adaptation of the tree to the fire-swept regions where alone it is found. After a grove has been destroyed, the ground is at once sown lavishly with all the seeds ripened during its whole life, and which seem to have been carefully held in store with reference to such a calamity. Then a young grove immediately springs up out of the ashes—beauty for ashes.

**Sugar Pine** (*Pinus Lambertiana*).—This is the noblest Pine ever yet discovered in the forests of the world, surpassing all others, not merely in size, but also in kingly beauty and majesty.

It towers sublimely from every ridge and canon of the range, at an elevation of from 3000 ft. to 7000 ft. above the sea, attaining most perfect development at a height of about 5000 ft.

Full-grown specimens are commonly about 220 ft. high, and from 6 ft. to 8 ft. in diameter near the ground, though some grand old patriarch is occasionally met that has enjoyed five or six centuries of storms, and attained a thickness of 10 ft. or even 12 ft., living on—undecayed, sweet, and fresh in every fibre.

The trunk is a smooth, round, delicately tapered shaft, mostly without limbs, and coloured rich purplish-brown, usually enlivened with tufts of yellow Lichen. At the top of this magnificent bole, long, curving branches sweep gracefully outward and downward, sometimes forming a Palm-like crown, but far more nobly impressive than any Palm crown I ever beheld. The needles are about 3 in. long, finely tempered, and arranged in rather close tassels at the ends of slender branchlets that clothe the long, out-sweeping limbs. How well they sing in the wind, and how strikingly harmonious an effect is made by the immense cylindrical cones that depend loosely from the ends of the main branches! No

one knows what Nature can do in the way of Pine burs until he has seen those of the Sugar Pine. They are commonly from 15 in. to 18 in. long, and 3 in. in diameter; green, shaded with dark purple on their sunward sides. They are ripe in September and October. Then the flat scales open and the seeds take wing, but the empty cones become still more beautiful and effective, for their diameter is nearly doubled by the spreading of the scales, and their colour changes to a warm yellowish-brown; while they remain swinging on the tree all the following winter and summer, and continue very effectively beautiful even on the ground many years after they fall. The wood is deliciously fragrant and fine in grain and texture; it is of a rich cream-yellow, as if formed of condensed sunbeams. *Retinospora obtusa* (Siebold) the glory of eastern forests, is called "Fu-si-no-ki" (Tree of the Sun) by the Japanese; the Sugar Pine is the Sun Tree of the Sierra. Unfortunately it is greatly prized by the lumbermen, and in accessible places is always the first tree in the woods to feel their steel. But the regular lumbermen, with their saw-mills, have been less generally destructive thus far than the shingle-makers. The wood splits freely, and there is a constant demand for the shingles. And because an axe, and saw, and frow is all the capital required for the business, many of that drifting, unsteady class of men so large in California engage in it for a few months in the year. When prospectors, hunters, ranch hands, &c., touch their "bottom dollar" and find themselves out of employment, they say, "Well, I can at least go to the Sugar Pines and make shingles." A few posts are set in the ground, and a single length cut from the first tree felled produces boards enough for the walls and roof of a cabin; all the rest he makes is for sale, and he is speedily independent. No gardener or hay-maker is more sweetly perfumed than these rough mountaineers while engaged in this business, but the havoc they make is most deplorable.

The sugar, from which the common name is derived, is to my taste the best of sweets—better than Maple sugar. It exudes from the heart-wood, where wounds have been made, either by forest fires or the axe, in the shape of irregular, crisp, candy-like kernels, which are crowded together in masses of considerable size, like clusters of resin beads. When fresh it is perfectly white and delicious, but because most of the wounds on which it is found have been made by fire, the exuding sap is stained on the charred surface, and the hardened sugar becomes brown.

Indians are fond of it, but on account of its laxative properties only small quantities may be eaten. Bears, so fond of sweet things in general, seem never to taste it; at least I have failed to find any trace of their teeth in this connection.

No lover of trees will ever forget his first meeting with the Sugar Pine. In most Pine trees there is the sameness of expression, which, to most people, is apt to become monotonous; for the typical spiry form, however beautiful, affords but little scope for appreciable individual character. The Sugar Pine is as free from conventionalities of form and motion as any Oak. No two are alike, even to the most inattentive observer; and, notwithstanding they are ever tossing out their immense arms in what might seem most extravagant gestures, there is a majesty and repose about them that precludes all possibility of the grotesque, or even picturesque, in their general expression. The main branches are sometimes found to be 40 ft. in length, yet persistently simple, seldom dividing at all, excepting near the end; but anything like a bare cable appearance is prevented by the small, tasseled branchlets that extend all round them; and when these superb limbs sweep out symmetri-

cally on all sides, a crown, 60 ft. or 70 ft. wide, is formed, which, gracefully poised on the summit of the noble shaft, and filled with sunshine, is one of the most glorious forest objects conceivable. Commonly, however, there is a great preponderance of limbs towards the east, away from the direction of the prevailing winds.

No other Pine seems to me so unfamiliar and self-contained. In approaching it we feel as if in the presence of a superior being, and begin to walk with a light step, holding our breath. Then, perchance, while we gaze awe-stricken, along comes a merry squirrel, chattering and laughing, to break the spell, running up the trunk with no ceremony, and gnawing off the cones as if they were made only for him; while the carpenter-woodpecker hammers away at the bark, drilling holes in which to store his winter supply of Acorns.

Although so wild and unconventional when full grown, the Sugar Pine is a remarkably proper tree in youth. The old is the most original and independent in appearance of all the Sierra evergreens; the young is the most regular, a strict follower of coniferous fashions—slim, erect, with leafy, supple branches kept exactly in place, each tapering in outline and terminating in a sharp, spiry point. The successive transitional forms presented between the cautious neatness of youth and bold freedom of maturity offer a delightful study. At the age of fifty or sixty years, the shy, fashionable form begins to be broken up. Specialised branches push out in the most unthought-of places and bend with the great cones, at once marking individual character, which, being constantly augmented from year to year by the varying action of the sunlight, winds, snow-storms, &c., the tree is never again lost in the general forest.

The most constant companion of this species is the Yellow Pine, and a worthy companion it is. The Douglas Spruce, *Libocedrus*, *Sequoia*, and the White Silver Fir are also more or less associated with it, but on many deep-soiled mountain sides, at an elevation of about 5000 ft. above the sea, it forms the bulk of the forest. The majestic crowns, approaching each other in bold curves, make a glorious canopy through which the tempered sunbeams pour, silvering the needles and gilding the massive boles and flowery, park-like ground into a scene of enchantment.

On the most sunny slopes the white-flowered fragrant *Chamaebatia* is spread like a carpet, brightened during early summer with the crimson *Sarcodes*, wild Rose, and innumerable Violets and Gilias. Not even in the shadiest nooks will you find any rank, untidy weeds or unwholesome darkness. On the north sides of ridges the boles are more slender, and the ground is mostly occupied by an underbush of Hazel, *Ceanothus*, and flowering Dogwood, but never so densely as to prevent the traveller from sauntering where he will; while the crowning branches are never impenetrable to the rays of the sun, and never so interblended as to lose their individuality.

View the forest from beneath or from some commanding ridge-top; each tree presents a study in itself, and proclaims the surpassing grandeur of the species.

**Yellow Pine, Silver Pine** (*Pinus ponderosa*).—The Silver or Yellow Pine, as it is commonly called, ranks second among the Pines of the Sierra as a lumber tree, and almost rivals King Lambertiana in stature and nobleness of port. Because of its superior powers of enduring variations of climate and soil, it has a more extensive range than any other Conifer growing on the Sierra. On the western slope it is first met at an elevation of about 2000 ft., and extends nearly to the upper limit of the timber line. Thence, crossing the range by the lowest



passes, it descends to the eastern base, and pushes out for a considerable distance into the hot volcanic plains, growing bravely upon well-watered moraines, gravelly-like basins, arctic ridges, and torrid lava beds; planting itself upon the lips of craters, flourishing vigorously even there, and tossing ripe cones among the ashes and cinders.

The average size of full-grown trees on the western slope, where it is associated with the Sugar Pine, is a little less than 200 ft. in height and from 5 ft. to 6 ft. in diameter, though specimens may easily be found that are considerably larger. I measured one, growing at an elevation of 4000 ft. in the valley of the Merced, that is a few inches over 8 ft. in diameter and 220 ft. high.

Where there is plenty of free sunshine and other conditions are favourable, it presents a striking contrast in form to the Sugar Pine, being a symmetrical spire, formed of a straight round trunk, clad with innumerable branches that are divided over and over again. About one-half of the trunk is commonly branchless, but where it grows at all close, three-fourths or more become naked; the tree presenting then a more slender and elegant shaft than any other tree in the woods. The bark is mostly arranged in massive plates, some of them measuring 4 ft. or 5 ft. in length by 18 in. in width, with a thickness of 3 in. or 4 in., forming a quite marked and distinguishing feature. The needles are of a fine, warm, yellow-green colour, 6 in. to 8 in. long, firm and elastic, and crowded in handsome, radiant tassels on the upturning ends of the branches. The cones are about 3 in. or 4 in. long, and 2½ in. wide, growing in close, sessile clusters among the leaves.

The species attains its noblest form in filled-up lake basins, especially in those of the older Yosemite, and so prominent a part does it form of their groves that it may well be called the Yosemite Pine. Ripe specimens favourably situated are almost always 200 ft. or more in height, and the branches clothe the trunk nearly to the ground.

The Jeffrey variety attains its finest development in the northern portion of the range, in the wide fountain basins of the McCloud and Pitt Rivers, where it forms magnificent forests scarce at all invaded by any other tree. It differs from the ordinary form in size, being only about half as tall, and in its redder and more closely furrowed bark, greyish-green foliage, less divided branches, and larger cones; but intermediate forms come in which make a clear separation impossible, although some botanists regard it as a distinct species. It is this variety that climbs storm-swept ridges and wanders out among the volcanoes of the Great Basin. Whether exposed to extremes of heat or cold, it is dwarfed like every other tree, and becomes all knots and angles, wholly unlike the majestic forms we have been sketching. Old specimens, bearing cones about as big as Pine-apples, may sometimes be found clinging to rifted rocks at an elevation of 7000 ft. or 8000 ft., whose highest branches scarce reach above one's shoulders.

I have oftentimes feasted on the beauty of these noble trees when they were towering in all their winter grandeur, laden with snow, one mass of bloom; in summer, too, when the brown, staminate clusters hang thick among the shimmering needles, and the big purple burrs are ripening in the mellow light; but it is during cloudless wind-storms that these colossal Pines are most impressively beautiful. Then they bow like Willows, their leaves streaming forward all in one direction, and, when the sun shines upon them at the required angle, entire groves glow as if every leaf were burnished silver. The fall of tropic light on the royal crown of a Palm is a truly glorious spectacle. The fervid sun-flood

breaks upon the glossy leaves in long lance rays, like mountain water among boulders. But to me there is something more impressive in the fall of light upon these Silver Pines. It seems beaten to the finest dust, and is shed off in myriads of minute sparkles that seem to come from the very heart of the trees—as if, like rain falling upon fertile soil, it had been absorbed, to re-appear in flowers of light.

This species also gives forth the finest music to the wind. After listening to it in all kinds of winds, night and day, season after season, I think I could approximate to my position on the mountains by this Pine music alone. If you would catch the tones of separate needles, climb a tree. They are well tempered, and give forth no uncertain sound, each standing out, with no interference excepting during heavy gales; then you may detect the click of one needle upon another, readily distinguishable from their free, wing-like hum. Some idea of their temper may be drawn from the fact that, notwithstanding they are so long, the vibrations that give rise to the peculiar shimmering of the light are made at the rate of about two hundred and fifty per minute.

When a Sugar Pine and one of this species equal in size are observed together, the latter is seen to be far more simple in manners, more lithely graceful, and its beauty is of a kind more easily appreciated; but then it is, on the other hand, much less dignified and original in demeanor. The Silver Pine seems eager to shoot aloft. Even while it is drowsing in autumn sun-gold, you may still detect a skyward aspiration. But the Sugar Pine seems too unconsciously noble and too complete in every way to leave room for even a heavenward care.

**Douglas Spruce** (*Abies Douglasi*).—This tree is the king of the Spruces, as the Sugar Pine is king of Pines. It is by far the most majestic *Abies* I ever beheld in any forest, one of the largest and longest-lived of the giants that flourish throughout the main Pine zone, often attaining a height of nearly 200 ft. and a diameter of 6 ft. or 7 ft. Where the growth is not too close, the strong, spreading branches come more than half way down the trunk, and these are hung with innumerable slender, swaying sprays, that are handsomely feathered with the short leaves which radiate at right angles all around them. This vigorous Spruce is ever beautiful, welcoming the mountain winds and the snow as well as the mellow summer light, and maintaining its youthful freshness undiminished from century to century through a thousand storms.

It makes its finest appearance in the months of June and July. The rich brown buds, with which all its sprays are tipped, swell and break about this time, revealing the young leaves, which at first are bright yellow, making the tree appear as if covered with gay blossoms, while the pendulous bracted cones with their shell-like scales are a constant adornment.

The young trees are mostly gathered into beautiful family groups, each sapling exquisitely symmetrical. The primary branches are whorled regularly around the axis, generally in fives, while each is draped with long, feathery sprays, that descend in curves as free and as finely drawn as those of falling water.

In Oregon and Washington Territory it grows in dense forests, growing tall and mast-like to a height, it is said, of 300 ft., and is greatly prized as a lumber tree. But in the Sierra it is scattered sparsely among other trees, or forms small groves, seldom ascending higher than 5500 ft., and never making what would be called a forest. It is not particular in its choice of soil—wet or dry, smooth or rocky, it makes out to live well

on them all. Two of the largest specimens I have measured are in Yosemite Valley, one of which surpasses 8 ft. in diameter, and is growing upon the terminal moraine of the residual glacier that occupied the South Fork Canon; the other is nearly as large, growing upon angular blocks of granite that have been shaken from the precipitous front of the Liberty Cap near the Nevada Fall. No other tree seems so capable of adapting itself to earthquake taluses, and many of these rough boulder slopes are occupied by it almost exclusively, especially in Yosemite gorges moistened by the spray of water-falls.

**Incense Cedar** (*Libocedrus decurrens*).—The Incense Cedar is another of the giants quite generally distributed throughout this portion of the forest, without exclusively occupying any considerable area, or even making extensive groves. It ascends to about 5000 ft. on the warmer hill-sides, and reaches the climate most congenial to it at about from 3000 ft. to 4000 ft., growing vigorously at this elevation on all kinds of soil, and in particular it is capable of enduring more moisture about its roots than any of its companions, excepting only the Sequoia.

The largest specimens are about 150 ft. high and 7 ft. in diameter. The bark is brown, of a singularly rich tone, very attractive to artists, and the foliage is tinted with a warmer yellow than that of any other evergreen in the woods. Casting your eye over the general forest from some ridge-top, the colour alone of its spiry summits is sufficient to identify it in any company.

In youth, say up to the age of seventy or eighty years, no other tree forms so strictly tapered a cone from top to bottom. The branches swoop outward and downward in bold curves, excepting the younger ones near the top, which aspire, while the lowest droop to the ground, and all spread out horizontally in flat, ferny plumes, beautifully fronded and imbricated upon one another. As it becomes older, it grows strikingly irregular and picturesque. Large special branches put out at right angles from the trunk form big, stubborn elbows, and then shoot up parallel with the axis. Very old trees are usually dead at the top, the main axis protruding above ample masses of green plumes, gray and Lichen-covered, and drilled full of Acorn holes by the wood-peckers. The plumes are exceedingly beautiful. No waving Fern frond in shady dell is more unreservedly beautiful in form and texture, or half so inspiring in colour and spicy fragrance. In its prime, the whole tree is thatched with them, so that they shed off rain and snow like a roof, making fine mansions for storm-bound birds and mountaineers. But if you would see the *Libocedrus* in all its glory, you must go to the woods in winter. Then it is laden with myriads of four-sided staminate cones about the size of Wheat grains—winter Wheat—producing a golden tinge, and forming a noble illustration of Nature's immortal vigour and virility. The fertile cones are about ¾ in. long, borne on the outside of the plummy branchlets, where they serve to enrich still more the surpassing beauty of this grand winter-blooming Golden Rod.—*Scribner.*

#### Nurseries in the United States.—

A few years ago many of the large nurseries in America became overstocked with saleable trees, because landowners were restrained by the hard times from purchasing, and not because every one had trees enough to give a good supply of fruit. Taking all the country residents together in the Union, a comparatively small portion have as yet fully provided themselves with orchards and fruit gardens. Planting fruit trees is now going on again with increased attention, but one of the strongest influences in favour of setting out large orchards is the new markets which are opening, in the shape of the vast foreign demand,



and the immense home consumption in the canning and drying establishments, and in the manufacture of jellies and vinegar. The *Gardener's Monthly* stated, in its brief report of the late nurserymen's convention at Dayton, that it was estimated that the railroads alone carry annually 40,000,000 dollars worth of nursery products over their lines. A proof of this vast trade is shown by the insufficient appliances which these railroads seem to possess, and by the long and fatal delays to which large shipments were subjected during the past season.—*Country Gentleman*.

## THE FLOWER GARDEN.

### GLADIOLI AT MANCHESTER.

THAT Manchester and its neighbourhood is the home of florists' flowers, I think few will venture to dispute, and, despite the galvanising efforts which have very laudably been made to revive their culture in and about London, it is still likely to remain so; the north generally, indeed, seems to be their special happy ground; and whether it be those which for generations have been esteemed under that title, or those that have of late years acquired a reputation sufficient to class them amongst these, alike the same zeal and devotion to their interests are manifested. I believe the idea of classing Delphiniums, Phloxes, Antirrhinums, &c., as hardy florists' flowers, and Azaleas, Pelargoniums, &c., as greenhouse florists' flowers, is simply a mistake; but, on the other hand, the claims of the Chrysanthemum and the Gladiolus to that honour (for such in the eyes of all true florists it is esteemed) is as universally admitted. It did one's heart good and made one's blood glow to see the loving care with which florists bent over their Carnations and Picotees, shown as they were in bottles; and although I have always and do still protest against the dressing of which they are the unconscious victims, yet one cannot but admire the love with which they are regarded; and with regard to dressing, I heard an amusing dialogue at Manchester, the gist of which was that one of the speakers would have liked to have exhibited Carnations and Picotees, but that he could not dress them, "Oh!" but said the other, "there is old So-and-so, who is as good a dresser as I know, and he would readily come to you for so much a flower." When a flower requires not only that the grower should grow it well, but that also he should call in the services of another to twist and arrange his flowers for exhibition, there is, one may be sure, "something rotten in the state of Denmark."

The same zeal which has led to the continued and earnest culture of the older florists' flowers, has been shown in the growth of the Gladiolus in the north, and both in Scotland and the north of England I have seen as grand (if not grander) blooms of this splendid, but most capricious flower as ever I have seen anywhere, and the Manchester Exhibition was no exception to the rule. The season has been an exceptionally late one. Mr. Kelway wrote to me some time ago when I was contemplating a visit to his immense "cultures," that his were not in bloom, and that they would be at their best about the middle of September. I had myself entered, but I had not half-a-dozen in flower, and so was obliged to withdraw my entry. I was then very much astonished to find two stands of twelve exhibited from New-castle, which for purity of bloom and grandeur of spike I have rarely seen excelled; these were exhibited by Messrs. Thompson & Co. and Mr. Harkness. When I recollected that Shakespeare, which is one of the earliest flowers to bloom, and of which I generally have a spike on July 25 or 26, was not in flower a month later, I can come to no other conclusion than that these were grown under protection. A white flower, such as *Amalthée*, without a stain on it, must have been protected in some way; but even under the glazed cases, which many florists use for them, they could not have been in bloom

by August 24. I can, therefore, although I have no information on the point, and only therefore write on supposition, suppose that they were grown in pots under glass. I have grown them in that manner and they have flowered well, but I never take any particular care of them, but can quite readily believe that they would do well so; indeed, nothing would please me better could I afford it than to have a span-roof of glass open at the sides so as to admit thorough ventilation, and see how they would be affected by it, and whether it would baffle the disease with which I am more than ever convinced is the cause of so many dying. One very seldom hears of Potatoes grown in frames or greenhouses suffering from disease, the atmospheric influences which most unquestionably have to do with that most mysterious plague being powerless there. So with Tomatoes, which we cannot here grow now out-of-doors, but which do well under protection. And might it not be the same with the Gladiolus?

The long rows of stately flowers which Mr. Kelway exhibited, and which no one but he could do, were of great variety, beauty of colouring, and closeness of spike; but truth must be told, and I must say that I have seen him exhibit in much better form. There were no twelve of his that could compete with those of the Messrs. Thompson; but then Mr. Kelway could not possibly, with the immense number that he has to look after, take the same pains that those who grow only a small quantity can; and in this way amateurs, although they cannot grow in large numbers, may sometimes, by the very care which they are enabled to bestow, outvie those commanders of large battalions who in the largeness of their numbers find a perplexity smaller men do not. The greater part of those exhibited by Mr. Kelway were his own seedlings, and very many of them were quite equal to the French flowers, while there is, perhaps, a greater variety of colouring in them. It is somewhat remarkable that flowers raised 20 years ago, such as Meyerbeer and Adolphe Brogniart, still maintain a foremost place, other flowers, such as *Hesperide* and *Victor Jacqueminot*, which are evidently of the same type, certainly not equalling them; and to those who speak of the Gladiolus degenerating, I should like to show blooms of Adolphe Brogniart, which are as fine in size, substance, and colouring as ever it was. So also with Meyerbeer and others; and when care is taken to secure young bulbs, I am quite sure that flowers will continue to preserve their character for a number of years.

Why will the Crystal Palace Company persist in having their exhibitions on the most inconvenient days in the whole week? Their large shows are always held on Saturdays; and as they have made their autumn show on a Monday, they may possibly think that it is only absurdly particular people who object to Sunday work, but in this they are mistaken; and if ever the National Rose Society removes from there, this will be one of the chief causes of their so doing; the same reason hindered exhibitors who would otherwise have put in an appearance from going there. I wished to exhibit Gladioli, and could have done so, but the day of the week made it impossible, nor was I able to be there, but I see that the Messrs. Kelway were the only exhibitors, and this is a sad and very convincing proof of two things—the difficulty of keeping together a collection of these flowers, owing to the disease to which they are subject, and the little interest that florists' flowers excite in the south. Many are the growers of Gladioli I have known; they have entered on the pursuit with apparent zeal, but their failures have disheartened them, and they have abandoned it, while the northern growers have kept steadily "pegging on." As to the advice so freely given of growing seedlings and abandoning the named varieties, no true florist will listen to this; moreover, the benefit is not perceptible; seedlings are affected in the same way, and, of course, if one gets a very good one, you are as anxious to keep it as if it were a named sort; yet after all we cannot give them up; it is the queen of autumn flowers. The Hollyhock is more stately, the Dahlia more

brilliant, but for grace, elegance, and delicacy of tint there is no flower to compete with it; and if the Rose be the queen of summer, the Gladiolus may well claim to be the queen of autumn.

DELTA.

**Hardy water plants.**—Would some of the readers of THE GARDEN kindly give me instructions how to proceed in the following case? We have a large tank or pond here in which I want to grow *Aponogetons*, *Nymphaea alba*, and *Callas*, and also to have some gold fish in the water. The pond is 4 ft. 7 in. deep in the centre, sloping to about 3 ft. at the sides. In the centre I have placed a large pot of *Callas* raised on a pedestal to about 3 in. below the surface, but the other things I should like to plant in the pond. I have a small *Nymphaea*, and shall get some plants of *Aponogeton*, most likely small ones. I may say I have an unlimited supply of rocks and pebbles. My own idea is to fill the pond with these to about 2 ft. 6 in. from the surface, filling in between with leaf mould or some other soil, but I should feel grateful for advice.—*ENQUIRER*.

**Pulmonaria saccharata grandiflora.**—This is a useful summer and autumn fine-foliaged plant. It blooms in the spring, and as its flowers are quite red is for the time very effective; when these die off, up comes a fresh batch of leafage, and soon the plant assumes and maintains all through the summer and autumn a very handsome tuft or clump of beautiful leafage, green in hue, and abundantly spotted all over with grey; indeed, will compare favourably with any *Dieffenbachia* in cultivation. The leaves droop gracefully outward, and big clumps at times have a very pleasing appearance. It should make a first-rate plant to edge beds of dwarf Dahlias or similar plants.—*A. D.*

**Salviagesneræflora as a border flower.**—Under glass this *Salvia* is neither so floriferous nor the flowers so continuous as planted out in beds or borders. Last year I tried a few plants outside, and this year many more, and with most satisfactory results. At present they are a mass of bloom, need I say of the reddest crimson, relieved by those rich, velvety, downy filaments peculiar to the *Gesnera*. They, too, like *Begonias* and many others, are too often nursed. Flowers seem unaffected by rain, and outside assume an agreeable bushy habit. I think it for this purpose superior to *S. splendens*, *S. sanguinea*, or any of the new varieties I noticed.—*W. J. M., Clonmel*.

**Single Dahlias.**—These do not appear to be much known yet, but there are many indications that they will soon be extensively grown. Until last spring we had none of them here, but at that time we were induced to try a few; they are now in bloom, and more interesting or beautiful flowers we have not in the garden. Being new, small, and precious, we did not trust the roots in the open soil, but put them in pots and placed them in the open air. Until lately they grew robustly here in much the same way as the ordinary Dahlia, gaining a height of about 2 ft., and when they began to bloom they were moved into a cool conservatory. It is here they are now flowering, and the blooms are opening in great perfection. They are covered with buds and promise to bloom much longer than we could expect them to do out of doors. Their cultural requirements are in all respects the same as those needed by the common double Dahlia. The collection of these beautiful Dahlias shown at Manchester by Mr. Ware, of Tottenham, was admired by all who saw them, being fine both in colour and form.—*CAMBRIAN*.

**Androsace sarmentosa.**—The growth of this beautiful alpine is very rapid. Of two single crowns which bloomed with us last June, one has twenty fresh strong crowns and the other twenty-one, all of which are rooted, and should be blooming plants next season. If they increase at the same rate for another year, we shall have a pretty large stock, and the larger the better.—*BROCKHURST, Didsbury*.



## GLADIOLI AT LANGPORT.

ONLY those who visit the nurseries of Messrs. Kelway, at Langport, can form an idea of the demand which exists for these charming flowers. Something over 20 acres of land are there occupied with them in various stages of growth from seedlings of the present season's sowing to the large show flowers from which the exhibition spikes are cut. The Messrs. Kelway are owners of a considerable quantity of land at wide distances apart, a circumstance which gives them an opportunity of changing the position of the beds of Gladioli as often as they think necessary, and they use this opportunity freely, for it took us several hours to drive from one spot to the other and examine the stock of flowering plants. I shall not soon forget the glorious sight that met our view as we looked down from an elevated position on 8 acres of these noble flowers all in bloom, the breadths of whites and reds standing out conspicuously with all the intermediate shades from yellow to purplish crimson blending beautifully in the distance. There are 1000 sorts under probation, and I was surprised to see how few had obtained the required number of marks to place them in the front rank, so particular are Messrs. Kelway about the merits of their seedlings, and this accounts for the limited number of new flowers available every year for sending out.

**Varieties.**—In looking over the stock available for distribution this autumn, and to which about 14 acres of land are devoted, including named and mixed varieties, I took notes of a few of the most striking flowers as follows: Auster, salmon, with deep scarlet stripes; Arimus, scarlet, with carmine shading; Antrobus, light ground, with rose stripes and carmine throat; Chamont, fine crimson, shaded with purple; Ptolemy, flesh colour, with purple stains; Hemon, sulphur ground, flaked with carmine; Eanus, light plum colour, white lines and crimson throat; Matinus, dark pink, purple throat; Fireball (distinct from Ball of Fire), striped deep lilac; Tolumnus, sulphur ground, rose veins, crimson stripes; Yellow King, an old variety, but one of the best in its way; Plitoria, white ground, with purple throat; R. J. B. Camm, creamy white; Archelaus, lilac striped. Besides these I noticed Bruce Findlay, the Rev. M. J. Berkeley, and Earl Morley, all distinct and good, but above them was the Duchess of Edinburgh, a variety that always throws up a noble spike, and associated with it was Acrapio, with fourteen flowers, fully expanded, on one spike.

**Cut blossoms.**—Besides the business done in dry bulbs a large trade is done with flower-spikes for decoration, and they are sent to all parts of the country, 1000 spikes being sent every week to the Alexandra Palace; over 6000 spikes had been sent away the five days preceding my visit on September 7. Notwithstanding so great a demand on the resources, there was an abundance still left; in fact, there were Gladioli everywhere, and one felt inclined to ask where all the corms could go to, but the trade is not confined to England only; on the contrary, Gladioli are sent by this nursery to all the colonies, and to meet the requirements of the trade a new warehouse is just being finished to give more room for storing the bulbs and to facilitate expeditious packing.

**Seedlings.**—Last year being favourable for saving the seed of Gladioli, there is a large breadth of thriving young plants in vigorous health that will in due time ripen off corms, and from which some superior varieties are expected. One or two men are employed in fertilising all the best flowers, and a careful record is kept of all the most important manipulations and of the best breaks—a record being useful for future guidance.

J. C. C.

## CARNATIONS AND PICOTEE.

**Dressing.**—I have read with much interest what has recently been written about these flowers in *THE GARDEN*. As to the question of dressing, that is a matter that may well rest for the present; certain it is that, however much it

may be objected to, exhibition flowers will always be dressed. A single variety of a Carnation does not require dressing; but a very double flower that has so much of the art in it "that does mend Nature" requires that the petals be placed in positions in which they can be seen to the best advantage, and that the pod be tied to prevent its bursting, so that the petals should not hang in a dishevelled mass. Another delusion is that if a man is a good dresser, he is sure to win the prizes. That is not so. Skillful cultivation is as much needed to produce good Carnations as it is to produce good Grapes, Strawberries, Orchids, or anything else. This I state confidently, having been a successful exhibitor with all of them.

**Best time to purchase.**—I have been tempted to say a few words respecting the Carnation and Picotee now because this is the right time of the year for those who contemplate forming a collection to purchase their plants, or if a collection has been already formed to add to it. The plants can be sent to any part at this season with safety, and at less expense than in spring. The rooted layers are carefully removed from the parent plants with as many of the roots attached as possible; a little damp Moss is placed round the roots, and then they are wrapped up in small sheets of newspapers, with the labels attached to them. As soon as they are received they should be potted singly in 3-in. pots, or two in a larger size. The best place for them is a cold frame, and the lights must be kept rather close for a few days, until they have become established. After that they require but little attention until potting time occurs in spring. We generally find time to look over them twice during the winter, in order to remove decaying leaves, weeds, or green mould on the surface of the soil. Water must not be applied too freely, but none of the plants ought to be allowed to suffer from want of it; they may be injured by having too little as well as too much.

**Air** they must have in abundance. The lights may be removed night and day, even at mid-winter if there is no danger from rain or severe frost. A damp stagnant atmosphere with too much water at the roots would do more injury than any amount of frost. This treatment is required up to the end of March, when the plants must be shifted into their flowering pots, and here there is some danger of making a mistake by placing them in too large pots; 7-in., 8-in., and 9-in. ones are the best sizes. One strong plant may be put into a 7-in. pot, a pair of weakly growing ones into the middle size, and a pair of stronger ones into the 9-in. pot. If one happens to have but a single pair of some choice variety, it is best not to risk them both in one pot, as it is not improbable that a wireworm may escape the most vigilant search, and become an inmate of the pot, when the chances are that both plants may be destroyed before the marauder is discovered. After repotting replace the plants in the frames in which they were wintered until they have formed roots. If they are placed in the open air, exposed to all the rain that falls, they may be injured before roots have struck into the new compost. I do not expose my plants to the open air until they are fairly established. They are then best out of doors until the flowers open, when they should either be protected by canvas shading or, better still, be placed under glass. They must be shaded from too much sun, but too much shade will also be injurious. We in the south are most successful with plants grown in pots; and yet in some districts in the north the choice exhibition varieties are grown in the open borders, and under such circumstances they produce flowers that can compete favourably with the more delicately nurtured favourites of our warmer clime.

**Seedlings** are so easily raised, too, that every grower of Carnations and Picotees should also be a raiser of seedlings; first, having saved their own seeds, as it is not so interesting to watch the development of plants, the parentage of which is unknown. The crossing of the flowers is one of the simplest operations in gardening. Select richly coloured, well shaped flowers for the pollen parents, and do not intermix the classes.

The seeds may be sown in frames early in April, and with careful management they will make strong plants by the end of the season, when they should be planted out in beds where they will flower well the following year.

**Town flowers.**—It cannot be too widely known that the Carnation and Picotee are well adapted for growing in or near large towns. Evidence of this may be seen in the wonderful results obtained by Mr. Dodwell, at Larkhall Rise, Clapham. During the last three or four years he has made greater additions to the various classes of Carnations and Picotees than all the other growers combined have accomplished in the same period. Some of the classes have been quite revolutionised by him; notably the scarlet bizarre class. Mr. Dodwell sent out a very good selection last year, some of them even surpassing that fine old variety Admiral Curzon. One of them named Fred was good enough to obtain the prize as the best Carnation exhibited in London this year. There are other distinct and good flowers to be seen out this autumn well worthy to be added to the most select collections. Harry Turner and James McIntosh, for instance, are good growers, and yield blooms equal in quality to those of Admiral Curzon. To the other classes good additions have also been made, but it would be invidious to particularise. Mr. Turner's catalogue likewise contains the names of some good flowers that made their mark last blooming season, and he also wisely advises his customers to purchase in the autumn, as soon as the plants are ready, which will be about the 20th of the present month. J. DOUGLAS.

**Carnations and Picotees.**—I send you specimens of these grown from seeds got in Paris. Some are from plants two years old, the rest from plants one year old. They have respectively been in the ground during the two last severe winters, when the thermometer was as low as zero. My practice is to plant out the layers when well rooted into the bed where they are to flower, and I very seldom lose a plant. Potting them, I think, makes them delicate.—J. H., *Edinburgh*.

**Propagation of *Arnebia echioides*.**—Lately I have heard from several gardeners that, owing to this plant refusing to be propagated either from cuttings or seeds ripened in this country, it was likely to remain very rare. Of course many readers of *THE GARDEN* know this to be a mistake; but as there may be others not acquainted with the manner in which this plant may be freely increased, I will say a word or two on the subject. Last autumn we had a plant on the rockery, and, being desirous of increasing our stock, I took off from about the outside of it all the young shoots, cutting them right from the main one. These were put into small pots in a little sandy soil and placed in a little bottom heat, and in less than a month we had a fine batch of plants, every shoot having rooted and pushed into rapid growth. They were hardened off, and placed in a cold frame. The old plant showed no signs of suffering from the stripping treatment it had undergone, and this year it has flowered abundantly. Has anyone succeeded in inducing this plant to ripen its seeds in this country?—B.

**Single Anemones.**—I have just had dibbled out a few thousands of seedling single Anemones raised from seed sown as soon as ripened in the summer. I selected and marked the finest and richest coloured flowers, and therefore hope to have in good time a very brilliant display of bloom. It is, I know, a common practice to sow in the spring, but so many things need sowing and attention then, that I preferred to sow at once when the seed was ready. As a consequence I have all the seedlings strong and making root, and if they do not bloom next spring, and that would be expecting too much, they at least are not giving further trouble and a season is saved. No doubt next autumn the roots will want more space, and that they can have. Excited by the early rains, old roots have already sent up robust foliage, and we may look for early bloom. I sowed the seed in fine sandy soil in shallow boxes and



placed it under glass. It soon germinated, and has given little trouble. It would be of good service to our spring gardens if the Anemone could be largely restored to them. It is, indeed, marvellous that such a beautiful garden flower, so hardy and giving so little trouble, should be so little grown. There has been much demand for some of the alpine species, and beautiful most of them are, but for abundance of bloom and rich and varied hues of colour, the garden forms of *A. coronaria* doubtless excel them all. Forty years since single and semi-double Anemones were largely grown and were most beautiful; they well deserve resuscitation: the named double kinds are most superb things. Pans of these grown in colours would make a brilliant display.—A. D.

## RAMBLES IN DEVON.

### Winslade Park.

WINSLADE is one of the best kept places in Devon. The mansion, a large square Grecian structure, occupies a rather elevated site in a well-timbered park of about 100 acres. The marks of antiquity so plainly visible in some of the Devonshire seats are absent here, Winslade being of comparatively modern date. But the planting has been skilfully done, and the trees, being well cared for, are growing into handsome specimens. The soil is a rather heavy loam, resting on a deep bed of red clay. A short distance north of the hall, standing in prettily planted grounds, is the church, and from this point a path leads through a long glade or avenue of Conifers, consisting chiefly of *Cupressus*, past a *Rhododendron* encircled croquet-ground with a cork-lined summer-house in the midst of its southern boundary, and onwards through a belt of thinly-planted timber, till the lodge is reached at the extremity of the park. I was pleased to notice that amid the rough Grass and other native plants an effort was being made to naturalise some of the most suitable kinds of hardy plants by planting groups and patches of them of sufficient size to take care of themselves when well established. But the chief interest of the place to a gardener lies on the southern and eastern sides of the mansion; there the ground slopes down through a series of low terraces till the river is reached, some 300 yards or so away. The wall of the upper terrace is adorned with vases, which are planted very effectively with bronze-leaved *Pelargoniums*, conspicuous among them being the Black Knight. On the upper terrace under the windows, divided into two parts by a central path, is a chain pattern planted with low-growing fine-leaved plants. On the second terrace is a very pretty design of beds in two equal parts divided by the path and planted effectively with flowering plants. The whole of the beds were in good order, and the closely shaven turf as green as if there had been no hot burning sunshine to dissipate the colour, a circumstance due to regular watering. On the Grass by the path at regular intervals are some very handsome pyramidal golden Yews about 8 ft. high and well furnished.

The Conservatory, a handsome building on the east side of the mansion, 65 ft. long and 40 ft. wide, contains many very fine specimens of Palms, Tree Ferns, Musas, &c., as well as of flowering plants. One plant of *Bougainvillea glabra* in an elevated vase was especially noticeable from its size and profusion of its long wreaths of mauve bracts. The roof was ornamented with long dangling shoots of the two *Tacsonias* Van Volxemi and exoniensis mixed, and amid their falling wreaths were suspended by chains baskets of great size planted with overhanging Ferns, conspicuous among them being some huge plants of the Maiden-hair

(*Adiantum cuneatum*). The back wall was treated in a different manner from what is generally met with. Usually in the case of such houses the back wall is a weak point, the covering creepers being generally shabby and unsatisfactory. Here, on the contrary, the back wall is made specially interesting by suspending against its face a collection of basket-grown Ferns, introducing colour by means of *Begonias*, *Panicums*, &c. In a corner, where the light was of a very subdued character, was a case of filmy Ferns in good condition, especially *Trichomanes trichodeum* and *Todea superba*. It sometimes happens that people with tree Ferns and low-roofed houses are at a loss to know what to do with them when they get large and tall. Some two or three years ago, Mr. Craggs, the gardener at Winslade, had a plant of *Cyathea medularis*, whose long arching fronds had reached the top of even the lofty conservatory here. He had a tub made in two pieces that could when fixed upon stout supporting stakes be bolted together. This tub was fixed round the trunk of the Fern, about 5 ft. from the ground, filled with proper material and regularly watered. In eighteen months the stem had thrown out roots which had established themselves in the soil in the tub, and then the trunk below the tub was gradually cut through close beneath the bottom of the tub, until at last the plant was disconnected altogether from its former roots. This Fern has since done well.

Westwards from the conservatory and the terrace the ground has been treated more picturesquely. First comes a small Rosery, then a dell in which there is a pond with Water Lilies, and a small tree covered island; to the right is a small rockery, and on one of the mounds is a very handsome plant of *Retinospora pisifera aurea*, 12 ft. high and about 8 ft. through. On the lawn near is a well-furnished specimen of *Abies clanbraziliiana*, 6 ft. high and 10 ft. through at the ground line. Further on we reach the banks of the river. A brook, one of the tributaries of the Clyst, which flows through the low grounds at a little distance, was diverted from its course and opened out in front of the mansion into a wide piece of water furnished with a cascade. This artificial lake forms the boundary to the ornamental grounds; on the other side is a wide stretch of grassy meadow. A gravel path 400 yards long and 14 ft. wide, bounded on the river side by a low balustrade wall ornamented with vases of *Pelargoniums*, and on the other by a mixed border of shrubs and flowers, backed up by a Yew hedge, forms a grand promenade along the bank. At the northern end of the terrace the river is spanned by an ornamental stone bridge.

**Forcing department.**—The first thing that attracts attention is some well grown plants, seven in number, of *Kalosanthes coccinea*, the worst plant not less than 4 ft. through, and fit for an exhibition table. Near here on a coal ash bed is a fine lot of Azaleas, *Acacia Drummondii*, and several plants of *Dahlia imperialis*, which is a useful conservatory autumn-flowering plant; it grows 10 ft. high, and somewhat resembles an *Aralia* before the flowers appear. It must be housed before frost comes. Many other interesting plants are standing about or are sheltered in a cold pit near, including a good batch of *Amaryllis* and *Epiphyllums*, and large panfuls of *Achimenes* are coming on for late blooming; *Hydrangea paniculata grandiflora* should be more grown than it is. It is excellent for pot work. In the pits were large numbers of *Veronicas*, *Hydrangeas*, *Gloxinias*, *Torenia*, young half specimen plants of *Bougainvillea glabra*, and a general mixed collection of autumn and winter flowering plants. In the open air near were several handsome specimens of the

very striking *Lasiandra macrantha floribunda* in great beauty, and a good collection of *Chrysanthemums*.

**Vines.**—I noticed in a long low pit rather a triumph in pot Vine culture. The Vines were growing in 14-in. pots, which I was told they had occupied for seven years, and had each year borne good crops of fruit, the strength of the Vines being kept up by liquid manure composed of guano and nitrate of soda. The crop that was ripe at the time of my visit (middle of July) was certainly a creditable one. Mr. Craggs said he used the two substances named at every watering in the proportion of one of nitrate to two of guano, and that he used this manure for nearly everything that required a stimulant varying its strength to suit the different subjects, in some cases and at some seasons giving it weak, at others using it strong. I can say from my own observation that not only the pot Vines, but those also in a low lean-to house, and young Vines bearing their first crop in a new span-roofed house all bore marks of careful management and judicious feeding. In discussing the question of how far Vines should be trained from the glass, Mr. Craggs spoke in favour of increasing the distance commonly employed, and I noticed that the Vines in the lean-to were at least 2 ft. from the glass, and finer, cleaner foliage could not be desired. In the new houses the young Vines were still further from the glass, and in modern houses where large squares of glass are used and not much woodwork to shade the plants, a modification of the old practice of training near the glass is, I am convinced, desirable. Pines are well, though not extensively, grown, and a couple of houses are devoted to a healthy-growing collection of Orchids.

In another span-roofed house is a collection of Heaths, many of them forming nice little well-flowered specimens. Heath growers, as a rule, like to have their plants near the glass, but here they were standing on the floor, and the house rather a lofty one, but I should add the glass descended to the ground line, or nearly so, and the ventilation was absolutely perfect. To this perfect ventilation and the abundance of light may be attributed the health of the plants thus situated.

**Orchard house.**—In the matter of glass structures, Winslade is a well appointed place, much of it having been recently erected. To the latter category belongs the new range of orchard houses, which are 180 ft. long and 15 ft. wide in four sections, devoted respectively to early Peaches, Plums, and late Peaches, Figs and Apricots. There were trees trained on the back wall and cross trellises all down the front of the house reaching to the back path. The front of the houses being low, the cross trellises did not appear to offer much scope for vigorous trees, but Mr. Craggs said he should allow them to extend bush-fashion across the spaces.

E. HOBDAV.

## DOUBLE FLOWERS.

THE Hertfordshire Natural History Society are to be congratulated on securing for their transactions so admirable a *résumé* of the facts which illustrate the homologies of the organs of flowering plants as the paper by the Rev. G. Henslow, recently issued.\* The whole essay will well repay perusal, since it consists of a tabulated summary of numerous facts of structure with numerous references to the literature of the subject. Though there are many points which invite discussion, we will content ourselves with extracting, as peculiarly interesting to flori-

\* "Homology and Analogy of Plant Organs." Transactions of the Hertfordshire Natural History Society. Vol. I., part 2. December, 1880.



culturists, the part relating to double flowers (p. 66). "What are popularly called double flowers may have very different origins. . . . It often happens that a flower, though apparently quite as double as some other, which may be entirely so, is not really like the latter, hence the following varieties may be distinguished: 1, carpels only petaloid—*Anemone nemorosa*, *Viola*, and *Gentiana Amarella*; 2, stamens multiplied and more or less petaloid, with the pistil normal or more or less unchanged—*Tacsonia*, white *Hyacinth*, Chinese *Primrose*; 3, stamens with the pistil foliaceous of two leafy carpels—the double *Cherry*; 4, stamens with the pistil replaced by a tuft of green leaves—the purple *Hyacinth*; 5, petals multiplied with no change in stamens and pistil—double *Stocks*; 6, petals with entire loss of stamens and pistils—*Wall-flowers*, *Ranunculus*, *Rose*, and many of the garden double flowers; 7, Hose-in-hose forms—1, calyx and corolla repeated one within the other—*Helianthemum vulgare*; 2, calyx petaloid—*Primula*, *Mimulus*, *Azalea*, *Campanula persicifolia*; 3, a catacorolla—*Campanula*; 4, inner perianth whorl resembling the outer—*Iris*, *Orchis*. It must not be supposed that the above cases never vary. It is more than probable that they do. . . . The conversion of stamens or carpels to petals may be incompletely effected, so that just as a distinction between virescence and foliation may be made when they become green, so petaloid or truly petaline may be recognised as corresponding degrees of metamorphosis, as in the following cases: 1, connective only petaloid, *e.g.*—*Primula*, *Fuchsia*, &c.; 2, filament only normal, *e.g.*—*Nymphaea*, *Atragene*; 3, filament only abnormal, *e.g.*—*Hibiscus rosasinensis*. Double composite flowers are due (1) to the conversion of the disc pentamerous tubular florets into ligulate trimerous florets by the suppression of two petals and all the stamens, while the arms of the style undergo a reduction in size. Or they may be caused (2) by elongation of the tube with the five-toothed border more or less suppressed. This furnishes the quilled form. Or (3) the border may be also abnormally enlarged; hence arise the dragon forms of *Chrysanthemum*. In the double *Poinsettia*, which is remarkable for its brilliant foliage, the doubling merely consists in the increase of the number of coloured leaves obtained in some cultivated varieties."

G. S. BOULGER.

144, Kensington Park Road.

#### PLANT LABELS.

MR. WOOD (page 202) objects to paraffin on labels as liable to injure roots. Paraffin suggested by the committee is when cold a white or nearly white hard substance which can injure nothing. Mr. Wood apparently thought of paraffin oil, a very different substance. The label prize brought out a good many labels new to me. I enclose one of Holly and one of Box wood, which for some purposes should be useful. Some Teak labels I am trying will, no doubt, last well, but the writing on them is so far not very distinct. I know my friend Mr. Ewbank's label well, and think it an admirable one; it has all the advantages of Mr. Wilson Saunders's old label with added ones of its own, but it requires having leisure time yourself, or an ingenious not fully employed gardener to get them made. If Mr. Ewbank would get any label maker to manufacture them, and sell them cheap, in the black paint stage, I have no doubt there would be a large number used. I do not yet quite admit the impossibility of an ideal label; there are now so many ingenious people in the world, that if a want is sufficiently, clearly, and publicly made known, it is almost always supplied.

I had last week the pleasure of seeing Mr. P. Neill Fraser's labels *in situ*; was very much taken with them, and shall certainly adopt them for some purposes; they are by far the best zinc label I have seen for some out-door plants; the zinc is about three times the thickness of the usual labels; they are 9 in. long by  $\frac{3}{4}$  in. wide.

GEORGE F. WILSON.

**Who are amateurs?**—This question is often asked, and only the other day at one of our horticultural shows a discussion was raised on the subject, and the secretary, on being appealed to, replied: "An amateur is a person who cultivates his own garden." I confess that this definition rather astonished my weak mind, coming from such an authority on a show day. I would define an amateur to be any person who does not grow for sale and for exhibition purposes. Amateurs should be divided into two classes. No. 1, to include all such, whether employing a professional gardener or not; No. 2, for those who do not employ a professional gardener. The question then arises, What is a professional gardener? and I would reply, "A skilled workman who earns professional wages, and for whom his employer is liable to tax." A gentleman cannot be said to employ a gardener who keeps a person who assists occasionally in his garden, or employs a labourer out of the village at agricultural wages. Another question has been asked very frequently this summer whether a gentleman who is known to sell many thousands of Roses every year to a company in which he is a large shareholder ought any longer to be allowed to exhibit as an amateur, and I think the National Rose Society would do well to discuss this question at their annual meeting. FAIR PLAY.

### THE GARDEN FLORA.

#### PLATE CCCH.—THE CAMASSIAS.

THE Quamash (*C. esculenta*), one of the best known and most esteemed of our garden flowers, belongs to a small genus of Liliaceous plants confined to North America. There are three species known, and all of these are in cultivation, but with regard to two of them, *C. Fraseri* and *C. Leichtlini*, botanists are somewhat at variance as to the genus to which they belong, some placing the former with the *Scillas* and the latter with the *Chlorogalum*. Be this as it may, there is a strong family likeness running through all of them, and they are not likely to be confounded by cultivators with the genera named.

*C. ESCULENTA* (the Quamash or Camass) is the one we figure. It is a native of meadows and marshes from Middle California to Washington Territory and northward, where it grows from 1 ft. to 3 ft. high. Its stalks, which are stout, rising from bulbs an inch or more in diameter, bear a loose raceme from ten to twenty flowers about 2 in. across. The colour varies from a deep to a pale blue, the deepest being Browni and atro-coerulea, the latter the finest of all the forms. It thrives best in a deep rich soil of a light sandy character in a moist situation. A bold group of it in flower has a fine effect in July, and it may be used plentifully in even a small garden without creating a monotonous aspect. The bulbs are largely collected by the North American Indians for food.

*C. LEICHTLINI* (white Camassia is nearly related to the preceding; it grows often on open sandy ridge tops, but is also found in dry spots in shady ravines; its bulbs are generally deep in the ground, the base in some stiff moisture-retaining soil, so that the base of the bulb is often injured in digging. They are often 5 in. long by 2 in. in diameter. In lighter soils the spike of bloom is large, being 9 in. long by 4 in. in diameter, while in heavier soils the spike is sometimes compounded, and contains several hundred florets, which are creamy white, and about 1 in. in diameter. The spike often reaches 3 ft. or 4 ft. in height. The cluster of leaves from the bulb often reaches 18 in. in height, each leaf being about 1 in. across. This is a very handsome plant, and a fine contrast to the blue Quamash, and it is far more vigorous in growth. It is a native of British Columbia, where it was first discovered by Mr. John Jef-

frey in 1853. It has been introduced and cultivated by Herr Max Leichtlin, of Baden-Baden.

**EASTERN QUAMASH.** Mr. Thompson thus speaks of this new plant: "It is a native of the States east of the Mississippi. Its flowers are rather smaller than those of the western species, but when seen in perfection it is scarcely less attractive. It grows about 1½ ft. high, with from six to eight leaves rather shorter than the scape, the latter bearing a raceme of from ten to thirty pale blue flowers, each about 1 in. across when expanded. All the parts of the flowers are smaller than in *C. esculenta*; the style is scarcely declinate, and the segments of the perianth are marked externally by only three or four nerves, those of the western species having from five to eight nerves. It is well known that the bulbs of the *C. esculenta* furnish a not unimportant article of food to the Indians of Oregon and California under the name of Quamash, and those of the present species are equally employed as food by the Indian tribes of the districts where it occurs." Though of comparatively recent introduction to our collections, this Squill will not compare with the older kinds in point of beauty, and is much inferior to the old *Camassia esculenta*, the flowers being considerably smaller and of a pale purplish shade and produced in short, dense racemes. It is, however, later in flowering than the other Squills and Camassias, which, perhaps, is a desirable quality. It grows well in a light rich soil if sufficiently moist during the growing season. All of the Camassias may be propagated either by dividing the bulbs or seeds, the latter a slow process. W. G.

#### A NEW FRUIT PRESERVING PROCESS.

A NEW process of preserving fruit has lately been patented in Australia which promises to be of considerable commercial importance. The inventor is Mr. A. F. Pulleine, of Hobart Town, and his process is based on that of Mr. Alden, but differs from it considerably in detail, and it is claimed that the results are better, fruits of a very delicate character, such as Blackberries, being preserved by it in their pristine freshness. The apparatus he employs is termed by Mr. Pulleine the "Automatic Evaporator." He claims that it preserves the natural quality of fruits or vegetables of any kind perfectly free of impurity, and in such a condition that while in bloom, appearance, and flower they are equal to the freshly grown articles they can be kept for an indefinite time in any climate. Further, the fruit can be preserved in any weather whether wet or dry. A large number of specimens of fruit preserved by this process are being exhibited at the South Australian Exhibition now open in Adelaide, and they are very highly spoken of by local connoisseurs and fruit growers. As the fruit season in the colonies is almost the reverse of that in Europe, and large quantities of Peaches, Plums, and other valuable products literally go to waste there annually for want of a local market, if Mr. Pulleine's experimental factory, which it is understood he proposes to establish in Adelaide, should prove a success it will be the means of opening up an important branch of export trade between the colonies and the mother country which would be of advantage to both. Fresh Peaches, Apricots, Grapes, and Strawberries, not to speak of Asparagus, would certainly, if obtainable in London at a moderate price, as Mr. Pulleine states would be the case when preserved by his process, be a most welcome addition to our dinner tables in winter.

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## THE FRUIT GARDEN.

## FRUIT TREE CULTURE.

THE pruning of fruit trees, particularly the Apple and Pear, in the culture of which so many people are interested, is a fruitful subject of controversy—one side maintaining that our present fastidious and excessively restrictive methods of pruning and training are unnecessary, and the other as energetically defending them. It is strange that we should still be wrangling over the question of how much we should prune an Apple tree, or if we should prune it at all. There must be a right and a wrong way, and it is not creditable that at this day neither the one nor the other has been ascertained satisfactorily. It is a fact, too, in the eyes of those who disapprove of excessive pruning as practised at the present day, that cultivators have gone back rather than forward in their practice. Half a century ago or more, that accurate observer, Thos. Knight, wrote that "pruning was not often wanted in the culture of the Pear tree, which is really much encumbered with superfluous branches." And Abercrombie, writing of the Apple, said, that shortening the shoots, except with the object of preventing deformity or securing fresh shoots to fill up spaces, was "not merely the cutting away the best and bearing part of the branches, but also to occasion their putting forth strong useless wood shoots where fruit spurs would otherwise arise, both effects greatly tending to retard the trees in bearing; whereas the fertile branches, being cultivated to their natural length, shoot moderately, and have fruit spurs quite to their extremity." Since these days, however, a new school has arisen, which teaches quite an opposite practice to that of Knight and others. We say "practice," for it cannot be maintained that our present advocates of the knife have any theory on the subject. Putting aside the question of dwarf stocks—which, for certain purposes that will be specified, are excellent—it may be said that the restrictive system of training, as portrayed and advocated by the De Breuil and Reims school, is a rule-of-thumb one. One would have thought that such cultivators would have first sought to discover whether their much-pruned and much-nursed tree possessed any advantages over the naturally-grown, well-managed orchard tree, bush, or standard that anybody can grow, and the only form in which Apples and Pears, &c., can be cultivated remuneratively; but no one has yet proved anything of the kind. It is beyond dispute that the restrictively trained tree, no matter what shape it is, hardly ever repays the cost of making and training it; and some of the fantastic systems of training the branches, frequently adopted, only add to the cost of the system. Our Royal Horticultural Society has, ever since we remember, been experimenting in fruit culture, and tries all modes of training and pruning; but at the present time it is in no better position than anyone else to tell us which system is the best, or how far pruning is either good or bad. It is not asserted here that trees that are so much pruned and pinched and root-pruned, as the advocates of the restrictive system recommend, do not produce crops of fruit, and sometimes even good crops; but they are never so regular, and seldom as good, as those produced upon trees that have been left alone comparatively, or upon which not a tithe of the trouble and expense has been bestowed.

Numbers of cultivators have become so wedded to restrictive culture that they are afraid to confess their doubts regarding its utility, and blindly stand up for practices that are indefensible. If our knife-and-thumb men want to

make good their case, they will have to do more than they have done hitherto to prove the correctness of their views. What our scientific authorities and the Royal Horticultural Society have failed to accomplish, however, any intelligent cottager may prove for himself. If he will take two Apple or Pear trees of the same sort and age, and subject both to exactly the same conditions of culture, except that he must prune and pinch and train the one in the orthodox way, and leave the other almost to take care of itself in regard to its branches, he will find that the latter will bear fruit soonest, bear the greatest quantity, and continue to be most productive. From an æsthetical point of view, also, the tree that is allowed to grow in its natural way will be the more beautiful of the two. This being so, what possible excuse can anyone have for resorting to the extreme use of the knife or any other of the mutilating processes now in vogue? It may be laid down as a maxim that none of our hardy fruit trees require pruning in the sense of shortening back, and finger-and-thumb pinching, as advocated and practised on dwarf and other fruit trees at present (not grown on walls), in order to produce as great a degree of fertility as a tree is capable of. I do not assert that an unpruned Apple or Pear tree, for example, will produce as many fruit buds—although of that I am not sure at present—as one that is persistently pinched and curtailed in its growth during the summer and pruned severely in winter; but it will produce far more fruiting spurs and more flowers than are needed to produce a crop, and as heavy as a tree can bear. It is not the most floriferous tree that is the most fruitful, and it is not desirable that a tree should be encouraged to produce flowers in excess, which as often as otherwise indicate debility and lack of bearing powers. It is not long since one of the gardening papers published engravings of pyramid trees at Chiswick, trained and pruned on the restrictive system, smothered with fruit buds apparently, and we were told to regard them as examples of what a fruitful tree should be like; but the idea is a mistaken one. It is the tree that produces a fair proportion of shoots and flowers together that bears most certainly and bears the finest fruit, as well as most of it; while the one which gives us the proverbial "sheet of flowers" too often produces nothing. The culture of fruit trees can only be regarded from a utilitarian point of view; and depend upon it, if any of the fanciful methods of pruning and training possessed any special merit, our growers for market would have been the first to find it out. But where do you find market growers who copy the Chiswick trees, or who read De Breuil or Rivers, or any author of the same school? It is only the gentleman's gardener who has not to render a debtor and creditor account of his doings, who buys fancy trained trees, or tries to grow them; and, but for him and enthusiastic amateurs, fancy trees, with all their fantastic shapes and difficult culture, would have been a dead letter in this country. They never did pay, and never will; and it is high time to mend our ways.

**Stocks and Planting.**—In the future our fruit trees will, in all probability, be confined to a fruit garden by themselves. The plan of growing so many fruit trees in kitchen gardens is now all but universally condemned. If fruit culture is to assume the importance it deserves, whether in private or in market gardens, it must be made a speciality of, just as we make specialties of other garden crops of less importance. The question of stocks is one which arises first. For the Apple we recommend the natural stock or Crab, the English Paradise, and the French Paradise to be also used. The

natural stock produces the largest trees, the English Paradise next, and the French Paradise produces bushes, on which, however, according to our experience, occur the largest fruit. Large Pear trees should be grafted on the natural stock also, and dwarfs on the Quince. Plums, Cherries, &c., are also usually worked on the free or natural stock, but dwarf Cherries are possible on the Mahaleb. Large trees on the natural stock should at first be planted about 10 ft. asunder, to be thinned out eventually to 20 ft. or 30 ft. Apples on the English Paradise will do well 10 ft. apart, and the French Paradise may be planted 6 ft. apart. Plums and Cherries will mostly require a space 20 ft. square in the end. It pays to plant thickly at the beginning, if in the end those trees that are removed have to be thrown away. It does not matter much whether the ground of an orchard is laid down in Grass or kept bare. A bare soil must, however, be stirred regularly to keep down weeds, and the ground over the roots of the trees should be mulched. We prefer the Grass orchard, but would keep it closely cut by the scythe or grazed, and would always mulch the trees with the short Grass, especially dwarfs that root near the surface, and manure them periodically as well.

**Pruning the trees.**—Large trees of Pears and Apples on the natural stock should have stems from 5 ft. to 6 ft. high—that is, standards. Those on the English Paradise called dwarf standards may have stems 3 feet high, and Apples on the French Paradise should be grown as bushes. Pears on the Quince may be grown either as dwarf standards or as bushes. Apples, Pears, Plums, Cherries, and Apricots all bear in the same way, that is, from buds or spurs on the older wood. If the branches are much pruned, either in summer or winter, they will be forced to produce wood shoots; but if they are not cut back, they will produce fruit buds laterally, and extend at the extremities principally. Not the slightest fear need be entertained at any time of the trees not producing abundance of fruit buds of their own accord, without any summer pruning or pinching. Pruning of all kinds should therefore be confined to simply thinning out the shoots where too crowded, cutting such as are removed clean out, and shortening the most straggling at the winter pruning. This winter pruning consists in cutting back the most straggling branches, in order to keep the tree within bounds and prevent a too straggling habit; but some varieties will need no pruning, being inclined naturally to preserve a compact, symmetrical shape. Let it always be understood that the less pruning that is done the better, consistent with the above considerations. Pruning an orchard should not occupy a man more than above a day or two once a year. So long as a tree grows with a tolerably round and shapely head, not too crowded, let it alone. We have plenty of trees that have never been touched since they were planted. Cherries, Plums, Damsons especially require the least pruning; but some of the Apples and Pears are disposed to grow very thin and tall naturally, and such should have their tops cut off and the straggling side branches curtailed; and year by year they will gradually conform to the desired shape almost of their own accord. Trees trained, or rather allowed to grow, in this way bear crops years before pyramid-trained and other trees produce anything worth speaking of, and in two or three years they attain to regular bearing age, no matter what stock is used.

**Experiments with trees.**—About sixteen years ago I planted a number of Apple trees on the natural stock, on a piece of good ground, and let them grow without touching them with the knife. Some of them reached a height of nearly 30 ft. in a few years, producing long shoots and



nually, and preserving a thin habit. All bore famous crops at the same time, in good years, some of the shoots being literally covered with fruit to the length of 6 ft. About ten years since I transplanted the whole of these trees to a new orchard, at the same time reducing the tallest of them in stature by nearly one-half, and proportionately curtailing their side branches, so as to make them more compact and convenient; but since transplanting they have not been pruned, and they have continued to bear enormously. A little later I planted trees on dwarf stocks, low standards on the English Paradise, and bushes on the French, with exactly the same satisfactory results, treated in the same way—that is, without pruning. The dwarf standards—originally bought as pyramids, pruned on the restrictive system, but denuded by me of their lower branches and turned into standards, and planted on grass—are beautiful objects when in fruit, being weighted to the ground with the crop in good years. Had they been subjected to all the pinching and pruning usually given to dwarfs, they could not have done better, nor as well indeed, and yet they have hardly cost anything at all, either in pruning or training. Plums and Cherries received from the nursery two or three years since behave in the same way, the Cherries keeping their shape and bearing immense crops, and the Plums only a little less.

**ROOT PRUNING.**—Unpruned trees are benefited by root pruning, like other trees, but they do not require it nearly so often, because, being allowed to extend, they run themselves into fruit. Pruning is one way of lessening the effects of root pruning, and curtailing its usefulness. Keep up the demand for food by encouraging a large breadth of branches and leaves, and reduce the supplies by curtailing the roots, and a decided check is given to over-luxuriance at once. This is the philosophy of root pruning. I may just add that I have for many years tried the effect of free growth and shoot extension with a minimum amount of pruning, or none at all, upon many other kinds of plants—among which may be named the Hawthorn, *Crataegus pyracantha*, and other hardy shrubs, the *Bougainvillea*, *Clerodendron*, *Stephanotis*, *Allamanda*, *Roses*, &c.—and always with the same result, that is, of running the plants into flower or fruit abundantly at an early age. The *Crataegus pyracantha*, it is well known, does not fruit freely when young, but we have a number of quite young plants here, growing in a strong soil, that fruit in the most profuse manner. Let the branches extend, and never shorten them, and each one will produce dense wreaths of berries. It is only when you begin to crop the shoots, as they do Pears and Apples, that they cease to bear fruit.—J. S. W., in *Field*.

[We have seen the trees in our correspondent's garden, and can attest that they are as full of fruit as anyone could desire.—Ed.]

#### THE DAMSON CROP IN KENT.

This is truly a marvellous crop this season, for in addition to the fruit being thick upon the trees, the late rains have swelled it up to such a size as is seldom seen even in the case of a light crop, and we hear of contracts being made for thousands of bushels at from 5s. to 6s. 6d. per bushel. The *Farleigh Prolific* is, as usual, so thickly beset with fruit, that sprays of it more resemble clusters of Grapes than ordinary branches of Damsons. It is singular to note how the south and west sides of the trees are loaded, while the north and east are nearly bare, plainly showing how destructive are the effects of withering winds from those quarters, and how valuable would be any kind of shelter. The old sweet round Damson is also bearing freely this year, as is also the large Cheshire or Prune

Damson, the fruits of which are like little Plums. This kind makes a beautiful spreading tree, many of which in this locality are now propped up with cross-bearers for the outer branches to rest on. Bullaces, both the white and Shepherd's (a large round kind that grows here), are largely used for preserving purposes, being very like a Green Gage. Enormous quantities of Plums being now used by the jam factories, the cheapest article that will answer the purpose is the one selected. The Bullaces are also useful for culinary purposes after the majority of Plums are over, and even in private gardens a tree or two of them on which the fruit is allowed to hang till it is fully ripe is generally appreciated about the middle of October. They will grow in any waste corner, and after planting only need the strong shoots to be shortened at the winter pruning to ensure fertility. J. G.

*Linton.*

#### MEALY BUG ON VINES.

THRIPS, red spider, and aphides have always been known to be unwelcome visitors, but troublesome and injurious as these are, they can be more easily kept in check than mealy bug; its rate of increase is so rapid, and its natural habit of insinuating itself into every crack or inequality so great, as to cause no end of labour to eradicate it. For this reason I some time back gave an account of an instance that had come under my notice of a successful application to Vines of a mixture—the active agent in which was gas tar; the operation I then gave details of met with an off-handed condemnation from one or two correspondents in THE GARDEN. I should not have again noticed the subject but for the double reason that the use of the mixture has now been proved to be completely successful, and the remedy inexpensive both in labour and materials, a matter worth taking into account. When I saw the Vines at Lambton Castle—the place where the remedy was tried—and noticed the condition they were in, without a trace of the slightest injury or a single remaining bug, I was at once convinced, notwithstanding the suspicious character which this tar has generally had with most people, so far as its being injurious to plant life, that, used in the way described, it is equally as harmless to the Vines as it is effectual in eradicating the bugs. This is now proved by the grand clusters of Grapes from these tar-dressed Vines, with which Mr. Hunter took the leading prizes at the late Manchester show, at which place still further evidence of the safety and efficiency of the tar-dressing was present in the unusually fine Grapes in the two collections of fruit shown successfully by Mr. Austen, who last winter dressed the Vines that bore them with gas tar, but not in the weak, much-diluted state that was so summarily condemned in Mr. Hunter's case, for Mr. Austen applied his dressing half tar and half water with just as much clay as was needed to bring it to the right consistency for laying on, and in the case of these Ashton Court Vines the loose bark was stripped off before they were dressed. I saw them just as the crop was ripening, and so heavily had the strong mixture been laid on that the canes were then as black as shoe-leather. But the success of Mr. Hunter's weak application of the material shows that there is no need to use it nearly so strong as Mr. Austen did. Although, as I have already intimated, even the name of this tar in contact with vegetable life has a suspicious sound, yet there can be little doubt that from its being so much thicker, with the consequent less ability to penetrate, it requires far less care in using than an extremely penetrating liquid like paraffin. Even when the latter is very much reduced in strength, despite the mischief that is still often done by the incautious use of paraffin, it is one of the greatest boons that has ever appeared for the certain and cheap destruction of insects that prey upon cultivated plants. O. P.

#### Planting Strawberries for runners.—

The past season convinced us of the advisability of having rows of young plants from which to

procure runners for forcing instead of having to go to our bearing beds for them. During the extreme heat and drought that prevailed at that time fruiting plants made scarcely any runners, but young single rows of late planted ones sent out a plentiful supply. We, therefore, had our stock for early forcing in fruiting pots before those who depended on older plants could get sufficient runners layered, and in addition to this advantage it is a great gain to have the fruiting beds left undisturbed; for if layering is not done until after the fruit is gathered, it is too late to expect very early Strawberries the following year. We are now planting out runners for supplying next year's layers in single lines by brick edgings; they thus occupy but little space and are easily kept distinct. Anyone who has not yet tried this system should adopt it at once, for I find that good healthy runners are worth all the trouble bestowed on them in this respect. Young plants on fresh soil are seldom infested with spider, mildew, or the various pests to which Strawberries in older beds are liable.—J. GROOM.

#### ROOT PRUNING.

If more care were exercised in the planting of fruit trees in suitable positions, root pruning would rarely be heard of. In the case of other trees Nature produces abundant crops of fruit without root pruning. Look at the crops of Acorns, Beechmast, Sweet and Horse Chestnuts, Haws, Holly berries, Mountain Ash berries, and many other fruits that are produced in great abundance from year to year. Do they require root pruning? Myriads of Apples and Pears, Plums, Cherries, and other fruits are also as productive, yet the roots are never touched from the time of planting, except where in the course of cultivation the soil above them is forked over. In market gardens, though the trees are grown naturally, there is nevertheless good culture, and if the knife is somewhat spared the pruning saw is not, because experience shows that to secure good crops it is not necessary barbarously to hack the roots, or to be always cutting away the season's growth, but rather judiciously to thin out the branches that year after year fill the tree beyond its requirements. Some plead for root pruning wall trees and espaliers. Why? Is it because these make more wood than can be utilised? If so, does not this show that the evil begins by planting in soil that is too rich? and does not this cry for root pruning arise in all cases from this same cause? A border that is to be planted with wall trees is trenched perhaps 4 ft. in depth, is heavily manured, and when the trees are planted the soil is further loaded with manure, even to heavy mulchings. It is thus inevitable that the trees fed and stimulated in this way will produce wood filled with crude juices. Is it good culture thus to produce wood that must needs be either amputated or brought into proper condition by root pruning or by bringing the tree into a state of semi-starvation?

What must be obvious is that high class vegetable culture and that of fruits, excepting perhaps Strawberries, ought not to be carried on in the same garden. Fruit trees, whether on walls or as espaliers or in any other way, do not need the gross stimulus given to garden vegetables. If these were grown elsewhere the rank growth so much and so fitly deprecated could not exist. It is a curious thing that we never root prune vines, nor Peach trees planted within a house; there it is desired to encourage all possible growth, and to fill the house and border as speedily as possible. The top growth is balanced by the power of the roots which have no excessive feeding ground, but only the needed space and the necessary stimulus. Why, then, should outside borders for wall trees be made so much richer than the inside borders of fruit houses? In the latter case if rich and full of nutriment at least the additional heat found under glass will promote the maturation of the wood; but outside where the warmth is less and intermittent, the most luxuriant growth is encouraged by highly manured borders. It has been stated



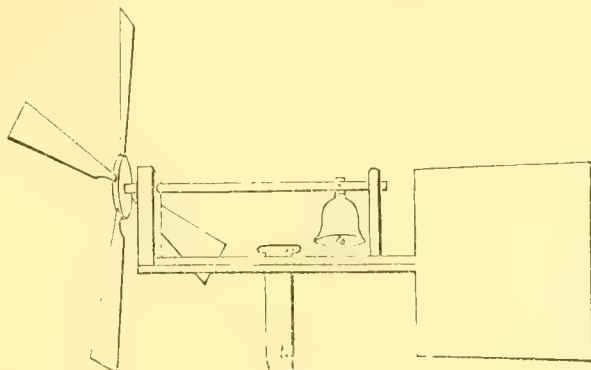
that good results have in many places been obtained from root-pruned trees, whilst unpruned orchards have been bare. That remark carries little force, because it is a fact that the best crops during the past sparse fruiting season have been obtained from these same unpruned orchard trees. It is the natural equalisation of root and head by Nature which has produced these crops; the soil is suited for its intended purpose, and the trees, if not luxuriant, are at least healthy. It is admitted that in many cases root-pruning has been carried to excess, and that it is so there can be no doubt. What the inexperienced wish to learn is, not when root-pruning should be performed, but how to avoid the production of such a state of growth in trees as shall render it necessary, and to say that if in planting fruit trees the grossly stimulated soil needful for the culture of vegetables be avoided, and soil of a less fatty nature be planted, with the needful manuring given from above in the shape of top-dressings, the rank growth will not come, and root-pruning will not be needed. The employment of dwarfing stocks, such as the Paradise, Quince, and Malahé, have been recommended for fruits in kitchen gardens. The object for grafting upon these is to secure that dwarfing and moderate growth that cannot be had when Apples, Pears, and Cherries are worked upon common stocks and planted in rich soil. The reason is obvious. These stocks naturally are not sub-soil, but surface rooters. They throw out a quantity of fibrous roots, but no main or deep roots, and thus pruning is not required. This certainly is a wiser and more consistent method of promoting the production of fruit crops than the planting trees that will produce only wood filled with crude juices.

My original protest against the recommendation to root-prune fruit trees was that there is every probability that the trees will be called upon naturally to carry and mature next season very heavy crops of fruit, and that to cut away the main sources of the supply of nutriment needed for such a labour would indeed be madness. There is a good deal of routine about some of our regular cultural directions. One advises a thing, and then another, somewhat unthinkingly perhaps, does the same, and then it comes to be regarded as a sort of necessary and exact course of procedure. Our forefathers, many of whom were first-class fruit growers, could get fine crops of out-door fruits, far better, perhaps, than we get now, without root-pruning. Probably they knew as much about crude juices and other elements of plant physiology as we do, but they at least got fine fruit crops. Where are now to be seen the Peach walls that could be shown 50 years since? trees that did not die after a short life of five years, but produced heavy crops for a generation. Modern cultivators now declare that the seasons have changed adversely for out-door fruit culture, and that the wood does not ripen as it used to do, whilst diseases and blights are more prevalent. If this be so, does it not point the moral that to promote by powerful stimulus coarse luxuriant wood that the season cannot ripen is to err? and that what should be aimed for is rather the production of hard mature growth, moderate in size and quantity, and of such a nature as shall with small ripening influences become fruitful? A. D.

**Alexandre Lambre Pear.**—If the same cropping properties universally characterise this Pear as they do with me, it ought to become a first rate market kind. Last year the few trees—young free-growing half bush, half pyramidal—I have here produced good crops this year; they are literally loaded, the branches bearing fruit from

2 ft. to 3 ft. in length, hanging down to the ground under the weight. It is a pretty medium sized Pear of a brownish or slight russetty hue and of excellent quality. Whilst I used the knife about these trees I got no fruit worth mentioning, but now they fruit amazingly; indeed, buds adorn the other wood all over the tree again, and promise a good crop next year also.—A. D.

**Bell bird-scarer.**—It may be interesting to some of your readers who happen to have a few large Cherry trees in their orchards to know that a bird-scarer we have tried this season has been most successful in keeping off the many thousands of starlings (other birds equally well), which in former years have made a clean sweep of Cherries from trees too big to net, and too few to pay to keep a "boy scarer" for several weeks together, as the large fruit-growers do. I was induced to try this "machine" from hearing that a bell in a Cherry tree was a good "bird scarer," but as I did not see the fun of having quarter of a mile of string tied to my big toe all night (which was one way suggested), in order to ring the bell at the important hour of sunrise, I got the gardener, who is a handy man, to make a windmill about 3 ft. in diameter, with a bell fastened to the shaft, and a



broad tail to keep the sails head to the wind. This has answered beyond my greatest hopes; even those calm hot days it made now and then half a revolution, and in a breeze makes a splendid row. Many people staying in the house have cursed it for keeping them awake; but it is a case of "no bell, no Cherries."—A. M. J., in *Field*.

#### PEACHES, NECTARINES, AND APPLES AT MANCHESTER.

NEXT to the Grapes, which were on the whole the finest feature of the exhibition, the above-named fruits were shown in the greatest number. There were about 120 dishes each of Peaches and Nectarines, while those of kitchen and dessert Apples were almost too numerous to count. Figs were scarce, and Pears and Plums far from being plentiful. Doubtless this arose partly from the lateness of the season, and also largely from the fact that it is not a Plum, and hardly a Pear, year. Melons, for such a grand show, and with such liberal prizes, could hardly be called plentiful, nor specially good; but of Peaches and Nectarines it is impossible to write in terms of exaggerated praise. When all the liberal prizes had been awarded, there remained scores of dishes of high merit wholly unnoticed. Next to the number and excellence of the Peaches and Nectarines, the most striking feature of the show was the number of dishes of the more popular and best proved varieties. Thus, while such sorts as the Red Magdalen, Early Alfred, Crimson Galande, Early Admirable, Alexandra Noblesse, Dymond, Prince of Wales, Chancellor, Stirling Castle, Lord Palmerston, and others were represented by units or couples, Royal George, Bellegarde, Violette Hâtive, and Noblesse could be counted by tens of dishes. The only new sorts that reached to anything like the numbers of those standard sorts were the Princess of Wales and Dr. Hogg. In Nectarines the same clinging to a few popular sorts was still more

apparent. This evidently arises not from any prejudice against novelties, for many of these, such as Lord Napier, Prince of Wales, Victoria, Stanwick Elruge, Pine-apple, Improved Downton, Darwin, Rivers' Orange, &c., were represented. Most of the older varieties, such as the Red Roman, Downton, Murrey, Hunt's Tawny, &c., were also shown. But nearly a fourth part of the whole of the Nectarines exhibited were the Pitmaston Orange, while the Violette Hâtive and Elruge mustered nearly a dozen dishes each. The exhibitors of Apples hardly run so much on a few sorts, though the following varieties were the most prominent. Among the dessert sorts the more conspicuous and most frequently shown were Devonshire Quarrenden, Irish Peach, Kerry Pippin, Red Astrachan, Borovitski, Red Juneating, Sugar-loaf Pippin, Ribston Pippin, White Ingestre, Early Summer, Golden Pippin, Early Harvest, Red Margaret, Early Nonpareil, Cox's Orange Pippin. The Duchess of Oldenburg was also shown among the dessert varieties, no doubt, however, by mistake, though it is one of the most showy and useful of kitchen Apples, and may, occasionally be eaten by those who prefer juice to flavour. Among kitchen Apples the following were the more prominent: Alexander, Lord Suffield, Lord Derby, Warner's King, Grand Duke Constantine, Kentish Fillbasket, Golden Noble, Dutch Codlin, Peasgood's Nonsuch, Ecklinville Seedling, Mère de Menage, Keswick Codlin, Cellini, &c. Among Pears, Williams' Bon Chrétien had it nearly all to itself, though there was a dish or two of Summer Franc Réal, Doyenne d'Été, Beurre Précoce, Jargonelle, Beurre Giffard, and Summer Rose. D. T. FISH.

#### FRUIT GROWING IN AMERICA.

My friend Mr. Sargent, of Fishkill, N.Y., gives you a rather doleful account of fruit growing with us, particularly of Apricots, Nectarines, and Plums. It is quite true, as he states, "that there is no country so pestered with insects." Still, we do have plenty of Plums, and if the attempt was made I think Nectarines too. The Apricot is more uncertain; blooming so early, the flowers are liable to injury from late frosts. If, however, there was any great demand for the fruit, it would be raised in abundance. I have found no great trouble in securing a good crop. It is true also that Peaches under glass are very poor eating as ordinarily grown but under pot culture, and put out of the house on June 1, they are equal or superior to outdoor Peaches, as they ripen during the long days and under the hottest sun. I have never eaten any such fine flavoured Peaches as I raised in pots some years ago, ripening early in July.

As regards the Curculio, I was not aware that this insect was so injurious to fruit under glass; certainly Nectarines are raised in quantity by some of our amateur cultivators without any trouble or without the expense of wire screens. A few days ago I saw a house, without fire heat, of Plums, Peaches, Nectarines, and Apricots full of fruit which had not been injured at all. It is only in the open air that it attacks the fruit severely; still, I have no doubt Plums would be plentiful but for the Black Knot, as it is called, which by some is said to be a fungoid growth, though I have never seen the fact proved. All we know about it is, that when there are no Curculios, there is no Black Knot. However, Plums were as plentiful in our market last autumn as Pears, and this year the market has been supplied with superb fruit from California. Western New York is the source from whence the supply comes, and it appears that from Albany northward Plums are almost as abundant as Pears.

I shall look with much interest to the reply of your cultivators to Mr. Sargent's query in regard to fruit under glass compared with that grown in the open ground. I only fear that you have very few even who have been successful in cultivating either Peaches or Nectarines in the open air, and hence but few can answer the question satisfactorily.

When America supplies Great Britain with one million barrels of Apples yearly, the coddling



moth cannot be so injurious. My trees are breaking down with Baldwin Apples, and it would be a blessing almost if half of the crop would fall. But somehow there are no insects at all this year, and the crop of Pears is enormous. The truth is, insects or no insects, fruit is so abundant and cheap, it is hardly worth gathering.

I give you the wholesale prices of fruit to-day, August 12: Water Melons, 15 cents to 30 cents each; Cantaloup Melons, 3 dollars per barrel; Peaches, 2 dollars 50 cents per basket (about three pecks); Grapes, 5 cents to 10 cents per lb.; Plums, 75 cents to 1 dollar per bushel; Apples, 2 dollars to 3 dollars per barrel; Williams' Bon Chretien Pears, 3 dollars to 4 dollars 50 cents per bushel; Blueberries, 10 cents per quart; Blackberries, 10 cents to 15 cents per quart; Californian Plums, 25 cents per dozen; Tomatoes, 1 dollar 50 cents per bushel.

C. M. HOVEY.

#### VINE BORDERS.

*What is the proper way to make a good Vine border? and what are the best *str* Vines to plant where there is plenty of heat?*—R. H.

If "R. H." has been well advised he will have built his vinery upon arches or piers running the whole length of the structure, and he will do well to make his internal and external borders piecemeal—that is to say, in narrow strips of 3 ft. to 4 ft. each year, as the roots of the Vines require space for extension. Having decided upon the surface line, the border should be taken out to the depth of 4 ft., with a slope of 1 in. to the foot from the front of the vinery to the extremity of the external border, where a longitudinal drain with a good outlet should be placed sufficiently below the level to prevent water standing in the drainage. This done, the whole of the bottom should be covered with a thin layer of concrete and allowed to get dry before the drainage, consisting of clean stone or broken bricks, is introduced. On elevated ground 9 in. of drainage will be found sufficient, but in low, damp situations it may extend to 18 in. The surface of the drainage may be covered with a layer of coarse lime rubble or gravel, followed by thin sods of turf, grass side downwards, and the most important part, the foundation, will be ready for the reception of the compost. As nearly all good Grape growers prefer planting inside the house, the first border, 5 ft. in width, should be made inside, or 3 ft. inside and 2 ft. outside may be made for a start. Although practical men sometimes differ as to the quality of the soil best adapted to the growth of good Grapes, all agree that turf from an old pasture, be it light or heavy, should form the staple. For our own use we take about equal portions of heavy turf from the limestone, and light soil free from lime from the igneous rock. The heavy calcareous turf we prefer having laid up in narrow ridges for twelve months before it is used; but the lighter soil answers equally well fresh from the hills, as the herbage it contains ferments and gives gentle warmth to the roots of the newly-planted Vines. When a Vine border is to be made, a dry time, if possible, should be chosen. After chopping down the turf, to every six barrow-loads add one each of old lime rubble, charred refuse, and burnt earth, but no manure. Crushed  $\frac{1}{2}$ -inch bones with the dust to the extent of 12 per cent. of the whole mass may be added with advantage; turn two or three times, and the compost will be ready for use. When fermentation has set in, procure thin sods with which build the retaining walls, wheel in the compost, and make firm as the work proceeds. When the border is raised to within 9 in. of the finishing level, procure yearling Vines. Place the balls in warm water, wash away every particle of soil, and place the young cane where it is to remain, tying it to a stick inserted in the new compost. Spread the roots out in every direction, cover carefully with fine soil, give a little water at a temperature of 90°, raise the border to its proper level, and mulch with short manure. Vines in a green or growing state may be planted in warm internal borders at any time before the roots become matted round the balls

but the months of February, March, and April will include the best season for planting yearlings.

Six good kinds of Grapes for growing where there is plenty of heat may be Black Hamburg, Madresfield Court Muscat, Alicante, Foster's Seedling, Buckland Sweetwater, Muscat of Alexandria. For autumn and winter use add Gros Colmar, Lady Downes, Black Morocco, Alnwick Seedling, Gros Guillaume, and White Tokay.

Eastnor Castle.

W. COLEMAN.

#### HAMPDEN HOUSE, BUCKS.

HAMPDEN HOUSE, a very old and noble country residence, and one of great historical interest, mainly from the fact that it was once the habitation of the famous John Hampden, is beautifully situated, amid bold natural scenery, on the Chiltern Hills. After entering the park gates we pass through a wide avenue, 1½ mile in length, lined on either side with giant Beeches, Oaks, and Spanish Chestnuts—trees of great age and beauty; beneath these is a luxuriant carpet of velvety turf, dotted here and there with large clumps of common Brake and Gorse. After passing some distance up rapidly rising ground, we come upon the main carriage road, which winds round the lofty hill on which the mansion stands. After following this roadway for some distance through a thick Beech plantation, a short path-way brings us to the top of the hill close to the west front of the mansion, a square, castellated, whitish stone building of large size. The closely adjoining church of Hampden is a singular old structure containing some interesting monuments to members of the Hampden family. Skirting the churchyard the roadway passes on through well kept sweeping belts to the north front of the mansion. This entrance is surrounded by a semi-circular stretch of lawn, furnished with some well laid out flower beds, and belted in with six glorious specimens of the Cedar of Lebanon. These trees are amongst the finest I have ever seen. Their average dimensions are as follows: Girth of bole 5 ft. from the ground, 21 ft.; diameter of sweep of branches from 45 yds. to 50 yds., and height 80 ft. to 100 ft. They have suffered somewhat from violent storms, but are still full of vigour and massive beauty. Adjoining this portion of the ground is a strikingly fine avenue of large Limes, one especially being 21 ft. in circumference of bole at 5 ft. from ground and 120 ft. high. Evidently a great portion of the park has been originally planted with Limes in straight rows, which have been at some after time cut through, and thus rendered less formal. A short walk between some remarkably fine specimens of Yews of great age and beauty leads to the south-east front of the mansion, where there is a magnificent specimen of Silver Fir, nearly 200 ft. in height and 12 ft. in girth of bole. Near here are also some wonderful Beeches, some of which are 15 ft. in circumference of bole at 5 ft. from the ground, and about 150 ft. high, and of the finest possible proportions. From this part of the grounds is obtained one of the finest views of the surrounding country, including Chequers Court and Velvet Lawn, the favourite spot in this district for pic-nics and summer excursions. This lawn is naturally of a most beautiful velvety texture, and there are numerous pretty walks, sheltered by large and fine specimens of the common Tree Box, which thrives amazingly in the chalky soil of the Chiltern Hills. On the principal front of the mansion facing due south is a beautiful open lawn consisting of about 3 acres. This looked at from the mansion appears to be a portion of the park itself, so naturally does it blend with it, but it is really separated from it by a sunken fence or Ha-ha. From this point the whole of the surrounding country is overlooked; the most striking trees

near this enchanting spot are some remarkably fine common Larches, the largest of which are 15 ft. round the bole 5 ft. from the ground, and about 150 ft. high, and some Silver Firs of about the same dimensions. A monastic-looking archway covered with Ivy opens into a well-arranged enclosed Rose garden called King John's Garden, because this side of the house, which is evidently of very ancient date, was said to have been built during his reign. The walls on this side of the mansion are as much as 5 ft. through, and seem to have formed portions of a chapel, some fine arches having been discovered during recent repairs beneath a thick coating of plaster, under which so many priceless works of art have been hid.

We now pass on through the grounds to the north-west, where a very delightful walk is furnished through what is called the Home Wood. This wood has in its centre a deep shady dell entirely overhung with Beech and other trees. In the dell is placed an ice-house built in the chalk in the form of an egg, thus ensuring good drainage. In this dell, and indeed in the whole of the wood, has been planted an undergrowth of Tree Box. A raised mound ascended by a flight of rustic steps terminates the walk through the wood. Here a grand view is obtained of Beacon Hill, on which John Hampden used to assemble his yeomen, and also another portion of the Chequers Court estate, Velvet Lawn, and various other interesting places in the neighbourhood.

The kitchen gardens consist of three fair-sized enclosures, walled in and well planted with a very good selection of wall and other fruit trees. Strawberries thrive remarkably well here, and of vegetables there are always excellent crops. The glass erections are small and for such a place altogether inadequate, but still the best is made of the limited accommodation this department affords.

All who are interested in genuine English scenery, and can obtain the requisite permission to do so, should certainly pay a visit to Hampden, when I think they will agree with me in saying that for natural beauty both of landscape and surroundings few places are more highly favoured.

HENRY BAILEY.

#### GARDEN DESTROYERS.

##### SCALE INSECTS (COCCIDÆ).

THE members of this family are perhaps the most interesting insects which exist—interesting to cultivators of plants on account of the great amount of injury which they cause to many of their favourites, and the great difficulty there is in keeping hot-houses free from their unwelcome presence, and interesting to naturalists on account of their peculiar formation, and the very remarkable difference there is in general appearance between the males and females, which is so great that no one unacquainted with the peculiarities of these insects would for an instant imagine that any relationship existed between them (fig. A 1 and 2). There are a great number of species belonging to this family, most of which confine their attention to one particular kind of plant, but others are not so fastidious, and attack various kinds. Plants growing in the open air do not suffer so much from these insects as those cultivated under glass, but among the former, Apple, Pear, Plum, and Peach trees, Gooseberry bushes, Ash and Sycamore trees, and Roses sometimes suffer severely. The Apple and Pear trees suffer from the attacks of a small scale, *Mytilaspis conchiformis*, the mussel scale (fig. n). This is a very small insect, and is so much of the same colour



as the bark of the trees which it infests, that it is generally not detected until the trees are covered with it in large numbers. Plum and Peach trees suffer from the attacks of much larger kinds, belonging to the Genus *Lecanium*, or tortoise scales (fig. A). When in their immature states these insects are very flat, and lie so close to the bark of the tree that they are by no means easily seen; the mature females are much larger, but they so much resemble some inequality in the bark, or where a shoot has broken off, that a tree may have hundreds on it, and yet their presence may not be suspected. The Rose is liable to the attacks of two kinds of scale, a small white species (*Aspidiotus rosæ*) which sometimes occurs in such numbers that the shoots look quite white, and a tortoise scale, very much resembling the Plum and Peach scale. Both these kinds do much mischief. These species which I have mentioned attack the stems and branches only of their victims, but from these they manage to draw their "very life-blood" with their probosces, and, if present in large numbers, so weaken the trees that they never recover. The number of plants in cultivation under glass which suffer from these insects is very considerable—Vines, Peach, and Nectarine trees Pine-apples, Oranges, Oleanders, Cacti, Camellias, Ferns, and various stove plants.

**The Scale Insects** may be roughly divided into four kinds—those which become stationary and gradually change their form until the female more resembles a wart or knob on the plant than anything else. These are generally known as Turtle or Tortoise scales; those in which the perfect females are enclosed in a kind of skin or outer covering (not part of the insect), and are often shaped like mussel or oyster shells, and known as Mussel or Oyster scales. Those, like the Camellia scale, which lay their eggs in a long train behind them, covered with a cottony down, and those which in all their states are active, are not covered in any way, and the females do not change their appearance much when reaching maturity like the Mealy Bug, which must form the subject of a separate paper. The males of all the scale insects are two-winged flies, resembling more or less that in fig. A. These various insects are very difficult to eradicate when once they obtain a footing in a house or on a plant. The number of eggs laid by one female is very considerable, and as the conditions in greenhouses are generally very favourable to insect life, most of them hatch, and the young, which are very active, at once spread themselves in all directions over the plants, so that unless circumstances are very adverse to their growth, the progeny of a few females may do immense injury to any plant or tree infested by them. When young they are so small and inconspicuous in form and colour, that they are easily overlooked, and even if noticed, unless great care be taken in cleansing the plants, some are certain to escape, and the next year, already weakened by the attacks of the insects the previous season, and now still more punished by them, no wonder that the plant succumbs or is so injured that it never really recovers.

**Insecticides.**—Prevention is better than cure, and whenever fresh plants are to be introduced into a hot-house they should be examined to see that they are clean, and if any traces of the insects are found, the plants should be thoroughly cleansed with one of the following insecticides: Hard-wooded plants with smooth leaves may be washed or dipped in a mixture of paraffin oil and water, one wineglass of oil and three gallons of water kept well mixed; if the oil is first mixed with double its quantity of soft soap, it will not separate so quickly from the water; the next day the plants should be thoroughly cleansed by a good syringing with soft water. Soft-wooded

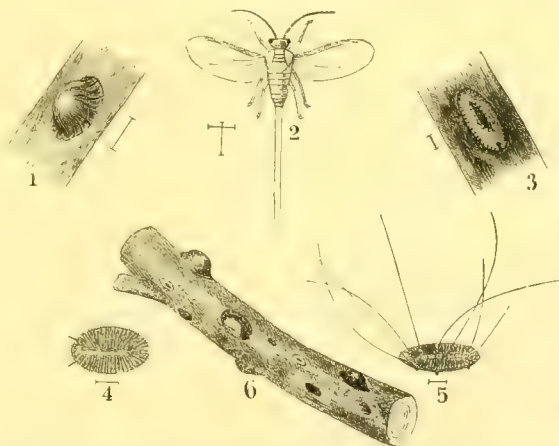
plants, or those with hairy leaves, are liable to injury from the oil, as it is difficult to cleanse them properly afterwards, and if much of the oil remains on them their pores get clogged up with it. Plants that will not bear this treatment may be washed with a stiffish brush and soft



C.—Camellia Scale.—1, Larva, under side (magnified); 2, Larva, upper side (magnified); 3 and 4, Female (magnified); 5, Camellia leaf and scale (natural size).

soap and water, or gently brushed with camphorated spirits of wine diluted with 5 per cent. of water, or one of the insecticides sold for this purpose.

**Apple, Pear, Plum,** and other trees attacked by the mussel, or oyster scale suffer most in the younger branches, though the scale will also attack any tender part of the stems and boughs. The tree should be carefully looked over, and any parts which appear attacked should be treated in one of the following ways which have been much recommended: brush the parts over

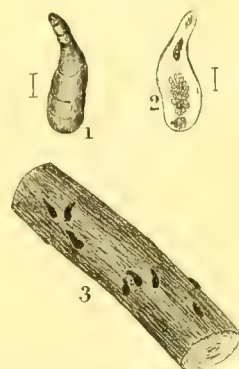


A.—Tortoise Scale.—1, Female (magnified); 2, Male (magnified); 3, Male cocoon (magnified); 4 and 5, Larva (magnified); 6, Branch with larva, females, and male cocoons (natural size).

with soft soap and water, and then scrape them with some blunt instrument, or rub them well with a piece of cloth or a stiff brush. The object is to remove the insects and their eggs, which adhere pretty tightly to the bark; the soap and water is useful in forming a lather, in which they get mixed up and can easily be removed; after this scraping the trees should be dressed with one of the following mixtures in order to kill any scale, &c., which may still remain in any crevices which the previous rubbing has not touched (if the trees are espaliers or trained against walls, they should be unfastened, and the stakes dressed with an insecticide, or the

walls painted with a wash of cement)— $\frac{1}{2}$  lb. of soft soap, 1 lb. of sulphur,  $\frac{1}{2}$  oz. of black pepper boiled in four gallons of water for twenty minutes; thicken with lime until of the consistency of paint; use warm and well brush into any cracks, &c.; or 1 lb. of soft soap,  $\frac{1}{2}$  lb. of flowers of sulphur to 7 gallons of water. The minute, round, and oblong scales found on Cacti belong to this class of scale, and may be destroyed by brushing them with diluted spirits of wine. The white scales on Rose trees (*Aspidiotus rosæ*) and those on Ash trees (*Chionaspis fraxini*) are also of this nature. Prune off as much of the affected wood as possible, and dress what cannot be removed with the mixtures recommended for fruit trees.

The Mussel Scale (fig. B) is so named from its great resemblance to a minute mussel shell is about one-eighth of an inch long, curved, and is much narrowed towards the



B.—Mussel Scale.—1, Female, upper side (magnified); 2, Female, under side (magnified); 3, Branch with scale (natural size).

head; its general colour is greyish-brown, in fact, the tint of the bark of the trees; the head is reddish-brown; the skin on the underside next the bark is white, very thin, and mostly breaks away when the scale is removed; in fig. A 2 this skin is partly broken, showing some of the eggs and part of the female. Within this outer shell or skin is the true insect, which occupies the front part of it. The females are devoid of limbs, and more resemble a short, roundish grub than anything else; they are of a greenish colour; the joints of the body are well marked; the head is furnished with a proboscis from the end of which the insect can protrude

four fine hairs with which they pierce the bark and suck the juices of the trees; the eggs when laid fill the hinder portion of the shell, and are white and oval. The female dies after depositing her eggs, which remain under the shelter of the scale until the young are hatched. The male of the mussel scale is, I believe, unknown, but it is no doubt when mature an active two-winged insect much resembling that of the Plum tree scale (fig. A 2). The young larvae are minute, oval, six-legged, and active; they roam about the trees until they find a suitable place, when they settle down, and, piercing the bark, begin to suck the sap from the shoots; they



gradually increase in size and alter their appearance.

The scales on the Peach, Nectarine, Plum, Gooseberry, Fern, and those generally which when fully grown become inanimate-looking brown warts or knobs are called Tortoise or Turtle scales, and mostly belong to the Genus *Lecanium* (fig. A). Rose and fruit trees when attacked by them should be treated in the same manner as Apple trees for the mussel scale.

The Tortoise Scale is very similar in its life history to the Mussel scale, but its method of growth is different. A description of the Plum tree scale will suffice for the others of this genus. The larvæ or young scales when first hatched are very flat, and provided with a pair of antennæ, six legs, and a proboscis they soon acquire ten long filaments, which stand nearly erect from the edge of their backs (fig. A 5), and are exceedingly fine and look like threads of very fine spun glass. They are sometimes more than eight times the length of their bodies. When examined under a strong microscope they appear to be tubular. The use of these threads is uncertain, but they probably are of some protection to the larvæ against ichneumons and other parasitic insects. The larvæ, having selected positions in which they affix themselves, gradually increase in size, and in the case of the females their limbs seem to become nearly absorbed, and they lose all powers of locomotion. The skin of the back of the insect ultimately becomes a hard reddish-brown shell and its body a mass of eggs; as these are expelled the body gradually shrivels up till, when all the eggs are laid, the female dies, and her dead body remains as a shelter for them. The male larvæ, as they reach the pupa or chrysalis state, form a slight papery covering, within which they undergo their transformations. On raising the shell the limbs and antennæ of the future insect are clearly visible. The male may be known to be fully developed by the two long threads from his tail projecting beyond the covering. The males ultimately leave this shelter and seek the females. They are small two-winged insects of a pale pinkish red colour, measuring about 2-10ths in. across the expanded wings, and about 1-16th in. in length, not including the two posterior threads, which are about twice the length of the insect. The head is furnished with a pair of long antennæ, consisting of 9 joints and a pair of small eyes, but it has no mouth. The life of the perfect male is probably so short that it does not require any food; the wings are large and almost veinless; the feet consist only of one joint; from the tail proceed two long white hair-like threads, the use of which is unknown. The larvæ and females of this genus are very liable to escape observation owing to their great resemblance in colour to the parts of the tree which they attack. I have seen Peach trees very badly infested, but they required some examination before the insects were seen, and the gardener had no idea the trees were attacked, although he knew the trees were not healthy. I have also seen Ferns covered with them on the undersides of the fronds, but they so much resembled the fructification in colour and size, that I was not surprised they had escaped notice. The Vine scale, which belongs to this description of scale, should be destroyed by one of the following recipes: brushing the Vines over twice with turpentine, allowing an interval of a day between the operations; scraping off the rough bark and painting with the first recipe recommended for the mussel scale, or  $\frac{1}{2}$  lb. of tobacco, 1 lb. of sulphur, 1 lb. of soft soap; boil the tobacco in 3 quarts of water for 20 minutes, then mix the other ingredients into a paste with some of the tobacco water, pouring the remainder on gra-

dually; add enough soft water to make 10 quarts, or Gishurst Compound, 8 oz. to 1 gallon of water; add enough clay to make it as thick as paint. The Pine-apple scale may be destroyed by washing the plants with 1 lb. of soft soap, 1 lb. of size or glue, 1 lb. of flowers of sulphur made into a paste with warm water; add 1 gill of turpentine and mix with 2 gallons of tobacco water; add 10 gallons of water at a temperature of 125° to 130°. The Camellia scale, *Pulvinaria camelicola* (fig. C), except in its early states, is very unlike those already mentioned. When fully grown it is nearly 2-10ths in. long, flattish, and showing at its edges traces of the divisions between some of its joints, and is greyish green in colour, the centre being brownish and covered with short white tufts; it lays its eggs, covered with a thick cottony coating, in a long train behind it, sometimes measuring  $\frac{1}{2}$  in. in length. It attacks the upper and undersides of the leaves, generally the upper, and sometimes the young wood. This insect is very conspicuous on the leaves, and looks like the droppings of some bird, or a splash of paint or whitewash. The leaves and shoots should be washed with soft soap and tobacco water, or a wine glass of paraffin oil to 3 gallons of water kept well mixed.

G. S. S.

## SEASONABLE WORK.

### ORCHIDS.

J. DOUGLAS, LOXFORD HALL.

**Watering and late growths.**—Up to this time water will have been freely applied to the roots of *Dendrobiums*, and proportionately freely to *Cattleyas* and other things that have been making their growth. Now, the aim should be to get the growths consolidated, and in a state not only to stand the winter well, but to flower freely next year. There is another evil to be avoided, and that is the tendency of some *Cattleyas* to make late growth. *C. gigas*, for instance, is one of the most vigorous of *Cattleyas*, and it has a tendency to make a second growth at this season of the year, unless the plants are kept rather dry at the roots and moderately cool, and when this species does start into growth the chances are that it will not flower at all next season. *Cattleya superba* will also make late autumn growths if the plants flowered in the summer. The only way to avoid all this is to keep the plants as dry as possible after their growth is completed, and up to the time when they start into growth again. When *Cattleya superba* flowers late, as it is doing with us this year, there is not much danger of its again starting into growth. The early flowering *Dendrobiums* will also have made and matured their growth by this time. During the growing period they delight in a high temperature and moist atmosphere; and this must be maintained until growth is completed, when the temperature should be reduced, and the atmosphere kept much drier. For instance, a succession of flowers may be kept up of that good old variety *D. nobile* from December until July by ripening the early flowering plants as soon as possible, and removing them to a cool house as soon as the growths are ripe. The plants may be placed in a greenhouse or cool vinery to rest. The earliest flowering plants of *Dendrobium Wardianum*, *D. Falconeri*, and others of that type should also be removed to the greenhouse as soon as their growths are completed; and it is not likely that they will require any water until they are replaced in heat. Thrips have been very troublesome this year in the warmest house. It is dangerous to fumigate with tobacco smoke, as some of the plants would be injured by it. The only plan is to wash with a solution of soft soap and tobacco water, strong enough to kill the insects without injuring the plants. The Chelsea blight composition is also a capital thing with which to destroy thrips. Dip the plants in it (with the usual quantity of water added), and in an

hour after wash with clean water. The temperature of the warmest house need not be more than 70° at night now, and that can be kept up without much artificial heat. When the nights are cold and the temperature in our house falls nearer 65° than 70° towards morning, but that would be for an hour or two only, we damp this house about three times a day in bright weather—in the morning about mid-day, and when the house is shut up in the afternoon. At that time the temperature may rise to 85°. The house ought not to be shaded more than is necessary to prevent the plants from being scorched.

**CATTELEYA HOUSE.**—In this we grow *Vandas* and *Aerides* of the Foxbrush type, *Odontoglossums*, such as *O. hastilabium*, *O. citrosum*, *O. pulchellum*, &c. To none of these must water be so freely applied as heretofore, but a distinction must be made between plants that have completed the growth of the pseudo-bulbs, and those that are not yet freely developed; none of them must, however, be so freely watered as they have been during the hot summer weather. The night temperature of the house is usually 65°, with little artificial heat—falling occasionally to 60°. The atmospheric moisture is about the same as that in the warmest house.

**COOL HOUSE.**—This does not at present require any artificial heat, even although the weather is dull and cold. If any of the *Masdevallias* still need repotting it ought to be seen to at once, as it is better that the plants become established at once. I prefer to divide these soon after the blooming period; but it is not easy to do all the work just when it ought to be done; and it is as well to know that the plants may safely be divided as late as the end of September. Any *Odontoglossums* just starting into growth and requiring repotting should also be attended to; and as all this class of plants require considerable supplies of water, the peat and Sphagnum will be found frequently much decayed. All such ought to be carefully removed and replaced with fresh material; remember, too, that it is much easier to overpot than the reverse. For potting material use good turfy peat and Sphagnum in equal parts, plentifully intermixed with charcoal and clean potsherds. The pots should be quite half full of drainage.

### HARDY FLOWERS.

W. BROCKBANK, BROCKHURST.

IN the herbaceous garden and on the rockeries a successful show in the new year must be planned and prepared for during the next month or two. It won't do to let things alone from year to year, else the weaker plants will succumb, and the stronger become sole possessors of the situation. To so great an extent is this the case in rockeries that it is almost necessary to take them to pieces after four or five years, and to weed out the rank vegetation which has got deep hold of every crevice and covered over every space. If this be not done it will soon be found that favourite plants become altogether lost. But not only is this the case, but it is well to go over both the open garden and rockery at this season; to trim off the clumps which are permanent, to weed out and replant in the reserve garden runners, and seedlings, and crowded-out plants, to examine all bulbs, taking out the excess, and seeing the rest properly soiled and manured for their new flowering time; and filling up all gaps which will surely follow after a summer's bloom-time.

Now is the opportunity for exchanges with brother florists and gifts to friends of spare plants. By exchanging you may steadily increase your collection; and for this end there are circles of friends who usually exchange their lists of duplicates and desiderata, so that a good collection soon increases, and floral friendships grow out of these little barterings and the correspondence arising thereout. Seedlings raised during the summer such as *Aquilegias*, *Primulas*, *Antirrhinums*, *Androsaces*, &c., should now be carefully planted out, and number of good plants of each should be potted off, and plunged in sand or ashes in cold frames,



so that you have double chances of saving your treasures through the winter months. In the same way every plant of value in the open garden and rockery should be duplicated, and cuttings or offshoots placed in pots in cold frames as reserve stock for spring time. In our climate, and after recent experiences of hard winter weather, it does not do to risk all in the open garden, so that if you want to be sure of your stock of choice flowers, you must take the trouble of securing the stock by these precautions. If either fails you have the other in reserve, and if all live you are the wealthier.

All Sedums, Sempervivums, and Saxifrages should be gone over. It is well to grow these plants both in clumps and single crowns, for they have both beauty of mass and beauty of individual form, the one being as well worth cultivating as the other. If the best crowns of these be picked out and planted apart, they grow into grand rosettes, and in due time flower, whilst in the mass they bloom but sparingly, and do not display their full beauty of form. Especially such lovely Saxifrages as *pyramidalis*, *nepalensis*, *Macnabiana*, *altissima*, and *Wallacei* should be treated thus, and as many as practicable planted in pots and kept safely through the winter, so that they may be available in the spring either for the cool greenhouse or the garden. In the same way the Sedums and Sempervivums will come in useful if carefully cultivated. Christmas Roses should also be carefully examined by removing the soil to see that the roots are active and in good health, and manure should be placed on the soil above the rootlets to give vigour to the blooming buds. This plant exhausts the soil by its profuse blooming every year, and merits an annual mulching at this season, which it repays with interest at the very season when its white flowers are most welcome. In ordinary bulbs for the new year it is worth remembering that many of the cheap Lilies are as good for greenhouse work as the more gaudy Hyacinths and Tulips imported from Holland. All the Narcissi make lovely objects when grown in pots, and especially the best of the Daffodils, Emperor, Empress, and Horsfieldi. The Scillas are also very beautiful when bloomed inside, and small groups of half-a-dozen in a 4-in. pot raised in cold frames bloom much earlier when planted out as they are coming into bloom, and furnish bright spots of blue when that colour is secured in the open garden.

### THE ROCK GARDEN.

J. D. HATFIELD, SOUTHWOOD.

PERHAPS now, more than at any other season, the lover of alpine should take a careful survey of his subjects in order to determine which need removal or division. He will probably find some, now that rain has fallen plentifully, that will be showing signs of increase either in the shape of seeds or underground stems, whilst others may be making no headway at all—scarcely holding their own. Alpine plants in their native habitats grow upon rocks and in soils of different kinds; therefore the rock garden should be formed according to the requirements of the different plants that are to be placed on it. The stone most at command is that which is generally used, whether it be sandstone, limestone, or granite, or some of its varieties of schistose character. As a rule, one has not the means of obtaining the proper rock or soil for the different plants, and hence the sickly appearance of some of them, and when that is observed an attempt should be made to place them under more favourable circumstances. *Ajuga moldavica* resembles a pigmy form of our native *A. reptans*. It is now in flower, and forms a very neat carpet. *Pratia* keeps on flowering and fruiting at the same time, assuming in the central portions of its cushions quite a brilliant hue. It stands the winter well, and succeeds better on a calcareous loam than elsewhere. *Campanula Portenschlagiana* is now flowering beautifully for the second time, while spring-struck cuttings of *C. isophylla*, both blue and white, are flowering nicely; *C. Raineri*

even now gives us an odd blossom, but it is busy extending itself by means of its underground stems. *Coronilla iberica* ranks amongst the better and more easily grown rock plants. Plant spring-struck cuttings a good distance apart, say, in June, and in the same season you will have flowering plants. Plants of it, both old and young, are now nicely covered with yellow umbels, having been in flower since June. *Cyclamen neapolitanum* and *C. hederæfolium* are in flower, but they do not do well. I fancy they dislike our limestone; I believe sandstone would suit them better.

Two Pinks, *Dianthus tataricus* and *D. collinus*, are well worthy a place. Their flowers are of good size and colour, deep, arranged in loose but graceful thyrsoid panicles. Both are much alike. They grow about 1 ft. If anything, *D. tataricus* is the neater of the two, and consequently better adapted for the rock garden. These kinds are particularly valuable now, as they are, with the exception of *D. cruentus* and a variety of it, the only Pinks in flower. *Linaria hepaticæfolia* is a very dwarf, neat, and persistent flowering Toad-flax. *Oxalis Bowiei* has been very fine; it has beautiful large, deep rose-coloured flowers. The fruits of various Roses are now very interesting. *Rosa spinosissima*, a very dwarf growing kind and ornamental too when flowering, becomes well laden in autumn with round black fruits. *R. pomifera* has a magnificent fruit, very large, and of a beautiful deep chocolate colour. *R. pyrenaica* has long orange-red fruits, and, as they are arranged upon the plants, look quite handsome.

### FRUIT.

W. COLEMAN, EASTNOR.

**Hardy fruits.**—The gathering of the different kinds of hardy fruit will now require daily attention. The early part of the day as soon as the foliage is dry is the best time to gather Peaches and Nectarines, and to insure the full flavour of the fruit they should be removed from the trees before they become what is termed dead ripe. By following up a regular system of looking over all the trees every morning, injury by falling to the ground is avoided, and by gathering under rather than over-ripe, and placing the fruit in shallow baskets well padded with paper shavings, Peaches and Nectarines will keep for several days in a cool fruit room, or, that which is of greater importance to many, they will bear packing and transit by railway without showing the marks and bruises which mar the beauty and spoil the delicate flavour of so many fine Peaches. As soon as the earliest trees are cleared of the crop they should be well syringed to clear them of red spider, and if pure water is not considered sufficient, flowers of sulphur, reduced to a paste with soft soap, may be added and applied with the garden engine. Where trees were heavily mulched and watered through the hot weather, the copious rains we have recently had will have started another break of laterals. These, together with old wood from which the fruit has been gathered, must be removed to let in light and warmth, care being observed that an even spread of moderately strong, short-jointed shoots is left to furnish the next year's crop. In low, damp situations unfavourable to the ripening of strong wood, vigorous young trees require biennial lifting and replanting until they begin to carry full crops of fruit. To perform this operation successfully, all the roots should be carefully preserved and relaid within a few inches of the surface. Strong calcareous loam with a liberal admixture of old lime, rubble, or burnt earth suits all kinds of stone fruit trees: the addition of manure should be confined to the surface as a mulching, and the work should be completed in dry weather before the leaves fall.

**Pears.**—Where the varieties are judiciously selected, and the trees are well managed, the Pear crop stands first on the list of hardy fruits. On warm, dry soils the extension of the roots and branches answers best, but in cold gardens, ample drainage, a generous mellow compost, and frequent lifting form important items. Pears, like Peaches, almost without exception, are best when gathered before they are fit for use, and as

many of the autumn kinds will now part freely the most forward should be gathered from time to time, and placed on shelves in the fruit room for succession. Late kinds may hang for a considerable time yet, but nothing is gained by leaving them on the trees after the leaves have performed their functions and show signs of falling. If tomtits attack the fruit, small meshed fishing-nets must be suspended from the coping, and if necessary secured to boards placed on their edges 1 ft. or so from the wall, but in nine cases out of ten the loosely suspended net will have the desired effect. Pay particular attention to the removal of breast-wood by cutting back to within one or two buds of the base. Ease the ligatures on newly grafted trees, and see that the summer growths are well secured to stakes.

**Orchard houses.**—By this time nearly all the fruit will have been gathered from the trees in this structure, and many of them will have been turned out of doors to ripen up their wood. Where spider has been troublesome this turning out, particularly in warm districts, may be an advantage; but in this locality where we are resting upon marl, and surrounded by limestone hills, we find a well ventilated house the best place for ripening up the wood of nearly all kinds of stone fruit trees. Now is the time to make an examination of the general stock of Peaches, Nectarines, Plums, and early Pears, and to draw out all that require potting, reducing, or shaking out. In many instances full-sized trees may be reduced and repotted in the same pots, but before they are returned, the latter should be well washed and thoroughly dried, other wise the new compost will cling to the sides. Good drainage is indispensable, and a strong calcareous loam, lime rubble, or burnt earth and bone dust will make a sound, rich compost capable of producing excellent fruit-bearing wood. After potting trees that have been severely reduced, they may be the better for a fortnight under glass, where they can be shaded from bright sunshine and syringed occasionally, but the inexperienced would be astonished to find how quickly trees that are potted with the leaves upon them form new roots in the fresh compost. In days gone by it was the practice to defer lifting fruit trees until every leaf had fallen, but a long experience of successes and failures has proved to my satisfaction that all this kind of work should be done before the leaves are ripe enough to fall at the touch, and while the earth contains warmth that will heal wounds and induce the formation of new spongioles. Trees that do not require potting may be placed where they can have plenty of light and air, with a gradual reduction in the supply of water, but anything approaching starvation or complete dryness must not be allowed at any time, not even when stone fruit trees are completely at rest. Many Peach trees cast their blossom buds in the spring through being kept too dry through the winter, and on this account the amateur who has not paid for his experience will do well to winter his trees in a dry, sheltered, but airy place in the open air. Many of the better kinds of Pears pay well for culture in pots, and it is very interesting to see the immense crops of fine large fruit which small trees on the Quince stock bring to maturity. Choice kinds only, such as Marie Louise, Beurre Superfin, Pitmaston Duchess, Glou Morceau, Belle de Noël, Josephine de Malines, and that excellent Pear Winter Nellis, should be potted, and these should be well prepared by annual lifting and replanting in stiff loam out of doors, or maidens may be potted and plunged up to the rim for twelve months before they are wanted. It may be necessary to go over vigorous young trees for the last time this season, and to remove or stop strong lateral growths, but from this time care must be taken in the removal immediately above a triple bud, as many Peach trees set wood buds sparingly from a few inches above the base to the terminal point, and without a wood bud to draw the sap blossom buds are useless.

**Pines.**—Although Pines at this season make rapid growth, the leaves have become thoroughly inured to sunshine and quite capable of bearing all the light and warmth we are likely to have after



this date without the aid of shading; indeed, plants in all stages, with the exception of newly-potted suckers, will be benefited by the free admission of every ray of sunshine that can be secured for them. Keep a steady bottom heat of 85° to 90° about the roots of Queens intended for early starting, and give just sufficient water to maintain a healthy moisture in the soil. Ventilate freely on fine days, by opening the sashes when the temperature touches 80°, run up to 90° with sun heat, and close about three p.m. or earlier when it begins to recede from the last named figures. See that late starters and others swelling off fruit have a light place with a bottom heat of 90°, and help them forward while the weather continues good, by closing up with an abundance of sun heat in preference to hard firing when days get dark and nights become long and cold. Prepare tan or leaves by frequent turning for the renovation of plunging beds in October, and have a good stock of thin sods of turf from an old pasture stacked in a dry state in an open shed for spring potting.

#### KITCHEN GARDEN.

R. GILBERT, BURGHEY.

THE month of September is an important one in this department. Storing Onions should be one of the first operations. I find this wet and unseasonable weather is causing mildew at the roots, therefore no time must be lost in securing this important crop. Potato lifting will have to be proceeded with. Ours are all lifted except Champions, which are swelling fast. The crop of Victorias and Beauty of Hebron is prodigious, and the tubers large and fine without spot or blemish. Immediately the Onion land is cleared, rake it over and plant Cabbages, crow-bar fashion, no digging being required. Dig and well manure any south or west border at liberty, and plant winter Lettuce, Black Seeded, Brown Cos, and Hick's Cos being the hardiest and best varieties to plant. Earth up Celery on fine dry days, and be careful to press the soil round the plants with the hands; little earthings often give the best results. Now is a capital time to sow in any outlying frames Lettuce and Cauliflower to stand the winter under glass. Cauliflowers for hand-lights should be encouraged to grow and make stiff plants for hand-lights.

#### THE INDOOR GARDEN.

##### JAPANESE CHRYSANTHEMUMS.

As in the case of the Dahlia, we have now sufficient diversity in the different sections of the Chrysanthemum to suit all tastes. The large globular and exquisitely double show Dahlias have in a great measure given way to the now prevalent taste for single-flowered sorts, and these again may some day have to give place to the section which will, without doubt, spring from the singular Mexican Cactus Dahlia, which is among Dahlias what the Dragon-flowered sorts are among Chrysanthemums. These Dragon or Japanese Chrysanthemums have given this beautiful autumn flower quite a new interest, for before they made their appearance the improvers of the large-flowered sorts had already reached the climax of perfection, so that when the Japanese sorts came upon the scene attention with regard to improvement was immediately directed to them. The first examples of the Dragons were quite different from what the majority of them are now, the florets being much more narrow and the flowers altogether smaller than those of the finest varieties now in cultivation. There is something in the wild aspect of these Japanese Chrysanthemums that is admired by everybody—even by the conventional florist, who is proud to exhibit them along with globular-shaped sorts. We confess a great partiality for these tasselled

flowered kinds, and we hope that in the endeavours to improve them as regards size and colour, their unsymmetrical form and tassel-like aspect may be preserved. There are now about half a hundred good sorts worth growing, representing a great diversity of colour. The kind here illustrated is the beautiful early-flowering Elaine, which is so much valued for the pure whiteness of its flowers and especially in Covent Garden Market, where, in a cut state, they are favourites.

W. G.

about 5 in. long, and their curious little traps quite 3 in. across when wide open. It would be interesting to know whether these plants had been grown in the pans in which they were shown, and I am sure Mr. Parshaw would be conferring a great favour on readers of THE GARDEN if he would kindly say a few words respecting his mode of culture. Professor Sanderson, who has for some time now been studying the habits of this vegetable wonder, would be delighted to lay his hands on some of Mr. Parshaw's plants, and we all would be glad to be able to 'grow for our-



Japanese Chrysanthemum (Elaine).

Venus' Fly-trap (*Dionaea muscipula*).—Lovers of this little curiosity who visited the Manchester show would be astonished at the wonderfully large healthy plants shown by Mr. Parshaw, of Fulwood. I have grown the plant for some years now, and thought I had been pretty successful with it, but my eyes were indeed opened by these Manchester examples. They were shown in two large pans, which were covered with a thick layer of leaves of the deepest green, each

self such fine specimens as those with which Mr. Parshaw by his skilful management was enabled to astonish us at Manchester. B.

Soil for Maiden-hair Ferns.—What is the right soil for Maiden-hair Ferns? and should they be grown in shallow or high pots, in shade or sun? M. C. Cornwall. [Under the name Maiden-hair Ferns there are many plants whose cultural requirements are as various as their appearance and habit, the whole of the members of



the genus *Adiantum* being generally known as Maiden-hairs. There are few Ferns that will not thrive in an equal mixture of peat, loam, and leaf-mould, and unless high cultivation is desired this mixture is the best that can be used for a general collection, with perhaps a little extra loam for the stronger growing kinds. The common Maiden-hair (*Adiantum cuneatum*) may be grown in any fresh open soil. I have seen fine specimens 3 ft. through, with fronds almost as large as a page of **THE GARDEN** grown in a soil taken from a Potato field. Soil, however, is only one of the requirements of plants; the most suitable compost fails to produce healthy growth where the watering, temperature, or light are at fault. Pots of the same depth as width—the proportions of those generally used—will suit *Adiantums*. A good drainage is necessary, for which about one-fourth of the pot filled with crocks and covered with a layer of fibry soil is sufficient. No Ferns will grow in bright sunshine under glass, and *Adiantums* require protecting from all strong light.—B.]

**Gymnogramma schizophylla**.—This beautiful little Fern, recently introduced from Jamaica, and sent out by Messrs. Veitch, is likely to become a great favourite with Fern fanciers, its singular habit of producing young plants at the apex of the old frond being something new amongst *Gymnograms*. Yet, judging from my experience with the plant, some little difficulty will be experienced by beginners in keeping it in health and vigour, its rather annoying trick of turning suddenly brown being a point against it. This, however, may be owing to some flaw in the treatment under which I have tried it, though at present I have one plant quite as fine as any I have seen. This is in a wire basket in a warm, moist, shady nook in the Fernery, where it is frequently watered at the roots, but never overhead. The soil in which it is planted is a light loam, with a little sand and charcoal. I have heard from one who has gathered the plant in Jamaica that a low greenhouse temperature would suit it in this country; but after having tried my plant in such a place and almost lost it, I am rather doubtful of the correctness of this statement.—B.

**Forcing Violets**.—Where these interesting winter flowers are grown the plants should now be fit for transferring to their winter quarters. Frames used for Cucumbers or Melons form good positions for them; if filled with good soil to within 1 ft. of the glass, fork it up and proceed to plant the Violets, being careful to lift them with as much root as possible. We usually take a steel fork and thrust it down all round the plant; it then lifts up bodily with a large circular ball; these are set on the bed nearly as thickly as they will stand, and some good soil is worked in carefully between them. The surface is then covered with Cocoa-nut fibre, and a good soaking of water is given; after that the lights are pushed over them at night and during heavy rains, but they are tilted at the back as long as frost keeps off. Under these conditions well prepared plants begin to flower freely at once, and continue to produce blooms throughout the winter. Marie Louise, Neapolitan, and The Czar are good useful kinds, and universally appreciated.—J. GROOM.

**Criticism at Manchester**.—In **THE GARDEN** for the 10 inst. (p. 260) I notice a note on this subject which has induced me to send you the accompanying cutting from the Manchester paper referred to. As descriptive of the show it is puerile, but is a fair example of the class of article given by newspapers on such occasions, viz., a hash of mis-spelled names, collected hurriedly by the reporter from the tallies in the pots and decorated with capitals or small initials at the taste of the writer. Just a catalogue of the prize exhibits without one line of intelligent criticism or appreciative encomium. Would it not be good work to give such an article a condemnatory paragraph? I do not expect a newspaper reporter to be a finished gardener, but if he cannot spell the names, even those which he adduces as

examples of horticultural nomenclature, he should, I think, keep clear of them.—ROBT. OKELL, *Selden Chambers, 62, King Street, Manchester.*

#### ROYAL HORTICULTURAL SOCIETY. SEPTEMBER 13.

A FINE display of Dahlias formed the chief feature of attraction on this occasion, and a large collection of Apples and Pears from Messrs. Wm. Paul & Sons formed a source of interest to many. First-class certificates were awarded to

Mr. G. Rawlings, Romford, for—  
**Dahlia George Rawlings**.—A large round flower with cupped petals, of a dark velvety maroon.

Mr. Charles Turner, Slough, for—  
**Dahlia Pioneer**.—A black flower, of rather coarse texture, but very distinct as regards colour. Messrs. Keynes & Co., Salisbury, for—

**Dahlia Mrs. M. Batchelor**.—A medium-sized flower, of good form, and of a brilliant scarlet colour.

Messrs. Veitch & Sons, Chelsea, for—  
**Euonymus latifolius**.—A fine standard plant furnished with long slender branches, profusely hung with curious red fruit.

**Sarracenia Courti**.—The result of a cross between *S. purpurea* and *S. psittacina*. A handsome dwarf growing hybrid.

Mr. Wm. Bull, Chelsea, for—  
**Pellionia Devoniana**.—A handsome drooping plant resembling a *Tradescantia* in foliage, but closer and handsomer in growth and appearance.

Mr. Owen, for—  
**Adiantum Oweni**.—The result of a cross between *A. amabile* and *A. cuneatum*. It makes a handsome specimen, and we should say would do well for table decoration.

The Royal Horticultural Society, Chiswick, for—

**Capsicum Little Gem**.—A remarkably dwarf compact growing kind studded with small oval berries resembling those of a *Solanum*.

**Pitcairnia Jacksoni**.—A free growing kind with dark spiny-edged foliage, and bearing strong spikes of rich orange-crimson flowers.

Messrs. Laing & Co., Forest Hill, for—  
**Pelargonium Mrs. Miller**.—The finest coloured tricolor we have seen for a long time, being dwarf in habit and brilliant in colour.

Messrs. Wm. Paul & Sons, Waltham, for—  
**Cut sprays of Euonymus latifolius**.

Mr. J. Fraser, Lea Bridge, for—  
**Ixora Regina**.—A kind bearing waxy cinnamon coloured flowers in great abundance even on small plants.

Mr. Turner showed a magnificent collection of show and fancy Dahlias; also a remarkably fine group of bedding Dahlias, among which there was great variety both of colour and form. Silver medal recommended.

A fine display of single and double Dahlias also came from Messrs. H. Cannell and Sons, Swanley, who likewise exhibited single and double Marigolds and Begonias. A medal was recommended. Mr. Ware, Hale Farm Nurseries, Tottenham, showed a large collection of single Dahlias, among which were grand blooms of White Queen, an excellent kind for cutting from at this time of the year. Good seedling Dahlias were shown by Messrs. Keynes and Co, Salisbury, also by Mr. G. Smith, New Villa, Hedge Green, Edmonton. A group of bedding Dahlias, *Celosias*, *Globe Amaranthus*, *Bonvardias*, *Torenia*s, &c., came from the Royal Horticultural Gardens, Chiswick.

Messrs. Veitch and Sons showed a grand variety of *Cattleya gigas*, a hybrid *Nepenthes*, and a specimen of *Lælia elegans*; also a basket of plants of *Cratogeomys Laelandi*, a free fruiting kind, having orange berries, and quite distinct from *C. pyramantha*, which was shown for comparison.

Messrs. Watson and Sons, Marlborough Nursery, Islington, showed a good collection of early-flowering *Chrysanthemums*, &c. Mr. Dean, Bedford, exhib-

ited an excellent strain of French and African Marigolds, the former being very dwarf and compact, and the blossoms finely striped.

Messrs. Carter & Co., High Holborn showed two seedling *Crotons*, named respectively *C. Beali* and *C. Dunnetti*, which, when better developed, will be very handsome. Mr. B. S. Williams furnished plants of *Stephanotis multiflora* in 4-in. pots, bearing good trusses of waxy-white blossoms. Mr. Wm. Bull, Chelsea, exhibited *Paullinia thalictifolia argentea*, a light graceful kind with glaucous foliage. Mr. Temple, gardener to J. Donaldson, Esq., Chiswick, showed finely coloured plants of *Amarantus* and some very dwarf *Cockscombs*. Mr. Riches, Grove Nursery, Tooting, contributed a collection of hardy flowers, among which were *Rudbeckias*, *Pentstemons*, early-flowering *Chrysanthemums*, *Geum coccineum*, double *May Weed*, *Coreopsis*, *Alliums*, *Campanulas*, *Larkspurs*, &c. Messrs. Jones & North Hope Nurseries, Lewisham, showed a group of seedling *Fuchsias*, which, however, showed no improvement on existing kinds.

A fine display of *Roses* came from Messrs. Paul & Son's Nurseries, Waltham Cross. The best autumn blooming kinds were represented, and most of the blooms, we believe, came from plants on their own roots grown on low walls near the glasshouses, &c.

Messrs. Wm. Paul & Sons, Waltham, showed about 250 dishes of Apples and Pears, consisting of all the best varieties in cultivation. Mr. Dean, Bedford, exhibited an Apple named *Duchess'* Favourite, which resembles in appearance the Worcester Pearmain. It is a handsome fruit of medium size, and highly coloured, of good quality, and one of the most esteemed of market Apples. Mr. G. Hawkins, gardener to Colonel Tuberville, furnished good examples of Plums and *Beurré Hardy* Pears gathered from trees grown in 14-in. pots in cool houses. The Plum trees were said to have borne from 6 doz. to 9 doz. fruits each, and the Pear trees 2 doz. Messrs. Bunyard, Maidstone, showed a good sample of Worcester Pearmain Apple, and Mr. Bennett, Deepdene, Dorking, a handsome dish of Red Astrachan.

#### LATE NOTES AND QUESTIONS.

**Best Peaches and Nectarines out of doors**.—Will some reader of **THE GARDEN** kindly tell me which are the best kinds of Peaches and Nectarines to grow for profit, as I am about to plant a wall with trees, facing the south east subsoil gravelly?—MCL.

**Seeds of *Gentiana lutea***.—I have some seeds of *G. lutea*, gathered this summer at Mont Dore, which I should be glad to give to anyone who would like to grow them.—EBBA A. BAYLEY, *Catford, Sidmouth.*

**Manuring small fruits**.—Is this a good time to manure Strawberries and Raspberries? and should the manure be dug in?—CLONMEL. (September is the month to clean out the rows of Strawberry runners, and to give the plants a heavy mulch of good farm-yard manure; but never dig between the rows. As to Raspberries, cut away all last season's bearing wood, thin out this summer's canes to get them hard and ripe; mulch with farm-yard manure, but never dig.—K.)

**Mildewed Vines**.—*Enquire r.*—Repeated sulphurings will certainly kill mildew. Wet the leaves first in order to make the sulphur stick to them. Encourage the growth of the healthy laterals, and later on when the vines are pruned, clean them well with soft soap and sulphur.

**Pine-apples**.—Will any of your readers inform me the reason why the culture of the pine-apple is discontinued in many large gardens?—BETA.

**Planting Vines**.—I am constructing some vineries (span and lean-to), and when finished intend planting them. "Thompson's Gardener's Assistant" shows the vines to be planted between the brick-work and the hot-water pipes, which I cannot think right. I think the cold air ought to pass over the hot-water pipes before it reaches the vines. I have planted many vines, but never between the brick-work and the pipes. Will some one favour me with advice in the matter?—J. B.

**Fair Play**.—We have done our duty in the matter, and there seems to us no need to reopen the question, especially to reprint matter which has already had extensive circulation.

*Esquire, F.R.H.S., &c.*—Very amusing. Placed in a pigeon-hole for future use, if required.

**The Garden Annual**.—A new and improved edition of this is in preparation, and we shall be greatly obliged to all who have corrections to make in any of its lists or departments if they will kindly communicate with us at once.



## THE ENGLISH FLOWER GARDEN.

**Aquilegia chrysantha** (*Golden Columbine*).—A tall, vigorous, and beautiful species, lasting on many soils as a good perennial where the other species perish. This plant was at first by persons who look at herbarium distinctions only erroneously supposed to be a variety of the Rocky Mountain Columbine, and named such by Torrey and Gray. After cultivating the plant, however, for several years, and comparing it in a living state with the Rocky Mountain Columbine (*A. cœrulea*), Dr. Gray described it as a new species, *A. chrysantha*. It is one of those cases in which other than purely botanical characters have weight; but it also differs in the flowers being not nearly so much distended as in *A. cœrulea*, and the plant is far more robust. The plant comes from a different geographical range, grows taller, flowers nearly a month later, and blooms for two months continuously; these peculiarities, added to its full yellow colour, seem to warrant it to rank as a species. Like the Rocky Mountain Columbine, it has a very long and slender spur, often over 2 in. in length. It is perfectly hardy, more so than the Rocky Mountain species. It thrives even on the stiff clay soils north of London and enjoys wet, though it is none the less free in more happy situations. It comes true from seed, which is most safely raised under glass, and pricked out carefully when young. Attaining a height of 4 ft. under good culture, it becomes an important plant for the centre of a bed of the finer perennials or for a group in the properly arranged mixed border. Should seedlings from it prove crossed with inferior kinds, seed must be obtained from wild plants, which cannot be difficult through the American houses. It would be a great pity if such a distinct, beautiful, and hardy plant should degenerate in our gardens.

**A. glandulosa** (*Altian Mountain Columbine*).—This is a very beautiful species with handsome blue and white flowers, and a tufted habit. Flowers in early summer—a fine blue, with the tips of the petals creamy-white, the spur curved backwards towards the stalk, the sepals dark blue, large, and nearly oval, with a long footstalk. The upper part of the stem is covered with glandular hairs. A native of the Altai Mountains, and one of the most desirable kinds for the rock garden or the select border, in well-drained deep sandy soil. Increased by seed and by very careful division of the fleshy roots, when the plant is in full leaf. If divided when it is at rest, the roots are almost certain to perish, at least on cold soils.

The Forbes Nurseries, in Morayshire, have long been famous for the successful growth of this plant; it has no special care there, and there is no trade secret about the treatment, which is entirely in the open air. The soil is described as "a rich mellow earth, partaking a little of bog or peat earth, and rather cool and moist than otherwise." It flowers the year after sowing, and when full grown is impatient of removal, like most Columbines, but if not transplanted when more than two years old, it continues to flower for at least five or six years, sometimes for more. Those who can get true seed of this fine plant will do well to raise it with care, and plant out when very young into well-prepared beds of moist, deep peaty or sandy soil, putting some of the plants in a northern or cool position. It would be well also to sow some seeds where the plants are to remain, and in various other ways to try and overcome the difficulty which has hitherto attended the culture of this lovely plant. The seeds of other Columbines have a bright peri-perm, while those of this species are un-

burnished, arising from little corrugated markings with which the microscope shows them to be covered.

In many cases an inferior plant bears the name *glandulosa*. Mr. Brockbank says: I have referred to the original specimen of *A. glandulosa*, sent by Prof. Regel, of the St. Petersburg Botanic Gardens, from the Altai Mountains. It is a different plant from the *A. glandulosa secunda*, being more than twice as tall and in every way more robust. The specimen at Kew is nearly  $1\frac{1}{2}$  times the height of the large folio paper in which it is preserved, and the flower measured  $4\frac{1}{2}$  in. in diameter. The plants in Kew Gardens are not this variety—the true variety—of *A. glandulosa*, and, as far as I know, it is not to be found with any of our nurserymen.

**A. Skinneri** (*Skinner's Columbine*).—This is a distinct and elegant kind. The flowers are on long slender pedicels, the sepals being greenish coloured and lanceolate; the petals are small and yellow; the spurs are nearly 2 in. long, of a bright orange-red, and attenuated into a slightly incurved club-shaped extremity; the leaves are very glaucous, their divisions being sharply incised; the flower-stems 18 in. to 2 ft. high. Though coming from so far south as Guatemala, owing to the fact that it is met with in the higher mountain districts, it is nearly, if not altogether, hardy, and should be more frequently cultivated than it is. Here, again, crossing steps in and too frequently mars its beauty. While the name may be often seen, the true plant is rare, nor are the conditions that insure its perfect development well known if they exist with us. It is a late bloomer.

**A. viridiflora**.—As a rule green flowers are not very much admired, but this Columbine is an exception; the Sage green of the flower and delicate tint of the leaf form a striking contrast. Out of doors in the border the plant may not be noticed, but if a flowering spray or two is cut and placed in a small glass its great beauty of form and colour, too, are soon recognised. There is a variety of it known as *A. atropurpurea*. The sepals are green, but the petals a deep chocolate. The plant is a vigorous grower, a native of Siberia, and is synonymous with Fischer's *A. dahurica*. The green Columbine is a plant for a quiet corner in a bed of shrubs or any other place in which it will not be called upon for a blaze of colour. We also think it well deserves a place in the nursery or cutting beds of hardy flowers. It has a delicate and exquisite fragrance as good in its way as the singular beauty of form of the flower when closely examined and as the novelty of the Sage green of the bloom. It is easily raised from seed.

**A. vulgaris** (*Common Columbine*).—A familiar occupant of nearly every cottage garden. There are many good and distinct forms in various colours, including various double kinds, flowering from May till towards the end of summer. The common Columbine grows with a vigour, and increases itself by means of seed with a persistency and a power of variation that is quite surprising. Whether it is a true native is doubtful, but, be that as it may, it has become thoroughly at home, and no one who has once seen it wild will readily forget the combination of grace and beauty which it presents. In order to stimulate those who possess extensive wooded estates to its cultivation or establishment along the margins of drives, where shelter is afforded, Mr. Niven states that at Broughton Woods, in North Lincolnshire, this Columbine raises its stately erect stems to a height of 3 ft.; and in the month of May, when the Lily of the Valley, which grows naturally by acres there, adds its delicious perfume, the charm of a walk there, especially after a

gentle shower of rain, is very great indeed. But, however valuable for the wild garden, the many forms of the common Columbine are most valuable plants for gardens in which it is worth while now and then raising a batch of them from fresh seed of a good mixed strain. It would be most desirable also to select and fix varieties of the common Columbine of good distinct colours. One may often see a variety of this plant nearly as handsome as any of the choicer kinds. There is a bold single white form which is a most distinct and handsome plant. *A. Vervœneana* is a form with mottled leaves.

The varieties of our common Columbine and some hybrid forms are so free and hardy, that they may well be used in the wilder and more picturesque parts of large pleasure grounds or parks in the long Grass, by streams, or in copses, among Foxgloves, Geraniums, or long Grasses. To establish them the ground should be well dug if the vegetation is dense, and the seed sown on the spot, or raised in beds and the seedlings transplanted. Where bare patches occur from any cause, and where the seedlings have a chance of coming up without being strangled by other plants, seed may be scattered with the hope of establishing some tufts or colonies in wild places. The time to sow the seed is soon after it is ripe.

**A. Witmanniana**.—A species quite distinct from *A. glandulosa* is often sold for it. It is one of the most vigorous in growth and free in flowering of all the Columbines in cultivation. A plant of it has grown in the same spot in my garden for ten years, and produces five or six stems more than 3 ft. high, each bearing twenty to thirty flowers. The flowers have dark purple sepals and a white corolla, but are far inferior in every way to those of *A. glandulosa*; in fact, it is less ornamental than many seedling varieties of *A. vulgaris*, which I have raised, but which, unfortunately, I can neither divide nor reproduce true from their own seed.—B.

It were easy to say more of other species, but among the preceding the cultivator will be certain to find the highest beauty of form or colour, and the fullest vigour which the genus is known to possess. Collectors will very properly seek other species, but for all gardening and artistic purposes the preceding are the best so far as the family is now known. For the choice rock garden some of the dwarfer and more delicate alpine species may be desirable. *A. fragrans* is praised for its scent, but the green Columbine is very good in this way.

**Arabis** (*Rock Cress*).—An extensive family of hill plants, few of which are grown, though some are worth a place.\*

**Arabis albidæ** (*White Rock Cress*).—Through long years of neglect of all sorts of dwarf hardy plants this, the white *Arabis* of our gardens, has held its own well—the most popular plant in our gardens, and in the barrow of every London flower-hawker in the spring. It will grow in any soil or situation, flourishing far into our cities as well as in the open country, where its profuse sheets of snowy bloom may expand in early spring. By seed, or division, or cuttings, it is as easily increased as a native weed, and is a valuable ornament of the mixed border, the spring garden, the rockwork, and for naturalisation in wild and bare rocky spots. In the rock garden it is well fitted for falling over the ledges of rocks; it may also be used as an edging to clumps of shrubs, though it is in better taste to associate it in such positions with groups of plants like the *Aubrietias*, the rock *Alyssum*, and other easily grown alpine flowers that bloom early in the year. *A. albidæ* is closely allied to the Alpine Rock Cress (*A. alpina*), so widely distributed on the Alps, and by some would be con-



sidered a sub-species of that plant, but it is sufficiently distinct, and by far the best kind. There is a variegated variety in cultivation, known by the name of *Arabis albidia variegata*, which is useful as an edging plant both in spring and summer flower gardens. It is the dwarfest and whitest of the variegated Rock Cresses that are grown under the name of *A. albidia variegata*. The yellower and stronger variety, frequently called *A. albidia variegata*, and which is the best for general purposes, is a form of *Arabis crispata*, of which the ordinary green form is not worthy of cultivation.

**A. blepharophylla** (*Rosy Rock Cress*).—This is not unlike the white *Arabis*, but the flowers are of a rosy purple. It varies a good deal, but there is no difficulty in selecting a strain of the deepest rose. It is impossible to have anything more effective than healthy tufts of this plant in the month of April. It is best raised every year from seed, which, like most Cruciferous plants, it yields freely. In mild districts and on light soils plants should be tried out every winter. It does not appear to have answered well after many trials, and as a rock plant its annual and tender character are against it. A native of North America; easily increased by seed.

Among other kinds of *Arabis*, *A. procurrens*, a dwarf spreading kind, with shining leaves and small whitish flowers, is often grown, but is not worthy of culture. There is, however, a brilliantly variegated form of it (*A. procurrens variegata*) which is worthy of a place in a collection of silvery and variegated hardy plants. The prettiest of the variegated Rock Cresses is *A. lucida variegata*. It forms very neat and effective edgings in winter, spring, and summer flower gardens, from its striking and distinct character is effective on rockwork, and thrives best and is easiest to increase by division in open, sandy, and yet moist soil. The best time to divide it is early in autumn, April, or very early in May. It need scarcely be added that the flowers should be removed when they appear. The green form of this (*A. lucida*) has a fine effect when associated with such plants as the *Echeverias*, and, if judiciously used, would give character and, perhaps, add a new feature to this style of bedding. Its habit is good, and it makes a beautiful edging—plant for plant—with *Echeveria secunda glauca*. *A. purpurea*, an interesting species for botanical, large, or curious collections, and bearing pale bluish and lilac flowers, is not worthy of general cultivation while we possess such brilliant plants as the purple *Aubrietias*. *A. arenosa*, from the south of Europe, is a pretty annual kind that may prove useful in the spring garden, and which might be naturalised on old ruins or dry bare banks. *A. petraea* (Northern Rock Cress) is a neat, sturdy little plant, with pure white flowers, a native of some of the higher Scotch mountains, and very rarely seen in cultivation, but when well developed on a moist yet well-exposed spot on rockwork is very pretty.

**Aralias** (*Chinese Rice-paper*).—These embrace many plants of very diverse aspects, and few that are fitted for the open air in our climate; but in the case of *A. canescens* and its relative (*A. spinosa*), the Angelica tree of North America, we have subjects which thrive perfectly well in our gardens, and which in the size and beauty of their leaves are far before many "foliage-plants" carefully cultivated in hothouses at a perpetual expense. These and even the tender kinds may find a place in the flower garden, and the vigorous herbaceous in the woodland. The shrubby species cannot be properly spoken of here, but by cutting them down occasionally they may be kept in the condition of fine-leaved plants, like the *Ailantus* treated in a similar manner.

**Aralia papyrifera** (*Chinese Rice-paper plant*).—This, though a native of the hot island of Formosa, flourishes vigorously with us in the summer months, and is one of the most valuable plants in its way, being useful for the greenhouse in winter and the flower garden in summer. It is handsome in leaf and free in growth, though to do well it must, like all the large-leaved things, be protected from cutting winds. If this *Aralia* be planted in a dwarf and young state, it is likely to give more satisfaction than if planted out when old and tall. The leaves spread widely out near the ground, and then it is very ornamental through the summer. Prefer, therefore, dwarf stocky plants when planting it in early summer. It should have rich, deep soil and plenty of water during the hot summer months. In Battersea Park a bed of *A. papyrifera*, 13 ft. in diameter, attained a height of 5 ft., from cuttings struck in the spring. The plants were left out all the winter, and, though killed to the ground, sent up many suckers the following spring. It is so fine in form of leaf and habit that no one will be at a loss to place it where it will have a good effect. It is not so useful northwards in the open air as about London and in the south. "Its stem being nearly all pith does not strike readily; therefore a stock of it cannot be got quickly in that way, but if the roots near the stem are examined they will be found to be fleshy. When the plant is taken up, let each of these be cut into pieces about 1 in. long; insert them in light soil, letting the whole be covered, and place them on a shelf near the glass in a temperature of 80°. They will, in due time, throw out shoots, which should be left until they are 3 in. in length, when they may be potted, leaving them in heat, say, of 70° until established. They should then be removed to a colder temperature, and thence to a frame to harden off. In the south of England this plant is almost hardy, and may be wintered in a cold frame, but it should be kept rather dry."—J.

**A. Sieboldi**.—A shrubby species, distinct, with fleshy, dark green leaves. It is usually treated as a greenhouse plant, but is hardy and makes a very ornamental plant on soils with a dry porous bottom. It grows remarkably well in the dwelling-house; in fact, it is one of the very few plants of like character that will develop their leaves therein in winter. Not difficult to obtain, it may be used with advantage in the flower garden or pleasure-ground. It would form striking isolated specimens on the turf, and is also fitted for association with fine-leaved plants. *A. californica racemosa* and *racemosa* are vigorous herbaceous kinds of very little value, except where a large number of such perennials are desired.

**Arctomecon californicum**.—A North American plant of the Poppy family, but of which little is known in cultivation.

**Arctostaphylos Uva-ursi** (*Bearberry*).—A neat evergreen mountain shrub, 1 ft. high, often less, sometimes associated with rock or alpine plants. Has small rose flowers in early summer and red berries in autumn. Abundant in hilly places in Europe and North America. Borders and rough rockwork, especially for hanging over the brows of rocks. It grows in any soil, but prefers a moist one. Increased by division.

**Arctotis**.—Showy half-hardy perennials of the Daisy Order, natives of S. Africa and Abyssinia. *A. breviscarpa*, orange and black; *A. grandiflora*, yellow; *A. repens*, yellow; are useful *Gazania*-like summer bedding plants. They grow freely from cuttings put in in July. Mr. H. Harpur Crewe gives high praise to *Arctotis grandiflora*. "I have grown it for some years as a summer bedding plant in a mixed herbaceous border, where it is most effective.

I procured it originally from Tresco Abbey, in the Scilly Isles, where it is perfectly hardy, and forms one of the principal ornaments of the beautiful gardens of my friend, Mr. Dorrien Smith. Why does not some enterprising nurseryman re-introduce the other beautiful species of this showy family which our forefathers used to grow? It grows freely from cuttings put in in July; if inserted later they are apt to damp off."

**Arenaria** (*Sandwort*).—A very numerous genus, of vast distribution over northern and alpine ranges, and also in temperate countries. Comparatively few species are in cultivation in relation to the great number known, and these are dwarf plants, easy to grow, and suited mainly for the rock garden.

**A. balearica** (*Balearic Sandwort*).—A pretty little plant, which coats the face of rocks and stones with the dwarfest verdure, and then scatters over the green mantle countless white starry flowers. Plant firmly in any common soil near the stones or rocks it is desired to cover, and it will soon approach and begin to clothe them. Flowers in spring and continuously, and is readily increased by division or seeds, and quite easy to grow. On cold ones it perishes in winter, but its true home is on the rockwork. It is easily known at any season by its dense tufted cushions of very small leaves. Corsica.

**A. montana** (*Mountain Sandwort*).—A very ornamental rock plant, having the habit of a *Cerastium*, and numerous fine pure white and large flowers. It is the best of the large Sandworts, and should be in every collection of herbaceous or alpine plants. On rockwork it would be well to plant it where its shoots might fall over the face of a rock, giving it any kind of light soil. France. Easily raised from seed.

**A. purpurascens** (*Purplish Sandwort*).—Distinguished from other cultivated kinds by its purplish flowers, produced in abundance on a dwarf densely tufted mass of smooth, narrow, oval pointed leaves. It grows plentifully over all the Pyrenean chain, is perfectly hardy, and, like the other kinds, increased by seed or division. It should be associated on the rockwork with the smallest of its brethren, or with dwarf *Saxifrages* and other slow-growing plants.

Of other *Arenarias* in cultivation, the best are *A. ciliata*, a rare British plant; *A. verna*, *A. triflora*, a neat species; *A. laricifolia*, *A. graminifolia*, and *A. tetraquetra*. These, however, are scarcely worth growing except in botanical collections.

**Arethusa bulbosa**.—A beautiful North American hardy Orchid. It grows naturally in wet meadows or bog land, and blossoms in May and June, each plant bearing a bright rose-purple flower that shows conspicuously in its sombre bed of *Sphagnum* and *Cranberry Grass*, *Sedge*, and the like. The little bulbs grow in a mossy mat formed by the roots and decaying herbage of other plants and moss. In cultivation it requires the same treatment as the *Pogonia*. Care must be taken to get the leaf as well matured as possible. Coming as it does after the flower, the leaf is apt to be neglected. A good outdoor position for growing these Orchids is a shady, moist spot having a northern exposure, using for soil a mixture of well rotted manure and *Sphagnum*. During winter, the bed in which it grows is better to be protected with some rough mulch, for it appears that when taken from its moist home and placed in higher ground, it loses its extremely hardy nature. It should not be treated as a tender plant, or failure is sure to be the result. It is a plant for the select bog garden or for a moist or irrigated flat bed near the rock garden. Roots are often imported.

**Aretea Vitaliana** (*Androsace*).



**Argemone** (*Prickly Poppy*).—Handsome Poppy-like plants, said to be perennial, but usually perishing on moist soils after the first year, and therefore requiring to be frequently raised from seed. Coming from the warmer parts of California and Mexico, even there growing on dry hill-sides and warm valleys, their aptness to perish here may be easily understood. They usually grow about 2 ft. high, and bear large white flowers sometimes 4 in. across with a bunch of yellow stamens in the centre. May be easily raised from seed in a warm frame. They should have a warm sandy loam, and be associated with the choicest annual and biennial plants. The kinds mostly grown are *A. mexicana*, *A. grandiflora*, and *A. hispida*, which are so nearly alike in habit and requirements as to render a separate description for each needless. They might be used with good effect in bold mixtures, and as groups or masses with slenderer and taller plants among them.

**Arisæma** (*Indian Tulip*).—A family of N. American plants belonging to the Arum Order, and though curious for the botanical garden, of little merit for the ordinary garden. In *A. triphyllum* the spathe is curiously marked with purple and white stripes. *A. draconium* is the "Green Dragon," and *A. triphyllum* is known in America by the common name of Jack in the Pulpit. They are hardy and grow easily on the fringes of beds of shrubs.

**Aristolochia Siphon** (*Dutchman's Pipe*).—This well-known large-leaved plant has an excellent effect where large and distinct foliage is desired. Generally it is used as a wall plant, but it is far finer when used to cover bowers or any like structure, or clamber up trees or over stumps. *A. tomentosa* is smaller, but distinct in tone of green, well worthy of a place, and to be employed in like manner. N. America. These plants grow in ordinary garden soil with freedom. The hardy non-climbing herbaceous plants of the genus have no claim to cultivation. The genus is a large one, mainly tropical, but some of which go into northern countries. Easily propagated from cuttings.

**Armeria** (*Thrift, Sea Pink*).—A pretty little family of the Statice Order, most of which are worthy of culture. Best known is the common *A. vulgaris* (common Thrift). This inhabitant of our sea-shores, and also of the tops of the Scotch mountains and the Alps of Europe, is very pretty with its soft lilac or white flowers springing from dense cushions of grass-like leaves; but it is the deep rosy form of it, which is rarely seen wild, that best deserves cultivation in gardens. It is like the common Thrift in all respects but the colour of the flowers, which are of a showy rose. It is useful for the spring garden, for covering bare banks or borders in shrubberies, for making edgings, and for the rock garden. Easily propagated by division, and as old and large plants do not bloom so long or so continuously as younger ones, occasional replanting is desirable. In addition to the white and the old dark red variety there are several others bearing names—Crimson King, Grandiflora, Pygmaea, and Pink Beauty.

**A. cæspitosa**.—This is a pretty rose-coloured species from the south of Europe, where it is found growing at an altitude of from 5000 ft. to 8000 ft. above the sea level. Its flower-heads each measure from  $\frac{3}{4}$  in. to 1 in. in diameter, and are borne on slender stems from 1 in. to 2 in. high, from June to September. The leaves are narrow and flat on the upper surface, with a slight depression down the centre. They are from  $\frac{1}{2}$  in. to  $\frac{3}{4}$  in. long, in dense tufts, with a branching, woody rootstock. A choice rock garden plant, thriving freely in any well drained, rather poor, sandy loam. In wet weather they are liable to damp off between the foliage and

the root in rich soil. They are propagated by seed. There are various other alpine species, but the above are their best representatives.

**Armeria cephalotes** (*Great Thrift*).—One of the finest perennials in cultivation, and should be in every select mixed border, and on every rock garden among the taller and stronger plants. It comes from North Africa and Southern Europe, and though hardy on free and well-drained soils, occasionally perishes during a very severe winter, especially on cold soils; it should therefore have well drained, deep, and good sandy loam. It is known under various names—*Armeria formosa*, *A. latifolia*, *A. mauritanica*, *A. Pseudo-Armeria*, *Statice lusitanica*, and *Statice Pseudo-Armeria*. Easily raised from seed; and as it is not so easily increased by division, it is a good plan to sow a little of it every year. Varies a little when raised from seed, but all the forms are worthy of cultivation. This species and its forms have flowers very much larger than the common Thrift.

**Armeria setacea**.—A good alpine species. Its little globose heads of pink flowers are produced so plentifully as almost to conceal the other portions of the plant. The flower-stems vary from 1 in. to 3 in. high. This and *A. juncea* are found on barren, stony mounds, on elevated table-land, in the south of France. They have been cultivated in the nurseries at York, and have proved to be quite hardy and of easy culture. They grow freely in sandy or stony earth, either in the open border, on rockwork, or in pots, and their neatness and compactness of habit fit them for association with the choicest of alpine flowers on the rock garden.

**Arnebia echioides** (*The Prophet Flower*).—The Borage-worts afford us some of the handsomest of border flowers. This, though not so showy as some, is certainly amongst the most remarkable. It grows 1 ft. to 18 in. high, and the flowers, which are of a bright primrose-yellow, have five black spots on the corolla, which gradually fade to a lighter shade, and finally quite disappear. It is perfectly hardy, and succeeds either on the rockery or in a well drained border, and apparently prefers partial shade. It is a native of the Caucasus, Northern Persia, &c., and, though it has been introduced some considerable time, it is still amongst the rarest of our cultivated hardy flowers. Young plants of it flower long and continuously, which adds to their charms. Increased by seeds, which are not freely produced, and by cuttings. *A. Griffithi* is an annual, tender and though pretty, not so valuable as *A. echioides*.

**Arnica**.—One or two of these are sometimes cultivated, but of little value, considering the great number of ornamental plants of the same composite family that are in cultivation. *A. montana* with orange yellow flowers is occasionally grown in botanical collections.

**Aronicum**.—This is a genus of few species, some of which are in cultivation, but though striking when in flower, not of the first merit for gardens. *A. glaciale* (glacier A.) grows from 6 in. to 9 in. high; has large yellow flowers, one to a stem. *A. scorpioides* (Mountain A.) grows about 1 ft. high, and has large orange flowers, one to a stem. Alps of Europe; seed and division.

**Artemisia** (*Wormwood*).—A very numerous genus occupying a large part of the earth's surface in northern and various arid regions. Though often poor weeds, some have a use in gardens, though seldom for their flowers. *A. anethifolia* is one of the most graceful herbaceous perennials, as far as habit is concerned, that we know of. It attains 5 ft. in height. *A. annua* is an exceedingly

graceful kind of Wormwood, with tall stems reaching to a height of 5 ft. or 6 ft. in a season; the foliage is small and fine, and the flowers inconspicuous, but arranged in not inelegant panicles. The hue of the plant is a peculiarly fresh and pleasing green, and it forms an elegant object in the centre of a flower-bed or group with plants of like character. *A. gracilis* is an exceedingly graceful plant, 3 ft. or 4 ft. high, with leaves cut into very fine hair-like segments, having some resemblance to Fennel or other umbelliferous plants with minutely cut leaves and of a deep grass-green, except in the hearts of the shoots, where the young leaves are unfolding, where there is a slight hoary pubescence. Other kinds, such as *A. alpina* and *A. frigida*, belong to an alpine group at home on the rock garden; there are many taller herbaceous and half-woody plants of a silvery hue, such as *A. stelleriana*, *A. cana*, *A. maritima*, and some with handsome Fern-like foliage like *A. tanacetifolia*. Other species of *Artemisia* are for the most part not ornamental, scarcely so much so as the common Wormwood and Southernwood. There is, however, what is called an Indian form of the common *A. vulgaris*, which is a wonderfully graceful plant in its growth, and very tall, 8 ft. Mostly raised from seed and also from cuttings. The taller and more graceful kinds of Wormwood are very effective and distinct among groups of plants of striking habit or graceful foliage. In districts too cold for hardy plants some of them might be of good service, as they would in gardens where a variety or change are sought.

**Arrow-head** (*Sagittaria sagittifolia*).

**Artichoke, Globe** (*Cynara Scolymus*).

**Arum Lily** (*Calla aethiopica*).

**Arum** (*Cuckoo Pint*).—A large family of plants, mostly from tropical or warmer countries than ours, but some of which are South European, hardy, and of some interest in our gardens, as, for example, the Italian Arum (*A. italica*), the foliage of which is handsome in winter and spring. The old Dragon's Arum (*A. Dracunculus*) is a curious plant, and still more so is *Arum crinitum*. They thrive best in warm borders and about the sunny side of garden walls, the Italian Arum thriving more freely. Some nine or ten kinds are found in South Europe, two coming as far north as our own country. Almost contemporaneously with the Primroses, and not unfrequently associated with them, we find the shining green leaves, peering through the Moss or Ivy-clad bank, of the Wild Arum, familiarly known as "Lords and Ladies" and "Cuckoo Pint." Closely related to it comes *Arum Arisarum* of the South of Europe and *A. azoricum* of the Azores.

**Arum italicum** (*Italian Arum*) is of larger growth than our native Arum; the principal veins are blotched with yellow, giving the leaves a marbled appearance, and as they are produced very early in the season, attaining their full development in the month of March, they form an attractive feature in the flower border. In the autumn, when the leaves have died away, the groups of scarlet berries, supported on foot-stalks 10 in. or 12 in. long, have a very attractive appearance, which they retain for a considerable time. It is a native of Spain, Italy, and Southern Europe. Occasionally we meet in our own woods with a very similar variegated form of *A. maculatum*, but it is smaller in every respect than its Italian relative, which is a decidedly desirable plant for cultivation. The true use for it in gardens is as a naturalised plant or in the shrubbery or grove, where its handsome leaves will come up bravely in spring. Although it is a very hardy plant, and will thrive almost anywhere in moist soil and



a shady position, it will be better to place it in sheltered positions along the sunny fronts of shrubberies, amidst low-spreading evergreens, and in cosy spots about ferneries, to prevent its handsome foliage from being disfigured by wintry winds. One great merit of this is that it may be used to ornament positions in which few other plants will thrive—as, for instance, under trees, groups of shrubs; easily multiplied by division in the end of summer. South of Europe.

**A. Dracunculus** (*Dragons, Snake Plant*) generally attains a height, when growing vigorously, of from 2 ft. to 3 ft.; the leaves are large; the petioles and stem of a fleshy colour, deeply and irregularly mottled with black, reminding one of the skin of a snake, whence originates its popular name of the Snake Plant; the spathe is of a deep chocolate colour, 8 in. across. At certain stages a disagreeable odour is given out by this plant, reminding one of decomposing animal matter; the emission of this odour appears to be quite spasmodic, as at one time it may be sufficiently powerful to cause nausea, and in a few minutes every trace of it will have disappeared. This species is a native of Southern Europe, and forms a handsome border plant, unique in its habit. The Snake Plant loves best a corner to itself at the foot of a south wall in sandy loam. Beyond use in this way it is not important, except as a curious and distinct plant. Many would very properly not care to give place to a plant having so very offensive an odour when in bloom. Division.

**Arum crinitum** (*Dragon's Mouth*).—The appearance of this plant when in flower is very grotesque from the singular shape of its broad, speckled spathe. The leaves are divided into five or seven deep segments, the central division being much broader than the others, and the leaf-stalks, overlapping each other, form a sort of spurious stem 1 ft. or 1½ in. high, marbled and spotted with purplish black. The treatment for this plant is similar to that given for *A. Dracunculus*; but as it is rather more tender, it will require a little more care and shelter in winter. Warm borders, fringes of shrubberies, or beds of the smaller subtropical plants will suit it best. The appearance of the flower is rather repulsive. In this species the carrion-like smell named occurring in the last becomes strongly pronounced, and doubtless gave rise to Linnaeus' old name of *A. muscivorum*, the smell being sufficiently strong to attract the larger flies in quest of a suitable place wherein to deposit their eggs. It is a strange plant seen in a group of fine-leaved subjects, or holding its awful "blossoms" from out a mass of low shrubs. Increased by division of tubers, S. Europe.

**A. Dracontium** (*Green Dragon Arum*) grows abundantly in the moist and swampy districts of Virginia and New England. The graceful curving of the veins, which is noticeable in all the species belonging to this section, add a special charm to the appearance of the plant; the spathe is greenish coloured. This species is rarely met with in cultivation. *A. triphyllum*, *A. gramineum*, *A. spirale*, *A. corsicum*, *A. tenuifolium*, and other species are in cultivation, but not so valuable as the preceding kinds.

**Arundinaria** (*Bambusa*).

**Arundo** (*Great Reed*).—An important genus of Grasses, some of them of great value.

**A. conspicua** (*New Zealand Reed*).—A companion for the Pampas Grass, especially in the western and warmer coun-tries and on good soils. In some very fine deep oaks it attains a height of nearly 12 ft., but his is rare. It is well worth growing, even in districts where it does not attain a great development. It comes into flower before the Pampas Grass, and may be considered as

a sort of forerunner of that magnificent plant. Suitable for grouping with the finer leaved hardy plants, but making a noble specimen for the lawn, where it grows well. The New Zealand *Arundo* generally commences blooming early in July, and lasts until the end of October. The Pampas rarely comes out in full flower before November; the *Arundo*, therefore, while as beautiful when well grown, has a peculiar value in being so early. Grown in tubs in a cool greenhouse or winter garden, this noble Reed forms a striking object, and its silky plumes last in perfection much longer than when produced out of doors. It likes a strong fibrous loamy soil, and a plentiful supply of water nearly all the year round. Seeds or division. It requires careful planting and generally several years' growth before flowering after transplanting.

**A. Donax** (*Great Reed*).—This great Reed of the south of Europe is a very noble plant on good soils. In the south of England it forms canes 10 ft. high, and has a very distinct and striking aspect. It will grow higher than that if put in a rich deep soil in a favoured locality; and those who so plant clumps of it on the turf in their pleasure-grounds will not be disappointed at the result. It seems much to prefer deep sandy soils to heavy ones. Like all large-leaved plants, it loves shelter. It has suffered much in recent severe winters, and perished in some of our southern gardens where it was finest. But, fine as it is for effect and distinctness, its variegated variety is of more value for the flower garden proper.

**A. Donax versicolor**.—This will be found pretty hardy in the southern counties, and, considerably north of London, may be saved by a little mound of Cocoa-fibre, sifted coal-ashes, or any like material that may be at hand. In consequence of its effective variegation, it never assumes a large development, like the green or normal form of the species, but keeps dwarf. It is, of course, best suited to, warm, free, and good soils, and abhors clay. For a centre to a circular bed nothing can surpass it in the summer and autumn flower garden, while numerous other charming uses may be made of it. Not the least happy of these would be to plant a group of it on the green turf, in a warm spot, near a group of choice shrubs. It is better to leave the plant in the ground, in a permanent position, than to take it up annually. Protect the roots in the winter, whether it be planted in the middle of a flower bed or by itself in a little circle on the Grass. Increased by placing a shoot or a stem in a tank of water, when little plants with roots will soon start from every joint; they should be cut off, potted, and placed in frames, where they will soon become strong enough for planting out.

**Arundo Phragmites** (*Common Reed*).

—A native marsh or water plant, 5 ft. or 6 ft. high, bearing when in flower a large, handsome, spreading, purplish panicle. The stems are smooth, simple, very erect, and grow closely together. The plant is only attractive when in flower, as its flat, ribbon-like leaves do not of themselves present any very striking appearance. Useful for the margins of artificial waters, &c., to which it may be brought from its wild haunts. It should, however, if possible, be kept in one spot and not allowed to spread too much. Where it grows wild there is usually no scarcity of it.

**Arundo mauritanica**.—This is a fine Grass—one might describe it as a stately one were it not for its great relation *A. Donax*. *A. mauritanica* is a native of the southern shores of the Mediterranean, hardy in the neighbourhood of Paris, and reaching a height of about 4 ft. Might be grown with a collection of aquatic or Grasses.

**Aruncus** (*Spiraea Aruncus*).

**Asarum** (*Asarabacca*).—A small genus of very hardy plants resembling Cyclamens in their foliage, but having little value except as curiosities, and occasionally as wood or shrubby plants. *Asarum canadense* is the Canada Snake-root. Bears in spring curious brownish-purple flowers. Root strongly aromatic, like Ginger. *Asarum virginicum* is the Heart Snake-root. Leaves thick and leathery, with the upper surface mottled with white. Sometimes used as a spice; hence the common name Wild Ginger. They are more or less used in medicine. *Asarum caudatum* is from Oregon. Much like the preceding, but the divisions of the flower have long tail-like appendages. *Asarum europæum* is the *Asarabacca*. Flowers greenish, about ½ in. long, appearing close to the ground.

**Asclepias** (*Milk Weed, Silk Weed*).—To this genus belongs a large group of plants confined to the New World, and, with but few exceptions, to the northern part of it. Almost all of them are hardy in this country. They are for the most part ornamental, though not showy, and will be found useful both in the wild garden and shrubby borders, where they can ramble at pleasure. The following are a few of the most distinct:—

**A. Cornuti** (*syriaca*) (*the Common Milk-weed*).—This is a vigorous kind, 4 ft. in height, bearing nodding umbels of deep purple flowers, which are fragrant. Bees seem to be fond of this plant, and from the fact of its being quite hardy, easily increased, and lasting a considerable time in bloom, it would prove valuable as a bee flower. It is somewhat coarse for the border, but may be worth a place in the wild garden.

**A. incarnata** (*Swamp Milk-weed*).—This attains 3 ft. in height, and has long leaves and leafy stems, bearing umbels of rosy purple flowers in pairs. The variety called *pulchra* has broader foliage than that of the type. A good water-side plant.

**A. purpurascens** (*amara*, Mich.).—This is a very distinct species, the stems of which are slender, and from 2 ft. to 3 ft. in height, and bearing umbels of bright purple blossoms.

**A. quadrifolia** (*Four-leaved Milk-weed*).—A deliciously fragrant flower, and earliest to blossom of the hardy species of the genus, coming into bloom as it does about June 1. About three weeks ago I found a lot of it on the sunny surface of a steep rocky hill at Waltham, where it was growing in a bed of disintegrated rock. It grows 1 ft. to 2 ft. high, has one or two whorls of four leaves about the middle of the stem, but the other leaves—lower and upper—are in pairs, and terminal heads of lilac-tinted white flowers that are sweet and pretty. —W. F.

**A. rubra** (*acuminata*).—This very distinct kind has long, lanceolate, bright green foliage, and stems from 3 ft. to 4 ft. in height; umbels large, deep purplish-red, from two to five on a naked, terminal peduncle.

**A. Sullivanii** is similar to *A. Cornuti*, but the flowers are larger and deeper in colour, and fragrant.

**A. tuberosa** (*the Butterfly Weed*) is one of the most beautiful of our autumnal flowers; it is a hardy perennial, having a thick root, and erect leafy stems about 2 ft. in height, crowned with terminal corymbs of bright orange-red flowers. It prefers a warm, sandy soil, and when thoroughly established is a very ornamental plant. It bears seeds occasionally during hot autumns, from which good flowering plants may be obtained in three years. A fine border plant.

**A. variegata** (*Variegated Asclepias*).—Stems spotted and downy, from 2 ft. to 3 ft. in height; flowers white, with a reddish centre, in large umbels. This is one of the showiest of *Asclepias*.



**A. verticillata** (*Whorled Milk-weed*).

Quite unlike the majority of Milk-weeds in its slender habit, narrow leaves, and delicate, small white flowers, produced in abundance in summer. Grows in poor soil to nearly 2 ft.

**Asclepiodora decumbens** (*Green Milk-weed*).

A low stout herb with umbels of greenish and purplish flowers, which resemble in appearance those of the Milk-weeds, but differ in structure. Texas. Of no garden value.

**Ascyrum** (*St. Peter's Wort*).

A small genus of sub-shrubby plants of little value in the garden. The best known, *A. Crux Andree* (St. Andrew's Cross), is a small yellow-flowered kind, often classed with the St. John's Wort (*Hypericum*).

**Asparagus.**—Some of the species of this family are interesting from their elegant foliage or bold habit, and worth a place for these. *A. Broussoneti*, a vigorous and tall species, is quite hardy, so are *A. tenuifolius* and others. The common *Asparagus* is as good as any of them, and a tuft or group of it is effective and graceful in a border or bed of fine-leaved hardy plants.

**Asperula odorata** (*Woodruff*).

This little wood plant, abundant in some parts of Britain, is worthy of a place in the garden or shrubbery, especially in localities where it does not occur wild. Many would like to cut and preserve its stems and leaves for the sake of the fragrant hay-like odour which they give off when dried; and in May the white small flowers, profusely dotted over the tufts of whorled leaves, look very pretty. It is one of the many plants that may be allowed to cover the earth in a shrubbery where the barbarous practice of annually digging and rooting up the borders is not resorted to. It is sometimes used as an edging to the beds in cottage gardens. It is, however, as a wood or shrubbery plant—as a companion to the Wood Hyacinth and the Wood Anemone—that it will be at home. It is largely used in Germany for flavouring summer drinks. It mixes charmingly with Ivy where that is allowed to clothe the ground. It belongs to a considerable family of plants, few, however, of which have come into cultivation. *A. azurea setosa* is a pretty early spring flowering hardy blue annual, flowering in April and May. Sow the previous autumn. *A. cynanchica* is a rosy red perennial, forming a good bank or rough rock plant.

**Asphodel** (*Asphodelus*).—The name is also applied to *Narcissus poeticus* in some parts of the country.

**Asphodelus** (*Asphodel*).—Liliaceous plants of no great value for gardens. There are some half-a-dozen kinds in cultivation, the best known of which is *A. ramosus* (tall Asphodel), a bold South European species, familiar in most of the old herbaceous plant borders, but better fitted for the shrubbery or wild garden. The stems grow from 3 ft. to 5 ft. high, bearing numerous white flowers. Varieties of this species are *albus*, *cerasiferus*, and *microcarpus*, all similar to the type in general aspect. Other kinds are *A. fistulosus* and *tenuifolius*, both with white flowers, and each growing from 1½ ft. to 3 ft. high, and grow well in any border or position. The last named kind has delicate feathery foliage and is a contrast to bold foliage plants. *A. acaulis* (the stemless Asphodel) is a singularly interesting plant, as it is only an inch or so high, and bears its flowers in a dense cluster, surrounded by a tuft of narrow Grass-like foliage.

**Asphodeline.**—This genus is nearly allied to the preceding, but may be readily

distinguished by the stems, the stems of *Asphodelus* being leafless, while in *Asphodeline* the leaves are always produced on the erect stems. About six species are in cultivation, the best known being *A. lutea* (tall yellow Asphodel), growing about 3 ft. high, with the yellow flowers produced in dense clustered spikes. *A. taurica* has white flowers, produced in a similar manner on stems 1 ft. to 2 ft. high. *A. liburnica* (*A. cretica*) and *A. tenuior* have both yellow flowers borne in loose racemes. *A. damascena* has white blossoms in dense racemes, and *A. brevicaulis* has yellow flowers in looser racemes. These are all of vigorous growth and easy culture, thriving in any common garden soil, and may be used with good effect in bold masses among other tall-growing plants.

**Aspidium** (*Shield or Wood Fern*).—As now arranged, this genus embraces the *Polystichum* and some of the species of *Lastrea*. There are numerous hardy kinds, including some of the noblest of hardy Ferns, of which the common Male Fern (*A. Filix-mas*) and Prickly Shield Fern may be taken as the types. These are a most useful class of plants, thriving everywhere, even in small town gardens and similarly confined places. All they require is a plentiful supply of water during hot, dry weather. Either alone or in groups these Ferns have a fine effect, particularly as an undergrowth to trees in the pleasure ground or in the shady parts of the garden. These are both evergreen, therefore are invaluable for the garden. Their varieties are endless, no fewer than a hundred named sorts being enumerated in trade lists of *A. aculeatum* and fifty of *A. Filix-mas*. The larger growing varieties of these Ferns are noble subjects when fully developed, and they have a fine effect planted under trees or in similar situations, but the smaller and more delicate kinds require more careful treatment. *A. aculeatum* succeeds best in rich loam mixed with sand and leaf mould, and the situation should be thoroughly drained, and the same treatment suits the Male Fern. Both are easily grown in pots, and in such a state are very useful.

**A. dilatatum** (*Broad Buckler Fern*) is a pretty Fern, and of which there are some handsome varieties, especially the crested fronded sorts. It requires a fibrous peat loam and sand, and moist situation. *A. cristatum* (Crested Shield Fern), a British species, is a handsome and easily grown kind.

**A. Lonchitis** (*The Holly Fern*) is one of the finest evergreen hardy Ferns. It grows naturally in clefts of rocks, and in order to cultivate it successfully it should be planted between pieces of grit rock in a mixture of loamy, turfy peat and sand. *A. munium*, a North American species, is a beautiful kind, requiring but little care to grow it well if planted in a peaty soil in a shady situation. Other valuable kinds are *A. rigidum*, *A. Oreopteris*, *A. Thelypteris*, *A. spinulosum*, *A. cristatum*, *A. acrostichoides*, *A. montanum*, which all succeed in a mixture of loam, turfy peat, and sand, in rather a moist and shady situation.

**Asplenium** (*Spleenwort*).—Amongst hardy evergreen Ferns few are more useful or diversified than these; the fine dark green colour of most of the varieties and their free-growing character render them worthy of culture. The soil best suited for them in a general way is a well drained mixture of peat, sand, and loam, just the sort of material in which the finer kinds of flowering shrubs, such as *Kalmias*, *Andromedas*, *Rhododendrons*, *Azaleas*, &c., would thrive to perfection, and with which *Aspleniums* might be advantageously associated. *A. Adiantum-nigrum* (the Black Spleenwort) would be especially interesting amongst hardy *Azaleas*, because these lose their foliage in winter,

when the value of the Spleenwort would become apparent, carpeting, as it would, the surface of the soil with verdure. The shade, too, which the *Azaleas* would afford in the summer, if not planted too thickly, would just suit this Spleenwort, as it is generally found in a wild state fringing copses or on hedge banks, where it gets just a little protection from the scorching rays of a summer's sun. There are several distinct forms of this *Asplenium*, the most remarkable being perhaps *grandiceps* and *microdon*, both valuable and useful kinds. There is also a variegated form. *Asplenium fontanum* is a lovely alpine Fern. In cultivating it the conditions under which it was found growing in its native haunts should be as far as possible imitated. It loves to hide beneath overhanging rocks. It also does well in pots, planted in fibrous loam, with a good mixture of calcareous chippings about the size of Walnuts. *Asplenium marinum* is one of the most beautiful of evergreen Ferns, but it is far from being generally hardy; still it will succeed under conditions similar to those recommended in the case of the British Maiden-hair (*A. Capillus-veneris*). *A. marinum imbricatum* is a particularly fine variety, having beautifully fringed and crisped fronds.

**A. germanicum** (*alternifolium*) is a dwarf-growing kind, admirably adapted for a shady spot in the alpine garden. It is perfectly hardy, and, although somewhat difficult to grow, is worthy of any care that may be bestowed upon it. A fine variety of it is *A. g. acutidentatum*, producing elegant little fronds about 2 in. or 3 in. in length. *A. lanceolatum* produces abundance of dark shining green lanceolate fronds, which frequently grow 15 in. high. The variety *microdon* is very distinct and ornamental. *A. Ruta-muraria*, the Wall Rue, is a pretty little plant for walls, and for placing in the chinks and fissures of rockwork. Its fronds are deep green, and remarkable for the profusion of brown sori. The varieties *cristatum* and *crispum* are pretty varieties of this little Fern. *A. Trichomanes*, the common Maiden-hair Spleenwort, is a handsome hardy species, the fronds being of a dark green colour. The variety *crispum* is finely tasselled, and *incisum* is also a remarkably handsome variety, the fronds of which are much serrated and divided, and *multifidum* is very distinct, each branchlet ending in a little crest. Like all the Spleenworts, it requires good, free, well-drained soil in which to grow, and, given this essential and ordinary care, success is pretty certain. A few pieces of stone placed on the soil around the roots prevents to a certain extent the evil effects that excessive evaporation has on all Ferns. The stones might be partly buried in the soil, and the portions of them left above it would be covered by the Ferns themselves; therefore no unsightly appearance would be presented. It is to be desired that our hardy Ferns be used amongst hardy flowers as carpets among the taller plants in shady parts of the rock garden. In the wild garden there are various opportunities of associating them with hardy spring or other flowers. So placed they would seem more graceful than ever.

**A. Nidus-avis.** This is a remarkable Fern, which has been placed out-of-doors in the garden in summer, from early in June to October, but it is not vigorous or hardy enough to be generally recommended for this purpose. It is a favourite subject in places where large collections of tropical Ferns are grown, and in such places plants may be tried in the open air in a warm, shady, and perfectly sheltered position. E. Indies. At Battersea Park the young plants as well as the large ones are grown out-of-doors during the summer in shady places and do very well. *A. australasicum*, a similar kind, is used in the same way.



No. 514. SATURDAY, SEPT. 24, 1881. Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare.*

## FLOWERS FROM WASHINGTON.

RAPIDLY as ocean traffic is being improved, we have not as yet got flowers by post from America, but dried flowers as sent by Mr. Saul from Washington are a good substitute, particularly the several varieties of beautiful Crape Myrtle, apparently little known and certainly not grown here. I send, says Mr. Saul, four varieties of

**CRAPÉ MYRTLE** (*Lagerstrœmia indica*)—No. 1, pure white, a charming variety. No. 2, crimson (Regina), a gorgeous plant. I wish I could send some of the large bunches of this now on my plants; they measure 9 in. across and 12 in. long, beautiful beyond conception, and every branch and shoot is terminated with such heads. I know of no shrub to approach it in beauty. No. 3, pink Crape Myrtle, another good variety; and No. 4, crimson-purple, also distinct and good. Crape Myrtles for this latitude and south may be considered our finest summer shrubs; indeed, farther south they attain the size of moderately large trees, and I have seen them used as such for shade. There are other varieties different from what I have sent. With me these plants are never killed, but in severe winters like the past the young wood is injured, but it soon shoots out in spring and is quickly in bloom, continuing through the greater part of summer. Such beautiful shrubs are surely worth an effort to grow in England, and if English gardeners take them in hand with their usual skill they will soon bring out their beauty. Bear in mind they will stand any degree of cold ever experienced in England provided the wood is well ripened. In many of our Northern States where they cannot endure the intense cold they are grown as standards in tubs and set out of doors in summer in the way in which Oleanders, Oranges, &c., are frequently grown on the Continent, and kept from severe cold in cellars during winter.

**ANASACANTHUS WRIGHTII**.—This pretty plant from South-western Texas is with me nearly hardy, and I should think quite so in the south and west of England. It forms a dwarf shrub, which at this time is covered with myriads of pretty orange-yellow flowers. It has been in flower for nearly two months, and will continue up to frost.

**SALVIA GREGGI**.—This comes from the same country as the last. It is nearly or quite hardy, and though not as showy as others of the genus, is pretty, covered, as it is, with multitudes of its purple flowers all through the summer and autumn months—a dwarf compact bush.

**HIBISCUS COCCINEUS**.—This has been heretofore noticed in *THE GARDEN*. It is one of the finest, if not the very finest, of hardy herbaceous plants. I have masses of it in the same position over 20 years that have never received any protection. In England it will be hardy so far as cold is concerned, but, being a native of our Southern States, it must have a dry, warm position. It bears magnificent large showy dark crimson flowers during the summer months. [Will not do any good in the open air, we fear.—*Ed.*]

**ANTIGONON LEPTORUS**.—This charming climber I keep in an ordinary greenhouse in winter, and plant it out in the open border in spring. It quickly runs over any adjacent plants and shrubs, covering them with bloom, as described by Dr. Seeman. It flowers in summer.

[These Crape Myrtles should surely merit the attention of our nurserymen; although a neglected plant by growers generally, there is nothing pays so well for its place as a strong plant of the *Lagerstrœmia*. At Kew this year, and in one or two other gardens mostly of the larger sort, we saw specimens flowering freely, and their loveli-

ness is something quite apart from that of any other plants. Now that we know there are other and distinct forms it should encourage many to secure and grow them. Among the many "old stagers" among the plants seen at our flower shows, and among even the best plants brought to them, one seldom sees anything so handsome as a well-flowered Crape Myrtle. Mr. Burbidge tells us that good varieties are not uncommon in the East.]

## SEPTEMBER HARDY FLOWERS.

THE remark that hardy plants are not attractive in autumn is not unfrequently made, but in a representative collection it would not be difficult to select a large number that are at their best from the middle of August till far into October, and which are sufficiently attractive to be admitted into any garden. In such a collection as that of Mr. Stevens, at Grasmere, Byfleet, which contains nearly 10,000 species and varieties of hardy perennials, trees, and shrubs, exclusive of popular florists' flowers, a selection might readily be made to fit any season. Beginning with the perennial Larkspurs, which in early summer are so exceptionally fine, we found the other day several with a second crop of bloom on them obtained by cutting the plants over immediately after the first flowers had decayed. Besides these there were the pretty *Delphinium chinense* and the pure white variety, both extremely pretty and well suited for cutting. The scarlet Larkspur also (*D. cardinale*) was still in flower. In various parts of the garden were grand clumps of the double Tiger Lily, which here attains perfection, some of the stems being 6 ft. in height and profusely laden with bloom. *L. auratum* was also gay, and the heads of flowers peeping out of *Rhododendron* beds indicate that this is not such a fastidious Lily after all to cultivate as it has been said to be, provided it is placed in a suitable soil at the outset, and allowed to remain undisturbed. Some of these *auratum* bulbs have been amongst the shrubs for years and have never failed to produce good bloom, and the same may be said of *L. croceum*, *pyrenaicum*, *Martagon*, and others.

Next to Lilies, Phloxes and Dahlias are most showy, but as these are common they need only be mentioned except that the best sorts are grown of both, and preference appears to be given to the single and bouquet-flowered Dahlias. There is no lack of yellow flowers, and it is difficult to make a selection of the finest; *Rudbeckia Newmanni* is indispensable, here it may be seen in the shape of plants 4 ft. or 5 ft. across. *Coreopsis lanceolata* and *auriculata* are both excellent, and in a less degree *C. senifolia*. *Cenotheras* of the shrubby kinds, such as *Fraseri*, *fruticosa*, *glauca*, and *riparia*, make a fine display, and these four are quite representative of that section of the genus. The single form of *Helianthus multiflorus* is by no means a plant to be despised; some prefer it to the double kind which is now becoming common everywhere, and it is less coarse in growth. *Silphiums*, *Rudbeckias*, and *Heleniums* are represented here in numbers. Belonging to the last genus there is a kind that should be grown by everyone. It is *H. grandiceps*, probably a form of *autumnale*, but with much finer flowers and of a more compact and dwarf habit of growth. *Silphium laciniatum*, on account of its huge cut leaves and proportionately large lemon-yellow blossoms, makes a fine plant when grown in a place by itself in good soil, and is quite distinct from any of the rest.

Blue or purple flowers are scarcer than the yellow, though there is no lack even of those. The finest among them is *Veronica subsessilis*, to which frequent allusion has been made. It should be grown by everyone, and no one would be disappointed with it. Most of the Asters are of

a purplish hue, but as they are so numerous there is need of some discrimination in their selection. At the time of our visit, about a fortnight ago, the best in flower were *Amellus*, *bess-arabicus*, *Novi-Belgii*, *Novæ Angliæ*, *patulus*, *linifolius*, *hyssopifolius*, *punctatus*, *turbineus*, *lævis*, and *versicolor*. These include species that are usually placed under *Galatella* and *Diplopappus*, both now merged with *Aster*. These are all worth growing. The best of the *Solidagos* was *virgata*, a dwarf and compact kind.

The *Echinops* are handsome September flowers, especially *Ritro* and *ruthenicus*, both with rich purple globes of flowers. *Campanulas* were on the wane, though large tufts of *carpatia*, *turbinata*, *Grossecki* fl.-pl., a handsome kind, about 1 ft. high, were still fine, as was also the delicate little *soldanellaeflora*, apparently a double form of *rotundiflora*. *Tradescantias* were particularly showy, and one, which appeared to be an unusually fine form of *virginica*, was better than all the rest, having flowers more than 1 in. across, and of such a brilliant blue purple. There was a similar plant at Kew some years ago named *grandiflora*, from the Chicago Botanic Garden. Among others, the double form of *Saponaria officinalis* is very handsome, the plant being extremely floriferous, and the flowers varying in colour from almost white to reddish crimson according to age, is attractive in any position. It is best suited for the border, as its growth is spreading. The Shell flowers (*Chelone*) are fine autumn flowers; there are three, and all worth growing. They are *C. obliqua*, the white variety, and *C. Lyoni*. The double *Matricaria inodora* is a valuable plant, as it flowers for such a long time. Other noteworthy flowers in the garden included *Dicentra eximia*, *Tritoma Uvaria*, very fine; *Sedum spectabile*, *Polygonum Brunonis*, a fine dwarf Himalayan species; and *P. cuspidatum*, the tall growing species, in tassels of white flowers in the leaf axils; *Monarda didyma*, *Kalmiana*, *fistulosa*, all desirable; the beautiful white-flowering *Funkia grandiflora*, deliciously scented; various hardy *Fuchsias*, notably *Riccartoni*, *virgata*, *coccinea*, and *globosa*; *Verbascum phœniceum*, in variety; *Armeria cephalotes*, the finest of all; and *Dianthus hybridus*. These, together with a host of florists' flowers, *Carnations*, *Pentstemons*, *Pyrethrums*, *Summer Chrysanthemums*, and *Pansies*, of which latter Mr. Stevens has about 180 varieties, render the borders very gay, while in the rock garden are several beautiful things, such as *Silene Schafta*, *Dryas integrifolia*, and *Houstonia cœrulea*, all contributing to render it interesting at a season when the majority of alpine plants are out of flower.

## SINGLE DAHLIAS.

I CAN thoroughly endorse your correspondent "Cambrian's" (p. 299) commendations of these beautiful flowers, which are at once a source of admiration and surprise to all to whom I have shown them. "Cambrian" speaks of them as small and precious, and seems to have somewhat coddled his plants. I would direct his attention and that of other readers of *THE GARDEN* who take an interest in testing border flowers to the fact that a stock can readily be raised from seed, and that plants so raised will flower abundantly the first year. As suggested in *THE GARDEN* in March last, I obtained a packet of seeds, which were sown in a pan in a moderate stove. They germinated very rapidly and were soon fit to pot off. About the latter end of May, or early in June, they were planted out in the open ground, and are nearly all now (Sept. 20) large plants covered with buds and flowers; the largest some 11 in. high and 2 ft. through. The flowers are much larger than those figured in



THE GARDEN last spring, many exceeding 4 in. in diameter, and comprise various shades of deep red, scarlet, and clear yellow, and I hope to have other colours from the plants which have not yet bloomed. For cuttings for drawing-room and dinner-table decorations they are exceedingly useful, as they are most effective and last long cut. I would strongly recommend all lovers of such plants, who possess even a hotbed, to sow a packet of single Dahlia seed next spring, and I am convinced they will not be disappointed with the result.

GREENWOOD PIM.

Moulstown, Co. Dublin.

### NELUMBium LUTEUM IN NEW ENGLAND.

THIS queen of our western waters was shown in great beauty at a recent meeting of the Massachusetts Horticultural Society. It was grown in a shallow mill-pond on Cape Cod, where the water freezes 1 ft. thick. The seeds were planted three years ago; eighteen seeds were thrown, broad-cast, into the pond, and fifteen of them vegetated, much to the surprise of the planter. They threw up this year their great circular leaves 15 in. to 20 in. in diameter, and so far eighteen flowers have appeared, standing about 2 ft. above the water—a splendid bloom. The flowers are not unlike those of a huge semi-double Peony, measuring 10 in. to 12 in. in diameter, with twenty-two petals of a deep lemon yellow, the golden stigma appearing above the stamens, which are thickly set all around it. It exhales a delicious perfume, quite as pleasant as that of the *Nymphaea odorata*. A bud of it kindly given to me by the exhibitor on Saturday last is now before me (Monday), and has continued to grow, and by to-morrow, if a sunny day, will be fully expanded. Nothing in the way of a flower has given me more delight than this Water Lily, and I am at a loss to understand why it was not years ago cultivated, or its beauty made known by our cultivators. It is surprising that a native plant of such rare beauty, so easily cultivated, and so perfectly hardy should so rarely have been seen here under artificial culture, or that we should not hear more about it in the many extensive collections of beautiful plants in England. Its blossoms are just the colour of a *Maréchal Niel* Rose, and twice the size, just like great golden balls when half open. *Nymphaea flava*, of which so much has recently been said, is as inferior as a *Safrano* Rose is to a *M. Niel*, besides being shy to flower and of doubtful hardiness.

C. M. HOVEY.

Boston, Mass.

### AMERICAN FRUIT AND OTHER CROPS.

NOTWITHSTANDING we had the most favourable winter ever known for winter crops and Grass, the early report was that all the Wheat was winter killed. After this it was all destroyed by rain; the season was too cold for Corn; and, subsequently, all dried up by heat and drought, to say nothing about chinch bugs, weevils, grasshoppers, cyclones, mildew, &c., which destroyed all that the elements left. Still, to-day, the grain "elevators" of Baltimore are so full they cannot take any more, and 20,000 cars will be required to move what grain is already stored between Chicago and Buffalo. So with the fruit crop, Peaches are a partial failure in Delaware and New Jersey, but enough in New England to supply the deficiency. Pears and Grapes are so abundant as to be almost worthless. Fine Concord Grapes are selling in Boston market at \$30 per ton, and the best Pears about 1s. to \$1 per bushel. Apples are \$1 to \$2 per bushel. Water Melons \$15 to \$20 per 100. For a wonder, Tomatoes are poor, and demand a higher price than Pears, Grapes, or Apples, about

5s. a bushel. So you see we shall not starve this year, and have a small quantity for other people.

Boston, Mass.

C. M. HOVEY.

### NOTES OF THE WEEK.

**FUCHSIA REFLEXA.**—A graceful small-flowered species from Glasnevin, with long slender shoots. There is certainly not much colour in it, but for form and freshness such Fuchsias are very good in the autumn.

**CORNUS FLORIDA.**—Finely coloured spray of this comes from Mrs. Robb, who praises it for the colour of the foliage in autumn, which is a fine crimson.

**SIBERIAN CRAB FRUIT.**—The beauty of the well-laden trees is now very striking in our orchard counties. A bunch of Siberian Crab from Linton is most brilliant; so many handsome fruits and bright leaves are now seen that the autumn garden is on the whole the richest of the year.

**LIATRIS.**—The plants belonging to this genus have been much talked of, and sometimes praised in catalogues and books, but they are really very poor as regards effect. "Interesting" is all we can claim for them. They are late, slow, and without any decided grace of form, of beauty, or colour.—V.

**MONEYWORT (LYSIMACHIA NUMMULARIA).**—This native plant is made a very pretty use of in the Regent's Park in vases and the like. It is so graceful and so easily managed that it is very useful. By the way these gardens have been very well managed and very interesting of late.

**TROPEOLUM BEDFORD RIVAL.**—This is one of the few kinds of *Nasturtium* used in the gardens at Heckfield to produce striking effects in basket beds and vases on the terrace garden. It is one of the dwarf-growing section, compact, and very floriferous, and the flowers, a brilliant vermilion scarlet, stand well out from the foliage. It remains in flower an unusually long time, and is not subject, like many of the others, to be injured by wind and rain. Mr. Wildsmith uses *Lobbianum* Perfection to fall over the sides of the basket beds.

**AUTUMN CYCLAMENS.**—In the snug little nooks in the rootery at Heatherbank that have often been alluded to in THE GARDEN, the pretty autumn-flowering *Cyclamen hederifolium* is now in great beauty. A patch of the pure white-flowered variety in particular is remarkable for the density of the cluster and the large size and purity of the blossoms. These little clusters are real gems in any position in the autumn, but more particularly in snug recesses such as here, where the dark surroundings only tend more fully to show the delicacy and beauty of the flowers.

**LILIES AT HEATHERBANK, WEYBRIDGE.**—Never previous to last week had we seen such a grand display of Lilies as we saw in Mr. G. F. Wilson's Lily house. We had seen individual plants quite as fine perhaps, but never in such quantity or in such great variety. The principal bulk of the collection consisted of *L. speciosum* and its varieties, among which some of American origin, from Mr. C. M. Hovey, of Boston, were particularly noteworthy. The names of these are *Melpomene*, *Polyhymnia*, *Thalia*, and *Terpsichore*, all of which are distinct from and superior to the ordinary forms of *speciosum*. *Melpomene*, in particular, is very fine—finer even than the variety *rubrum* both in size of flower, depth of colour and markings, and altogether a stronger grower. These plants, together with a collection of other forms of *speciosum*, ranged from 3 ft. to 5 ft. high, superbly flowered, and grown only in such a way as those can who thoroughly know the requirements of Lilies. The Tiger Lilies in this house were likewise admirably grown, as may be supposed when we state that some of the plants of the splendens variety were over 7 ft. in height. The double flowered variety of *tigrinum*, too, was wonderfully fine both indoors and out. With regard to other Lilies, the same encouraging results may be noted. *L. Krameri* has borne four blossoms on some of

the strongest stems, and is now ripening the seed pods, so this fact goes far to realise Mr. Wilson's prediction that eventually he will succeed in managing *Kramer's Lily* so as to be as floriferous as *auratum*. Of this Lily, by the way, there are, too, some fine examples both in the home garden and also at the Wisley garden, some of the stems being 8 ft. or 9 ft. high, and bearing a dozen or more enormous flowers, while on fasciated stems buds could be counted by the score. There was, likewise, a grand display of *auratum* and *Tiger Lilies*. Of the former there are broad breadths in flower, comprising thousands of bulbs, and of the latter large clumps man-high that have a bold appearance on the hill side. In the shade of the wood were the remains of *L. superbum* from 7 ft. to 10 ft. high, which showed plainly what they had been this season. In all probability Mr. Wilson will be able to tell some interesting experiences among his Lilies this year, as he has had some exceptional successes.

**THE SINGLE WHITE DAHLIA.**—This was said to come from the Oxford Botanic Gardens into the London nurseries, where they are now so busy increasing it; Mr. Baxter, of Oxford, however, states that it did not originate there, and writes: "It was given to me by a gentleman residing in Cheshire two years ago, and I do not know where it was raised. It is now flowering abundantly here, and is much admired by visitors to the garden. So it was last autumn, when I had many more applications for it than could be supplied." This is also called *White Queen*, but the original name must stand.

**HYDRANGEAS AT COWDRAY PARK.**—The finest display of *H. paniculata grandiflora* that we have seen for some time may now be met with in the Earl of Egmont's garden at Cowdray, Sussex. Here a spacious oblong bed is entirely filled with this shrub, and the plants, about 4 ft. high, are literally covered with huge white panicles of blossoms, every shoot being terminated by a pyramidal cluster 1 ft. or more in length. This is certainly one of the finest of all autumn shrubs, and in localities where it thrives so well as in this sheltered place on the South Downs, it is an indispensable adornment to a garden.

**SCARBOROUGH LILY (Vallota purpurea).**—This beautiful Cape bulbous plant, so well known to most gardeners, could scarcely be seen in greater perfection than in the Duke of Wellington's garden at Strathfieldsaye, where it is grown in large quantities for the embellishment of the conservatory at this season. Mr. Bell appears either to have a superior variety of it, or his mode of culture induces greater perfection in the flowers, which are both larger and of a higher colour than ordinarily seen. The plants are grown in large pots that are filled with bulbs, and from each springs a stout flower-stalk bearing a cluster of blossoms. The plants are divided and repotted occasionally.

**VERBENAS FROM SEED.**—Though the *Verbena* has of late years somewhat declined in popularity, it is probable that it will soon regain it, as it succeeds perfectly treated similarly to ordinary half hardy annuals. Rarely have we witnessed such a fine effect in this way as in the gardens at Cowdray, Sussex, where there is a long border entirely filled with mixed *Verbenas* raised from seed this year. The wonderful diversity and brilliancy of colour, and the profusion with which the flowers are borne, combine to render the *Verbena* grown in this way one of the most valuable plants we possess.

**ABELIA RUPESTRIS.**—This extremely pretty shrub flowers for several weeks about this season. It is dwarf in growth, and forms a dense, twiggy bush. The flowers, nearly 1 in. long, are trumpet shaped, of a beautiful blush tint, and very delicate in texture. It is quite hardy in sheltered situations. On the rootery at Heatherbank, Weybridge, Mr. Wilson has a fine plant of it now in flower that has stood without protection for several years, though no doubt the light material in which it is planted and the sheltered spot have contributed to its safety.



**DELPHINIUM CARDINALE.**—This has, I think, a future before it. I saw it the other day at Glasnevin with a candelabrum-like branching stem nearly 5 ft. high; it is certainly quite distinct from *D. nudicaule*.—T. SMITH, *Newry*. [As an instance of the persistency with which *D. cardinale* flowers, it may be mentioned that we saw last week the fine plant that Mr. Stevens had in perfection in his garden at Byfleet in the beginning of summer still in blossom—a far longer period than that during which any other Larkspur flowers.]

**PAULOWNIA IMPERIALIS FINELY GROWN.**—A noble young specimen of this tree bearing enormous leaves we saw a few days since in Mr. Stevens' garden at Grasmere, Byfleet. It is about 8 ft. high, and consists of a single stem, furnished from the base with leaves, the largest of which measures upwards of 2 ft. in length and width. The tree has been planted about four years, and has been cut down to the root-stock the two preceding winters, but the present growths are much larger than those produced previously, which plainly shows that the plant was not injured materially. A nobler object in a garden than this could not well be imagined. The frost did in this case what we have advised when ample foliage from a hardy tree or shrub is desired.

**WATSONIA ROSEA.**—Until we saw a remarkably well-grown example of this Cape bulbous plant at Heatherbank, Weybridge, we had no conception of its great beauty. It is by far the finest species we have seen, the flowers being larger than any, and the colour, a kind of lilac-purple, is superb. Mr. Wilson grows it in large pots, in which it thrives wonderfully, as some of the flower-spikes are as much as 4 ft. high, and furnished for fully 1 ft. with a dense cluster of blossoms. It is by thus growing these Cape bulbous plants that we can form any adequate idea of their beauty.

**GRAPES.**—These have lately been selling in Covent Garden as low as 3d. and 5d. per pound! It would perhaps be more profitable for the future to turn one's attention to Cabbages or Tomatoes. We believe many cases are on record where London householders pay more per pound for Cabbages than the above mentioned price for Grapes. Of course they were rather poor, from the Channel Islands, but not very bad, and Grapes of good quality were sold for 8d. a pound.

**MAULE'S QUINCE** (*Cydonia Maulei*).—In very few gardens can this handsome shrub be seen in such perfection as in Mr. Stevens' collection at Grasmere, Byfleet, where it is so plentiful as to be used as boundary hedges to the garden. Just now every bush, without exception, is literally covered with bright golden fruits, produced in clusters the whole length of the branches. Where exposed to the sun the fruits assume a rosy tinge, which adds much to their beauty. The fruits are edible either for immediate use or as a conserve. They are pleasantly acid in a cooked state when fully ripe, and the flavour is quite unique so far as our experience goes, there being a decided perfume of honey. The plant is perfectly hardy, and is beautiful in flower as well as in fruit. For coloured illustration see GARDEN, Vol. p.

**VERONICA SUBSESSILIS.**—If this new and handsome Japanese plant could be seen in such perfection as we saw it a few days ago in the garden at Grasmere, Byfleet, there would be few that would not express a desire to possess it. It is, as regards the flowers, superior to any known to us, the blossoms being of such a rich deep purple and produced in such stout dense spikes in a candelabrum-like manner, as to make it highly attractive. The foliage, too, is massive, and remains in good condition till the plant is out of flower. It is correctly a variety of *V. longifolia* with undeveloped leaf-stalks and another name, for it is *Hendersoni* under which it is known in some gardens and nurseries.

**THE DOMINY PRESENTATION FUND.**—Sir Trevor Lawrence writes: "Will you kindly make known the result of our endeavour to raise a small fund as a recognition of the services to horticulture and the personal worth of Mr. John Dominy on his retirement from the service of

Messrs. Veitch & Sons. I have received £262 10s. 6d. from 114 subscribers. After paying for advertisements and other expenses, I shall have £250 to present to Mr. Dominy. I should mention that many of the subscriptions were accompanied by letters which showed that the writers had a great regard for Mr. Dominy. Indeed, the testimony to his personal qualities and to his skill as a raiser and grower of Orchids has been most emphatic. With the consent of the Council of the Royal Horticultural Society, I propose to present the fund to Mr. Dominy after the council meeting on October 11, at 3 p.m. I beg to thank the subscribers to the fund for the liberality and ready kindness with which they have contributed."

**HARDY CYCLAMENS.**—*C. hederifolium* and its white variety are lovely just now in the Cambridge Botanic Garden. They have yielded for cutting a large number of flowers, and yet the plants are the most attractive on the rockery. Nothing in the way of foliage can surpass the beauty of the tufts of elegantly marbled leaves. —L.

**PRESENTATION TO MR. BRUCE FINDLAY.**—At a meeting held the other day at Manchester it was unanimously resolved to give Mr. Bruce Findlay a substantial presentation in recognition of his long and eminent services in the general spread of horticulture and floriculture. An executive committee was appointed, and subscriptions to the amount of £250 10s. were entered at the meeting.

**THE QUAMASH** (*Camassia esculenta*).—In our account of this plant last week (p. 302) we omitted to mention that the drawing from which our plate was prepared was made by Mr. Moon from plants in Messrs. Osborn & Son's nursery, at Fulham.

**PITCHER PLANTS AT HAMBURG.**—Messrs. Veitch have been awarded the state medal and large gold medal for their collection of *Nepenthes* at the recent great show at Hamburg.

**MESSRS. FRADELLE**, of Regent Street, have published an excellent photograph of the late Mr. Trelawney, the friend of Shelley and Byron.

The September number of *Colburn's New Monthly Magazine* contains a portrait and an interesting biographical account of Mr. G. F. Wilson, of Heatherbank, Weybridge Heath.

**About broad-leaved Saxifragas.**—"G." has done very good service by plainly pointing out the principal differences among the various types of these plants. Allow me, however, to state that, like many other Himalayan plants, these are also very variable, especially *S. Stracheyi*, the most different altitudes of its occurrence showing the most different variations; the heart-shaped somewhat uneven leaves of plants from 7000 ft. of altitude change at 10,000 ft. to even and smooth ones of an elliptic or even spatulate form, those from the lowermost situations having the richest and brightest flowers, but are rather tender.—MAX LEICHTLIN, *Baden-Baden*.

**Culture of Babianas.**—I have for many years discontinued the culture of *Babianas*, *Ixias*, &c., owing to their not being hardy and so often cut up by frosts, as to render them an almost constant source of disappointment. If any of THE GARDEN readers succeed with *Babiana* out of doors, I should like to know, but fear the best of our climates is not good enough for them.—G.

**Raising bedding plants from seed.**—I am personally cognisant of the doings of the Messrs. Sutton in this respect, lately noticed in THE GARDEN, and I have for several years past seen all the flowers named sown as stated, and flowering freely in the open borders from June onwards. Their *Phloxes*, *Verbenas*, *Indian Pinks*, and *Petunias* are always exceptionally fine from seeds sown in February or early in March.—H.

**A beautiful Sea Holly** (*Eryngium spina-alba*).—This plant is a charmingly coloured one, quite as well worthy of cultivation as the alpine or the amethyst Sea Holly. We noticed it in the Botanic Gardens, Regent's Park. It has many heads of flowers, and is rather dwarf in habit, but the colour of the stems is beautiful and deep—a most interesting and good herbaceous plant.

## GARDENING IN AUSTRIA AND HUNGARY.

I AM purposing a tour in Austria and the Tyrol, and should be obliged by any of the correspondents of THE GARDEN informing me of the gardens worth seeing in that locality.—V. A.

I think anyone visiting Austria for the purpose of seeing its gardening, its plant cultivation, landscape work, and even its kitchen garden practices, would be able to bring back with him many useful hints and new ideas. In Hungary there is much less to be seen, for the older families and aristocracy are very much reduced pecuniarily, and gardening has suffered accordingly.

The town gardens in Bohemia and Upper and Lower Austria show some fair work within limited areas, but they show also much of what we should call bad taste in planting and design. They represent merely the fashion of the hour, and are being continually altered and reconstructed. The Austrian soon tires of the same thing, and must have change, and is, moreover, a severe critic of the works of others, or he thinks he is, which results in much the same thing—everlasting change. When I was there a short time ago sub-tropical gardening was unknown, although the warm summers facilitate the planting out of tropical plants. I was among the first who practised it, and soon had imitators in large places. Owing to the excessive dryness and heat in Lower Austria, Moravia, and Hungary, south of the Carpathian Mountains and the Tatra, gardening of this kind is attended, like the production of good turf, with great expense; and if a garden is unprovided with a water system of some kind each is almost impracticable.

In Styria (Steiermark), the Tyrol, and the hill country in the north of Moravia (Mähren) the climate is cooler and rain is more frequent. In these parts fruit trees abound, and the climate is more favourable during the growing season. But in a country like Austria possessing such a variety of contour, and extending through so many degrees of latitude, the greatest variety of plant growth is found, from Figs, Olives, Maize in the south, through nearly the whole gamut of vegetation found in temperate climates, to Lichens and alpine plants in its mountains. For good gardens under intelligent men, Bohemia must certainly be placed in the highest rank. There the landed proprietors are comparatively well to do, and labour is abundant and cheap. Opocno (pronounced Opotchno), belonging to Graf Mansfield, is well worthy of a visit. Prinz Adolf Schwarzenburg has several fine gardens in that country.

The garden and demesne of Teschen, at Teschen-on-the-Elbe, close to the Saxon Switzerland, is a famous place. So also is Muskau, Prinz Pikler Muskau garden, famous for its landscape work and varied collection of shrubs and trees. Graf Hoyos and Prinz Khevenhüller have nice gardens, and Prinz Kinsky, at Herman Mestic, the Stadt Garten in Prague, and the gardens attached to the imperial residences there will furnish something of interest to the traveller. In Moravia there are several extensive gardens, viz., Graf Geo. Stockau, in Napagedl, on the northern rail; Bucklau, also near there on the same line, belonging to Graf Berchthold; Graf Mitrovsky has a nice place not far from Austerlitz, and Prinz Salm, near Adamsthal-by-Brünn, the provincial capital. Prinz Johann Leichtenstein's hunting residence, Eisgrub, is also in the province, about three miles from the Vienna-Brünn line at Kostel Station. The imperial and town gardens in Vienna and environs have been so often described, that they have but little of interest in them that is worthy of description. They contain some of the finest examples of the bad taste of Le Notre, as at Schönbrunn, and a great deal of the modern in carpet and other bedding.

There is quite an unique flower garden at Dornbach, near Vienna, belonging to Princess Schwartzenburg, which would repay a visit. It was quite a gem in its way three years ago—a veritable *multum in parvo*. Baron Sina has a nice place in the country south of Vienna, and there are several others in the same quarter. Sieben Stein and Leopold Stein, belonging to Fürst Johann Leichtenstein are pretty places in a mountainous country about two hours by rail from Vienna going south



It would be the best procedure for any one travelling the country, in order to see its gardens, to put one's self in communication with the secretary of the Vienna Horticultural Society (Die Gartenbau-Gesellschaft), Park Ring, or with such a nurseryman as Rudolf Abel and Cie., Auhof St., Hietzing, a suburb of Vienna; or the house of Rosenthal, nurserymen, in Simmering Haupt Strasse. They would supply names and addresses of the best gardens and proprietors. The wine and fruit school at Klosterneuburg - by - Vienna should not be omitted. There is a magnificent monastery and a still more magnificent cellar, and the real vintage is superb, if you can get it, which is no easy matter.

Views and plans of any places of note are not easily obtainable, although architectural objects are often photographed and exposed for sale in towns near the places where such objects exist.

SYLVESTRIS.

## EDITOR'S TABLE.

**A LOVELY ORCHID.**—From Dr. Paterson, Bridge of Allan, a golden Orchid. We often use the term, but never saw a flower so pure a gold, while the lip is cut into a rich lace-like fringe of fine gold Moss, reminding one somewhat of the beautiful golden Moss that grows on the Pines in the Sierras of California. The plant is *Dendrobium chrysotis*, from a plant with eleven spikes like this, ten bulbs or stems, two of which are about 5 ft. high.

**A NOBLE LILY (LILIUM NEILGHERRENSE).**—The Lily season has been long and good. The Rev. Mr. Rawson sent us on September 15 a noble bloom of this Lily, of which he remarks: I find in the Lily books that *Lilium Wallichii* is stated to be "pure white," and growing to the height of 4 ft., and *L. neilgherrense* "lemon" colour, growing to the height of 2 ft. to 3 ft. Now, this is certainly lemon, but the stem is above 4 ft. high. Which is correct? The question of height is one of soil or temperature to a great extent, but this is the finest Lily of the kind we have seen: the flower is 6 in. across at the mouth (considerably more if its recurved petals were measured). It is fine in form, and solid looking as if cut out of old ivory.

**ODONTOGLOSSUM CRISPUM (ALEXANDRE).** This fair Orchid, with large soft crimson spots on its petals, from Mr. Stuart Low, with other forms brownish and smaller in the spotting. These are all from recently imported plants, and, therefore, the flowers are small, but the large-spotted kind promises to be a fine variety.

**IXORA ODORATA.**—"This is a fine plant for a big stove. It grows tall and has a 'bad habit,' but is very free flowering, and its delicious fragrance fills the whole house." So writes Mr. Moore of a very fine plant which he sends, but as regards the "bad habit," one may ask, Have we not too many plant cushions? and would not what is called a poor habit be a relief occasionally?

**SENECIO PULCHER.** The fine specimen of this great purple-crimson, Daisy-like plant, brought us by Mr. Wilson, has agreeably surprised us in the way the buds have continued to open long after the large flowers open on it when it arrived had perished. It is unusual in our experience for flowers to do this, unless certain races of bulbs like the Alliums.

**POMONE BRILLIANT,** a bright compact Delphinium, sent us some time ago by Miss Owen from the Comely Bank Nurseries at Edinburgh, has surprised us by its endurance as an everlasting flower; it has retained colour and form for

several months past, and, carefully dried and preserved, would, we think, be worth placing among Grass, Rhodanthes, &c., particularly as rich blues or purples are rare among such flowers. This property may be possessed by other members of the family; we have rarely dried a flower which turned out so well as this.

**A NOBLE ORCHID.** *Dendrobium formosum giganteum* from Mr. Stuart Low, of the Clapton Nurseries, with flowers  $4\frac{1}{2}$  in. across with a fine Lily-like form, pure white with an orange splash in the lip. One of the finest things in form of the flower and purity of colour we have seen. Messrs. Low, who have brought many valuable Orchids into cultivation, have many plants of it.

**A ROSE COLOURED BINDWEED (CONVOLVULUS althæoides).**—This pretty Bindweed comes from Mr. Kingsmill from plants gathered in Algeria. The plant seems to grow in many places around the basin of the Mediterranean, but is no less happy in an English garden. It is cheery in the colour of its rosy cups, and graceful and distinct in leaf and growth.

**PHYGELIUS CAPENSIS.**—This bold and showy autumn plant comes to us from various districts, showing its fitness for cultivation in different parts of the country. We cannot say why, but we never cared much about this plant, notwithstanding its bold growth and bright colour. In soils not warm it is best as a foot-of-warm-wall plant.

**HYPERICUM OBLONGIFOLIUM.**—When people make gardens of the season, so to say, when they have a corner or series of beds or a sunny bank for the September garden—a perfectly practical aim—they will call in the aid of this handsome St. John's Wort, with its golden flowers and polished buds. It comes to us from Glasnevin, and is beginning to be frequent in our gardens.

**POPPY ANEMONES IN SEPTEMBER.**—Mr. D. Scott sends some of these from a plantation made in May, and they are fairly pretty, but look somewhat out of season. The merit of the Poppy Anemone in all its glorious variety is that it braves our northern spring, and those who do it justice may have charming spring gardens of it alone on all but clay soils.

**AUTUMN BLOOMING PYRETHRUMS.**—Mr. Wate sends a fine collection of these plants, which are now giving a second or autumn bloom. Did we not know them in the great flush of their summer glory of colour, these autumn flowers would be thought much of, and in any case are welcome.

**POLYGONUM CYMOSUM.** Mr. Moore, of Glasnevin, sends flowering specimens of this Knotweed, which he praises highly as fitted for a rough place, attaining a height of 4 ft., and covered at present with flat heads of white flowers. Slightly fragrant and useful for cutting for the house.

**WHITE CYCLAMENS.**—A little bunch of these from the open garden at Linton are very welcome, and fringed by their own pretty leaves resemble at first sight a bunch of white Violets. The question of what is to become of a flower-seeking editor in the London fogs that are even now showing signs of their unwelcome return is not after all so very serious in the presence of these and so many other pretty things.

**GENTIANA ADSCENDENS.**—This tall plant comes to us from Glasnevin, also from Mr. G. F. Wil-

son. It is described as resembling the Willow Gentian, but is, of course, taller and flowers later, being also deeper in the colour of the flower. If this be so, it is a very interesting plant, because the Willow Gentian (*G. asclepiadea*) well grown is handsome, and, moreover, will grow in a woody place, which is rare for a Gentian.

**LOBELIA SYPHILITICA.**—We have several hybrids from this plant of late, all of them poor. In the presence of the really handsome and bold scarlet Lobelias we cannot understand people pottering about these wretched hybrids from the always poor *siphilitica*, which never should be seen away from the fringe of a wet ditch, and which is not worth a place in a garden.

**A GOLDEN ROD (Solidago rigida).**—Mr. Moore sends me this, which he describes as the best of all the Golden Rods, which is saying very little for them, for in truth they are a ragged lot, which have no business at all in any choice border or group. The garden is not the place for them, and they are such gross feeders that they soon impoverish any good border in which they are placed. They hold their own in any rough open shrubbery or copse, and that is the place for them.

**BEGONIAS IN THE OPEN AIR.**—Much as we have heard of these plants and their beauty of late years, they are not enough valued for the sake of their novel hues. The beauty of colour of the buff, yellow, and salmon-coloured kinds is very remarkable. We are indebted to Mr. Pottle, of Grundisburgh, Suffolk, for a series of kinds, comprising salmon-pink, cherry, delicate lemon, buff-coloured kinds in addition to those more usually sought for than vivid or decided colours.

**FUCHSIAS IN THE FLOWER GARDEN.**—Mr. Edwin Jackson sends from near Bangor a variety of Fuchsias which reminds one how well these fair bushes grow in mild districts. Talk of autumn flowers! What is so lovely, so varied, and so graceful as the Fuchsia in those seashore districts where it does so well? But why should we in midland and cold districts give it up so hopelessly? It may be cut down in winter, but might we not do more in summer and autumn with it, even in the face of this difficulty? Slight winter protection would save the plants almost anywhere. It is the craze for flat plots of colour—something that will make "a show" that has driven the Fuchsia from the flower garden.

**THE MEADOW SAFFRONS (Colchicum),** sometimes called autumn Crocuses, come in, warning us that time is flying, and brightening autumn meadows with their vases. They are typical of the plants that will look better in grassy places or in what we call the wild garden than in any formal bed or border. Their naked flowers want the relief and grace of the Grass and foliage around them. Of course choice sorts and rare, or those we want to increase, should be grown in nursery beds, but the true use for the plants when they can be spared is in pretty groups and colonies in turf not often mown.

**Fruit on the Rowan trees.**—The crop of fruit on the Rowan trees hereabouts is truly magnificent. The branches are bent down by the heavy bunches of red coral berries. I have not seen such a sight for some years past.—J. S.

**New Hemlock Spruces.** Concerning the two new varieties lately mentioned in THE GARDEN, Mr. Anthony Waterer writes: "The Hemlock Spruces referred to I bought when I was in America of Messrs. Parsons and Co., of Flushing."



## TREES AND SHRUBS.

## FLOWERS OF THE TULIP TREE.

During the flowering season of the Tulip tree we had a lovely basket of the flowers from a large specimen in Mr. Talbot's richly stored garden at Margam, S. Wales. The flowers of this tree, as with various others, are so seldom seen near the eye, that their beauty to a great extent is lost. In any case we have never seen a more charming object than a large flat dish of the flowers and their ample and handsome leaves. Our illustration shows a few put into a small bronze pot. If we could show all the soft and curious beauty of the flowers and their foliage, we think the Tulip tree would become "fashionable" for the sake of its flowers for rooms.

## FRUITING TREES AND SHRUBS.

The flowering season of nearly the whole of our trees and shrubs being past, one cannot fail to be struck with the great beauty of many of them when in fruit. The Rosaceæ is the first to attract attention, from their great number and variety, including as they do the Pyrus, Crataegus, Roses, Cotoneasters, and many others.

**Pyruces.**—Amongst these there are at present the Siberian Crab—red (rubra) and golden (aurea); the former brighter in colour than the normal type. The Mountain Ash (*P. Aucuparia*) is seen everywhere, and its yellow fruited variety but seldom, certainly not so often as might be considering the beautiful effect of both of them when in fruit. The American Service (*P. americana*) is more showy than the English, the bunches of fruit being larger and brighter, but in this respect they vary somewhat in different plants. *P. Ringo*, so showy in the spring, is absolutely laden with Cherry-like fruits of a greenish hue tinged with red; individually they are not showy, but from their quantity attract attention. The White Beam Tree (*P. Aria*) is well known, but too pretty when in fruit to be passed over; and among others are the Transparent Crab and the variegated fruited Pear, which latter has in some specimens the fruits most beautifully mottled and striped with yellow and red, but they vary a good deal in their markings.

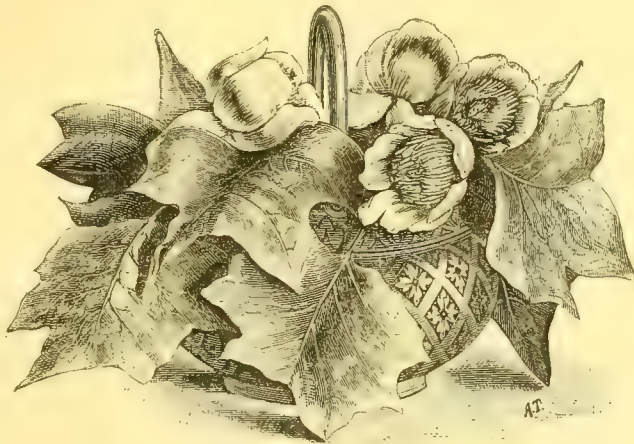
**The Thorns** form a large and showy class, some of them at a little distance appearing to be one mass of colour. Among the best and most distinct are the scarlet Thorn (*C. coccinea*), a large growing kind attaining the dimensions of a small tree, and bearing medium sized scarlet fruit, which in its variety *Kelmanni* is rather lighter in colour, but larger both in berries and bunches. *Crataegus nigra* is conspicuous from the colour of its fruit, which is quite black, but in this respect it is nearly approached by that of *C. Douglasi*, and equalled by the black-fruited variety of the common Hawthorn. A close inspection of *C. punctata* reveals the curious little dots from which the name is derived. In the Tansy-leaved Thorn (*C. tancetifolia*) we have the largest fruit of the whole genus, which from its flattened shape and the fact of the large bracts adhering to it, is very easy to distinguish. The Cockspur, distinct though it be in other respects, is in its fruit not more showy than the common Hawthorn, of which latter there is besides the black fruited form, before mentioned, one bearing yellow

berries. The large yellow fruits of *C. Aronia* and *orientalis* are very showy, and during the winter months nothing can exceed the beauty of *C. Pyracantha* and its variety *crenulata* when trained to a wall, and bearing as they do in such a position large bunches of bright orange scarlet berries.

**Cotoneasters.**—The quantity of small brown fruits borne by *C. bacillaris* renders it quite distinct, but not nearly so showy as *C. frigida*, the crimson berries of which remain on nearly the whole of the winter, or later on the smaller growing *C. Simmondsi*. The evergreen kinds again are all thickly in fruit, which, though somewhat dull in colour, still furnishes variety.

**Roses.**—Of these one of the prettiest is the now well-known *R. rugosa*, which is still flowering, though sprinkled over with its large orange-scarlet fruit. *R. cinnamomea*, bright crimson, semi-transparent, and spinosissima, very dark, almost black, are notable, as is also *R. villosa*, remarkably bright in colour, and with long prominent bracts. There yet remains by far the most distinct Rose as far as fruit is concerned, viz., *R. microphylla*, the pips of which when ripe are yellowish green with long bracts adhering, and so densely covered with spines as to remind one of the husk of a Chestnut.

**White fruits**—Amongst these there are the Snowberries (*Symphoricarpos*) and that pretty



Flowers of Tulip Tree.

little New Zealand shrub, *Hymenanthra crassifolia*.

**Other fruit-bearing plants.**—Amongst these may be named the common Barberry, the European *Euonymus*, of which there is a white fruited variety, *Hippophaë rhamnoides* with bright orange fruit and silvery foliage, and the common Elder, green berried and white. These all intermixed are very attractive. In cool, shady places the foliage of the *Skimmias* acquires a healthy dark green hue, with which the fruit finely contrasts, and the latter is as plentiful as in more exposed positions. Among other plants, *Lycium europæum*, with its long pendent branches thickly studded with scarlet berries, is very pretty, and so are *Lycocateria formosa* and the *Arbutus*, and above all the different kinds of Hollies, which this season are in many cases unusually full of fruit. The yellow-fruited variety is so distinct and effective, that it would be well if it were more often met with. The blue-fruited Vine (*Vitis heterophylla humulifolia*), although often shy in fruiting, is when in good condition a beautiful object. I have succeeded best with it on a south wall, allowing it to grow as it will. Thus treated, its clusters of blue fruit are freely produced, but where not assisted in this way the flowers open too late to allow the fruit to ripen. ALPHA.

**Ailantus glandulosa.**—One of the largest and handsomest examples of the *Ailantus* I have

seen is in Richings Park, near Slough. It is about 50 ft. in height, has a large dense head, and the foliage is vigorous and luxuriant. At a short distance off it might well be mistaken for a fine Ash tree.—A. D.

## JUVENILE FORMS OF CONIFERÆ.

It has been long ago explained that many of the curious forms of Juniper, *Arbor-vitæ*, and *Retinospora*, which are well known to cultivators, are but juvenile conditions of well known species. All these plants change their form under different conditions of vegetative vigour. Now and then an individual retains its juvenile form through life, and continues this form even when increased by cuttings. They are in a sense vegetable imbeciles. It is surprising that this knowledge travels so slowly in Europe. Our poor little Tom Thumb, which we all knew to be but the American *Arbor-vitæ*, pure and simple, it was insisted by our friends on the continent of Europe must be one of the Japanese *Retinosporas*, and it figures in their writings to this day as *R. Ellwangeriana*. They are still puzzling over it in Europe, and now, seemingly satisfied, have given the whole set new Latin names. Our *Retinospora squarrosa* is translated to *Chamaecyparis pisifera squarrosa*, which we may note, by the way, will have to be again corrected, as it is a juvenescent of *R. obtusa*, and not of *R. pisifera*. Our *Juniperus ericoides* and *Widdringtonia ericoides* is pronounced to be *Chamaecyparis sphaeroidea ericoides*.

It may be noted here that in our thirty years of experience with numerous plants, we never saw one plant which "went back," or rather advanced enough to betray its relationship. Another is *Biota orientalis decussata*; a long list of synonyms is attached to this, among which we recognise only our old friend *Biota meldensis*. That this is really nothing but *Biota orientalis*, the Chinese *Arbor-vitæ*, we can confirm through one plant advancing far enough to bear a few cones. Our Tom Thumb is to be *Thuja occidentalis ericoides*. It is certainly *Thuja occidentalis*; but what is to become of another *Thuja ericoides*, which, also a juvenile, grows columnar, Tom Thumb, or *Ellwangeriana*, as our friends prefer to call it, growing nearly globose; or the other two or three with spreading and all sorts of habits, which people pick out now and then out of their seed beds? We would suggest that the first be called *Thuja occidentalis ericoides globosa*; the other, *Thuja occidentalis ericoides pygmæa*; the third, *Thuja occidentalis ericoides columnaris*; and the one with the darker coloured leaves, *Thuja occidentalis ericoides columnaris purpurascens*. One of these kinds has been found to be better suited to the far north than the other. This fact may warrant the name of *Thuja occidentalis ericoides columnaris purpurascens borealis*, a name long enough surely to make the "variety" run into popularity like wild-fire.

But seriously, allowing that a real variation from a normal type should be worthy of a botanical name as a botanical variety, what has a botanist to do with a separate botanical name for what is confessedly but a juvenile form of the same thing? Indeed, why should garden varieties have botanical names at all? We could never see why the slight variations of trees and shrubs should have botanical names any more than Pansies or Pumpkins. It really seems to us that this practice does more to prejudice the proper use of botanical names in the multitude than the hardest generic or specific name.—*Gardeners' Monthly*.

## NOTES ON TREES AND SHRUBS.

**REMARKABLE SILVER FIR.**—Any tree that has attained a height of 144 ft. in Britain may, I think, be fairly entitled to be considered remarkable. Such was the height of a Silver Fir cut down last Saturday. It was the highest tree in Longleat Park (probably the loftiest tree in Britain) and formed one of a group of nine Silver Firs standing on rather an elevated level



piece of ground. The site is fully exposed on the north-east side. Its dead withered top has been conspicuous in the group for several years, and it was evident from the appearance of the tree that it was gradually dying from the top downwards; doubtless, however, the severity of last winter hastened its death. The belt is quite sound for about 60 ft. up, where it divides into two heads. Although it was the highest tree in the group, it was by no means the finest and bulkiest specimen, as it only girthed 10 ft. 10 in. at 5 ft. above the ground, and contained about 350 ft. of timber; whereas the largest tree measures 15 ft. 3 in. at 5 ft. up, and contains between 400 ft. and 500 ft. of timber; its height is 138 ft., and it is still in full healthy vigour. The age of the group I should guess to be nearly 200 years old. Another noted and particularly ornamental and picturesque old tree succumbed this year in the pleasure-grounds. This was a deciduous Cypress. I should think it was about the same age as the Silver Firs. It was a fine old tree, 63 ft. high, spread of branches 35 ft., and contains about 55 ft. of timber. Its outline of foliage was less stiff and formal than is usual in this Cypress, and when clothed in its autumnal suit of almost red foliage it formed a most striking and beautiful contrast to the surrounding trees, as may well be imagined when I state that some of its nearest neighbours were the Tulip, Plane, and the Maiden-hair tree, with such fine evergreens intermixed as the Scotch Fir, Quercus Ilex, and huge Portugal Laurels. GEORGE BERRY, *Longleat*.

**Propagating evergreens.**—This is a good time for inserting cuttings of evergreen shrubs, as they become callused before winter, and in spring start into growth freely. A border with a north aspect, or behind a hedge or wall is the best place for them, for if exposed too much to the sun's rays they get dried up before they become rooted, and consequently fail. Select good strong cuttings with a heel, or portion of last year's wood at the base, and, having prepared them in the usual way, insert them in rows 1 ft. apart, and about 3 in. asunder in the rows. We dig the ground as we proceed, cutting a small trench for each row, and treading them in very firmly. The only attention they will require the first year is keeping them free from weeds, the surface pulverised to prevent cracking, and watering in very dry weather. By the end of a year they will mostly be well rooted, and will require replanting in nursery beds 1 ft. apart each way. They will then make bushy little plants for filling beds or vases in winter, and afterwards for filling up shrubberies or forming undergrowth in woods. The various sorts of Laurel, Aucubas, Box, Privets, Berberis, Bays, Laurustinuses, Euonymuses, and similar shrubs strike root freely, and creepers or climbers, such as the Ivies, strike freely if put in now. The main cause of failure is not starting soon enough; people wait until the temperature of both air and soil get so low that it is impossible for rooting to make any progress. In cases where tender subjects are employed hand or bell-glasses should be used, but ordinary evergreens strike very well in the open air.—J. G., *Linton*.

**Pruning Conifers.**—There is a prevalent notion that Conifers do not like pruning; and in many cases trees that would make good specimens get ruined from want of a little timely attention in this way during their earliest stages of growth. In forests, where trees are planted thickly, there is no chance for them but to run up straight; they get crowded by their neighbours, and lose their lower branches by reason of the dense shade in which they are placed; but when planted at wider intervals for ornamental purposes the side branches retain their vigour, and unless checked by timely pruning rob the leader of its proper supply of sap, until, instead of making a handsome pyramidal tree, it becomes merely a scrubby bush. Now, I find that where they have made

several leaders, and have become quite stunted in growth, they may be renovated by careful pruning, although, of course, the process is slow, for Conifers will not make shoots from old hard wood like a deciduous tree; but by keeping all the lower branches stopped in for a time, a leading side branch will straighten up and become a good leader. In fact, we have many Wellingtonias and other varieties of Conifer that have been beheaded by violent gales of wind snapping the succulent leaders short off; yet by carefully stopping the side growths they have quickly formed a new leader, and the junction of the two is hardly visible.—*Field*.

**Cissus antarctica.**—There is in Battersea Park a pretty example of this plant crawling over some supports to old Yuccas; it seems a very graceful hardy climbing shrub which ought to be better known than it is.

## THE ROSE GARDEN.

### ROSES IN POTS.

A GOOD deal has been written on this subject; still the fact is obvious that the pot culture of the Rose is neither common nor popular. Fine pot Roses may be seen at shows and in the nurseries where the Rose is made a speciality, but one seldom sees them in quantity nor of high quality in private gardens. Various reasons might be assigned for this, such as the hardness of the plants, the possibility of growing them in perfection out of doors, and the difficulty of growing them well in pots, &c. There are, however, wide degrees of hardness among Roses. How few among all the great family, for example, have been sufficiently hardy to pass through the droughts of the past June and the deluges of this August with impunity. Moreover, there are whole classes of Roses really not hardy at all. How few of the Hybrid Chinas, Teas, Noisettes, or Bourbons will outlive 25° of frost, and as to zero temperatures that are becoming so alarmingly frequent of late years, they sweep through the glorious class of Hybrid Perpetuals and leave the ranks of Roses behind them more thickly strewn with the dead and the dying than the living. By growing Roses in pots we render them at once portable, and therefore safe from the effects of wind and weather. Glass and pots would enable us to defy the fiercest storm. Possibly, however, one of the greatest obstacles that has hitherto prevented the culture of Roses in pots has been the propagation of the idea that the pot culture of the Rose is so very simple and easy. No doubt it seems so to those who have succeeded, but it is by no means so easy to the uninitiated. It requires as much and more care and skill to do Roses well in pots as to grow Pelargoniums, Fuchsias, Heaths, or fine-foliaged plants. Some may be surprised at the mention of such common plants as Pelargoniums and Fuchsias as tests of culture; but the fact is such plants are seldom well grown. Even at the great show at Manchester the other day the Pelargoniums were nothing particular, while the Fuchsias were so poorly grown that they were crushed into an angle as much out of sight as possible near to Mr. George Paul's matchless group of Tea Roses, the latter, of course, taking off all eyes from the Fuchsias. Depend upon it, the man who can grow fancy or tricolor Pelargoniums well, and can keep the same plants in robust health and perfect condition for, say, ten or a dozen years, will also be likely to grow good Roses in pots.

**Extension of the blooming season.**—This is no doubt the most potent of all reasons why the Rose should be grown in pots. Of course the season may also be extended by having glass-houses furnished with Roses planted out in beds and borders, but these must ever continue the luxuries of comparatively few, or the necessities of mercantile horticulture; whereas Roses in pots may readily be bought, and are, in fact, already within reach of all. The portability of Roses in pots also brings their period of flowering more entirely under our control. We can subject them to heat

and cold, drought and moisture, rest and excitement at will. By having three, four, five, or six sets of Roses in pots the year may be girdled round with Rose blooms. I have frequently been able to do this with only three sets of Roses, and less than a score of plants in each set. However, where quantity of Roses are wanted, four sets of at least fifty each would be better. Of course the number of plants to be grown in pots must be determined by the space at the command of the grower, the demand for Roses, &c. It will also be observed that while the amateur might content himself with four, half, or a whole dozen, the grower for market might require four sets of 500 or 5000 each, as the case might be. One or the summer lot might also be dispensed with, as from June to the end of September, inclusive, a good supply of Roses might generally be had from plants in the open air. However, in unfavourable localities or conditions, such, for example, as a polluted atmosphere, and those that had no garden, it might be necessary to depend wholly on Roses in pots, and hence all the sets might be needed to answer that great source of happiness and pleasure—Roses throughout the year.

**Roses in winter and spring.**—The most difficult season to command a supply of Roses is comprised in the six months from November to April inclusive; the best and easiest way of furnishing these months with bloom is by skilfully making the old Roses furnish the old year to its close and overlap the new flowers in January or February. The Rose does not take very kindly to forcing, and resents anything like extreme heat, either in doors or out. Hence the need of extreme care and caution in treating the first batch of plants introduced into heat early in November. It is especially true of the Rose that forcing is merely a development. It creates nothing, only unfolds. Hence, if our Rose plants are well ripened, the buds large and plump, we have already Roses in embryo, and it only needs a skilful application of heat, moisture, light, and air to unfold these embryo buds into beautiful and fragrant Roses. Food is not named in this connection, as but little food is needed. That should have been given during the growth of the wood that is now placed under a forcing regimen. The plants cannot be too close to the glass, as light keeps the buds strong and secures fine blooms, provided always that too much heat is not applied to the plants. The start and first stages of growth should be slow, a bottom heat of 55° and a surface one of 50° for the first fortnight or three weeks is ample, gradually increasing the temperature with growth until by the time the plants are in flower they may be subjected to a temperature of 55° at night and from 65° to 70° by day. If bottom heat is available, Roses in pots make more rapid progress. If all goes well, some of the Roses will begin to flower in January, and will continue to bloom for six weeks or two months. By introducing a second batch of plants in December or January and treating them exactly the same as the first, they will be in flower in February or March, and will carry the season of Roses on through April and May. The third batch started in March or April will need but little forcing to bring them into flower in June, and by growing a sufficient variety of sorts and number of plants, Roses may be cut from these from June to October. There still remains the three dullest months in the year to be provided for, and Tea Roses are, on the whole, the most useful for filling up this critical gap, though several Perpetuals—such notably as *Boule de Neige* and *La France*, are also admirably adapted for lighting up the dead months of the old year with their beauty and fragrance. This last batch of Roses should be pruned pretty closely in towards the end of July, so as to have made a vigorous start by the middle of August. Should the soil and the climate be favourable, place them after pruning in the most open and most sunny place available in the open air. Just before or immediately after they break, shift the plants into larger pots if they require it, and water and feed freely so as to obtain a vigorous growth, of from six to a dozen or more shoots, according to the size and vigour of the plants.



Beware, however, of over feeding or such grossness as would produce mildew, also of the roots getting through the pots into the soil; the shoots should also be trained to keep them as far as possible apart and prevent them being broken by the wind. Possibly some of the more excitable Teas and Noisettes may break too early, and threaten to flower too soon. As a sufficiency of shoots may not have come forth from the first buds, as not unfrequently happens with such fine Roses as Lamarque, Celine Forestier, Niphetos, &c., these may be stopped a second time and thus forced to produce a larger succession of bloom. Early in October remove this winter flowering batch of Roses indoors. Most of the shoots will be crowned with clusters of buds, and these will expand in succession all through October, November, December, and January, until superseded by the earliest batch of forced Roses. D. T. FISH.

## THE KITCHEN GARDEN.

### NOTES ON CROPPING.

WITH the exception of a sowing of Nantes Carrot, which may yet be made on a warm sheltered south border, seed sowing may be considered over for the season, but not so daily vigilance in the management of the crops that were got in last month. These include Lettuce, Endive, Cauliflower, Cabbage, Spinach, and last, but not least important, a good breadth of Onions for standing through the winter. The heavy rains we have recently experienced have battered heavy adhesive soils to an extent that renders the egress of delicate seedlings very difficult, and leaves them exposed to the depredations of slugs which are now having a jubilant time. To accelerate growth and get them out of the way of their enemies the hoe should be kept going between the drills. Timely thinning should not be neglected, and dusting with quicklime on damp mornings will complete the usual precautionary measures; but where the enemy comes out very strong, catching and killing is easily effected by laying down a number of pinches of new bran on mild evenings, and following before bed-time with a dusting of quicklime. Good breadths of Lettuce and Endive may still be planted on any elevated borders, and arrangements must be made for protecting the most forward from severe frosts, which not unfrequently occur between the 10th and 20th of this month. Cauliflowers approaching fitness for use should be looked over at short intervals, and protected by turning the outside leaves in over the beds. Follow up the earthing of Celery in dry weather, having previously dusted along the sides of the rows with a mixture of quicklime and soot. On cold heavy ground the ridges should be broken up with steel forks some days before the earthing is performed, as the plants grow so much kinder when earthed with thoroughly pulverised soil. Ground from which the most forward kinds of spring-sown Onions have been removed will require working for early Cabbages. Good spit manure is an important element in the growth of this vegetable, but it should be kept well buried in the trench where the roots will find it, and make rapid progress after the turn of the year.

**FRAME GROUND.**—Attention must now be paid to the preparation of all available pits and frames for the reception of young Cauliflower and Lettuce plants as they become fit for removal from the seed beds; also for Parsley, which may be transplanted in light rich soil from the autumn-sown beds. If an exhausted Cucumber bed can be spared, a good sowing of Short Horn Carrot will come in at a very acceptable time. Radishes, Mustard and Cress may also be sown, but the lights need not be put on until danger from frost or heavy rain is apprehended. French

Beans may be sown in pots and plunged in gentle heat to get them forward for removal to pits that are supplied with hot-water pipes. The greatest enemy to French Beans in all stages is a cold damp atmosphere, and to counteract its ill effects the pits for winter and spring use should be well warmed and ventilated. Where Tomatoes were planted after early Potatoes, a free circulation of dry warm air will be needed, and overhead syringing must be discontinued. For bringing an abundant crop to early maturity, pot culture answers best, as the roots can be starved or fed at will. W. C.

### THE POTATO HARVEST.

POTATOES seem better this season than they have been for two or three years past. In quantity they are mostly above the average, and there is little or no disease. Early garden kinds were certainly good, and late ones are equally so.

**LIFTING.**—Many good crops are spoiled from inattention as regards lifting. When to lift and harvest is a question often discussed, some contending that the only way to have Potatoes good is to lift all as soon as a spot of disease is seen on the leaves; others, again, allow the disease to do its worst, and lift what remains afterwards. We have tried both ways, and upon the whole are rather inclined to the latter, especially with roots which have to be kept and eaten a long time after they are dug. We have dug up hundredweights of Potatoes as soon as the disease was observed, and lost nearly all of them from it after storing, although no indication of the evil was visible at the time. Others left in the ground may have had many destroyed by the disease, but those which remained sound and were lifted and stored in autumn were more satisfactory than the early lifted ones. Potatoes which remain good after the disease has come and gone always keep well and turn cleaner out of the soil in autumn than they would have done earlier when only half grown. In some seasons we have lifted our early Potatoes in July, or as soon as they were ripe, but this year we allowed them to remain in the ground and now they look all the better, for it, as they are sound and clean and thoroughly well ripened. If taken up in July some of the tubers might have decayed, and in so doing affected the others, but now there is no danger of anything of the kind happening. In digging Potatoes the weather and soil should be, if possible, both dry, as nothing is worse than having them wet at taking-up time, or indeed at any time after they are taken up. If dug when wet the soil adheres to them and makes them both unsightly and not easily dried. After this time of the year Potatoes should only be dug in the mornings on fine days, and if they are thrown well on the surface of the soil they will dry a good deal before night, especially if the soil under them is moderately dry, and they should be placed under cover before night. Greening is one of the worst faults an eating Potato can have, and this must be avoided at harvesting time, and the sooner therefore they can be dried and the quicker stored the better. When digging up a piece of Potatoes the tubers for different purposes should be selected. All those for eating we secure first, as it is important to get them out of the light, and it does not matter much if those for seed are left some days on the soil.

**STORING.**—An open shed, or anywhere secure from wet, is the best place to put potatoes immediately after they are dug up. There they may be turned over once or twice and dried, and as soon as that happens they should be moved to their winter storage. In some instances this may be a dark shed, and in these they may be put in pits; a dark shed is always what we use, and it answers well. It is, of course, quite dry, as it should be, and if frost is likely to penetrate it in winter, the Potatoes are covered well over. At all times a little straw is kept on them to exclude light. Each kind is put in a heap 1 ft. or more in depth, and if the presence of disease is suspected,

it is easy to have them all turned over and examined. It is in this that house storage has an advantage over the pit system. In pitting them a piece of ground with a dry bottom is selected, and after this has been made level, the Potatoes are stacked on it in a triangular form, the bottom being about 3 ft. wide and the top about the same height from the ground. They are then thatched well up with clean dry straw, over which a quantity of soil is firmly placed. The soil thus used for covering should be dug from the side of the Potato mound, as this lowers the surrounding ground and causes the water to drain more readily away. Potatoes stored in this way must be very sound, as if disease begins inside it may do much damage before it is detected. All Potatoes should be lifted, dried, and stored before the end of October, and if this can be done before the days become much shorter, the crops will be all the better for it.

J. MUIR.

### NOTES ON THE KITCHEN GARDEN.

**Culverwell's Giant Marrow Pea.**—This is a new and apparently fine Pea. We have had several rows of it this season, and in each case it has proved satisfactory; as regards time it will match Telegraph or Telephone, and it somewhat resembles the latter in colour, but the pods are longer. Indeed, it is the largest podded Pea with which I am acquainted, and the pods are produced abundantly. They fill quickly and well, and the flavour of the Peas is all that could be desired.—J. MUIR.

**Late Peas.**—No doubt this is an exceptionally favourable season for late Peas. Those sown early in June had not felt the drought injuriously before heavy rains came, and there has been such ample rainfall since that Peas may now be seen in as good form as at mid-summer. I put in a sowing of Premier, a fine white wrinkled Marrow, in very dry soil in May. Owing to the drought but a few seeds germinated early, but after the rains at the end of July many seeds grew, and now I have plants producing a remarkably fine sample; indeed, a fine crop.—A. D.

**Among the Peas.**—If "R. W. L." will send us a tracing of the pod, or, better still, a pod itself, of the Pea that he wants named, we will endeavour to assist him. Would he also say whether the ground was extra manured, because that, in our opinion, would tend to make a Pea grow higher than its normal height? but, we must confess, a variety growing 10 ft. high is a little out of the common. All the packets of Telephone Pea sent out by us last summer were sealed; perhaps therefore your correspondent will say if his was so, and in our packets. Perhaps he would prefer to tell us plainly from whom he obtained his seed. This grand Pea (Telephone) is admitted upon all sides to be the very best all-round Pea in cultivation; so if "R. W. L." has something better we should like to see it.—JAMES CARTER & Co., High Holborn.

**Carter's Yellow Plum Tomato.**—This bears fruits about the size of a pigeon's egg, of a most beautiful lemon colour, and they are not produced singly, here and there scantily, but come from every joint in long hanging clusters of a dozen or more. It is the freest fruiter of all the medium sized Tomatoes, and while the clusters are beautiful, the quality as a dessert fruit or vegetable is in every way excellent. It is one of the few Tomatoes we have selected for future culture. J. MUIR.

**Mushrooms under Tomatoes.**—I have seven Cucumber houses in which I have just finished cutting for the season, and I am raising 400 Tomato plants to stock them with for the winter. I think of turning over the old Cucumber soil, which is about 2½ ft. deep, consisting of leaves and light soil, and I want to know if I can grow Mushrooms underneath the Tomatoes, as they, as a matter of course, will be on the trellis. Kindly advise me as to the best way to proceed. Also, is it possible to make my own spawn for this season? Will it do to spawn new beds with freshly made



spawn?—T. H. [I should say it is next to impossible to grow Mushrooms in light soil and leaves. In the first place, the soil is worn out by the Cucumbers; secondly, you could not grow Mushrooms under Tomatoes; the drip from them would entirely ruin the spawn; and, thirdly, the heat required to grow Tomatoes would be too strong for Mushrooms. The cooler you can grow them the more solid the flesh will be. By applying heat to Mushrooms you get what are termed in the market Parasols in miniature. You cannot use spawn too fresh, provided it is well run into the bricks, which you should examine. The spawn should have the appearance of mouldy bread, but rather lighter in colour. If you notice small white cotton-like strings, don't use it; they mean exhausted spawn. The best site in which to grow Mushrooms is a south border well protected. R. GILBERT, *Burghley*.]

**Tomatoes for winter.**—Where Tomatoes are grown in pots for the winter and spring supply of fruit, they should now be fit for placing under glass, for like Cucumbers they require to be well established before the darkest days of winter set in, or the grower will get plenty of growth, but very little fruit. Our stock plants were sown in March, and potted off along with those intended for open walls. They have been growing on in an open, sunny position, and trained to single stakes during the summer, all fruits being cut off. They have been kept in rather small pots to induce a hardy woody growth, and about a month since they were transferred to their fruiting pots—12-in. ones. These we only fill half full of soil at first, and fill up with top-dressings after the crop is set; if supplied with rich food they continue bearing a great length of time, and when the pots are full of active roots with a full crop of fruit swelling off, they take the richest food that it is possible to give them with advantage. During the early part of the year we kept a batch fruitful for many weeks by means of top-dressings of fowls' manure mixed with a little loam. In a week after it was put on it was a network of white rootlets. Winter plants should be trained up near the glass, and the growths should be kept moderately thin. The small fruits now swelling will come in after outdoor crops are over, and as soon as the short days set in the blooms should be artificially fertilised. The sorts we grow are Hathaway's Excelsior, Trophy, and Vick's Criterion. We keep the plants starved until they have set a crop, and then liberal feeding insures success.—J. GROOM, *Linton Park*.

**Peas and Potatoes together.**—This system to which Mr. Cullingford alludes (p. 215) is by no means new; but I would warn the uninitiated against it. In the first place, the Peas growing among the Potatoes robs the latter of the rays of the sun, hence less sap is elaborated, and the tubers are in consequence smaller. The haulm is also weaker and more liable to disease. The walking among the Potatoes to gather the Peas also injures them. In fact, the system has been abandoned in most places.—F. W. LATHAM.

**Potato planting.**—Having been experimenting with autumn-planted Potatoes *versus* spring-planted ones, I would like to record my experience, which may be of some little interest to your readers. In October, 1879, I planted a small square of ground with Rivers' Royal Ashleaf Kidney, as my employer had been remarking to me what good results could be got from planting at that period. I planted the lines 2 ft. apart and the sets 10 in., and early in March planted the same variety in a similar warm position. As to results, there was little perceptible difference, and I did not take such particular note of the quality and return as I had intended, so I resolved to look more to results the following season. As we had a lengthy time of damp weather and very early and severe frosts, I delayed planting last winter till a mild change in December took place. On the 9th of that month, everything being favourable for the work, I planted a considerable portion of an early border with the above variety, the sets being planted about 9 in. in depth. On February 23 I

planted a remaining portion of the same border, the sets being put in about 6 in. deep. These came rapidly and regularly through the soil, while the winter ones were fully a fortnight later in making their appearance, and for some time the growth was very irregular. The spring sets kept the lead and quite out-matched the others in growth. I began to lift tubers about June 8 from the February sets, while those of December planting were not fit for table till ten days later. The crop also was a third less, while the most important part (the quality) was greatly inferior to the other. I have therefore come to the conclusion that in this damp climate at least results are totally against autumn planting.—R. BLACKSTOCK, *Golden Grove*.

**Forced Swede Turnips as a substitute for Seakale.**—Mr. Ward, the gardener at Little Arton Hall, near Walsall, uses forced Swede Turnips instead of Seakale. He selects the roots and treats them just as one would Seakale, and they throw up a crown of stalks just as the Seakale does, and when about 1 ft. long they are cut, and any tips of foliage removed, and when cooked as Seakale is and served with white sauce, they proved an admirable substitute. Mr. Ward grows the Swedes in his Mushroom house. Any one sceptical as to the merits of the Swede cooked in this way should try a few. Others who have made the venture speak in high praise of the Swede-tops.—R. D.

**Scarlet Runners.**—These are flowering most profusely, and where there are in this locality large breadths, the bloom furnishes an ample supply of honey for the bees. The largest piece I have seen is one of about eight acres, and it presents quite a blaze of colour. If frosts do not come early we shall have an abundance of Beans till late in the autumn; even if not another flower expanded there would be almost enough to carry the season through. The pods are fine and clean, and cut up exceedingly tender. No more valuable late summer and autumn vegetable can be had, and so abundant is the market crop that growers say they fetch next to nothing in the market. Though all winter greens are late, they are making rapid growth, and the supply will be ample presently.—A. D.

**Winter salads.**—Where there is much demand for green or blanched salads in winter and spring, a good breadth of Brown Cos and the hardy Cabbage Lettuce should be got out without delay; also Endive, both plain and curled. A border with a sharp slope to the south is a good situation on which to plant them, as it catches all the sunshine possible, and drains away all superfluous moisture quickly, and as the plants get ready for use they may be transferred to cold frames, or protected by means of dry Fern or some similar light covering. Curled Chervil should be sown at the foot of a wall or in temporary pits where it can be covered before snow occurs. Radishes may be treated the same after this date; and as soon as the old shoots of Tarragon begin to wither at the tops, a few roots may be lifted and potted to produce green shoots as required. Celery must be earthed up on fine days as it progresses in growth; winter Cucumber will be now making rapid growth, but as long as a supply is procurable from pits or frames the young ones intended for winter supply should be regularly divested of all flowers and fruits as soon as they appear, so as to concentrate the strength in the plants, in order that they may bear freely in the short, dark days of winter. Beetroots will now be fit for use, but should not be stored too soon, for Beet is moderately hardy and will stand a few degrees of frost without injury. Autumn-sown Onions will now require hand weeding and keeping the surface soil frequently stirred. Mustard and Cress must now be sown under glass, for the quicker it grows the milder in flavour it will be; a box sown about twice a week will keep a daily supply going, as it is generally in great request.—J. G., *Linton*.

**Fertilising Cucumbers.**—"Gulielmus" (p. 251) seems to think that it was fertilisation

that gave him a good crop of Cucumbers. I doubt, however, if one grower in a hundred would resort to that practice, even if their Cucumbers turned yellow and shrivelled up. They would know that something wrong in the treatment caused such results, and would alter their system until they had set matters right. I think I am within the mark when I state that where one Cucumber is fertilised a thousand are not. Growers who understand Cucumber culture well do not adopt what is looked upon as unnecessary labour. Better shaped fruit are obtained from non-fertilised flowers than those that are artificially fertilised. At least such is my experience, and we seldom miss a day in the year without cutting a fair supply. J. GROOM.

**Twin Cucumbers.**—Mr. Jabez B. Jones sends us a photograph of what appears a large specimen of this not unusual malformation.

## THE FLOWER GARDEN.

### PRIMULAS AT REST.

THE summer treatment of Primulas is a puzzle to most, and, I believe, more plants are lost in summer even than in winter. If you keep them too dry they are attacked by red spider with fatal effect, just as they will damp off if kept in a close situation. We have tried several plans this year, and of all these I find the best has been to plunge the pots after the flowering was over, and without repotting, in our artificial peat moss in the wood, where they are shaded morning and evening by lofty trees, with clear sky overhead, but enjoy bright sunshine from ten to three, and all the while are kept moist and cool, without any care or attention. The Himalayan Primulas have made grand crowns and vigorous foliage in this way, and especially is it so with *P. rosea*, whilst *P. capitata* carries finer trusses of its lovely flowers here than in any other situation. This, then, is, I believe, the best method of cultivation in the summer season. Another lot of plants we plunged in shady situations in the dry borders; these have not done so well, but the crowns look ripe, and they are healthy. They have, however, lost most of their foliage, and many have suffered from red spider. Another batch we planted out in well prepared soil in a frame, and have kept them a good deal covered during heavy rains. They look well and have strong crowns, but a good many have damped off, especially *P. luteola*. I think the stagnant atmosphere of a frame has not suited them. Altogether we have done fairly well, and shall carefully note which plants come best through the winter, and which flower best in the spring. I am not at all clear that Primula crowns require ripening as other plants do. Our Polyanthuses have also been experimented with. Some were planted out early, and others were allowed to remain pretty dry in their pots throughout the summer, and were planted out quite lately. The former made new growth and were in due course attacked by red spider during the hot weather, and they now cut but a sorry figure, although they have good strong crowns and are healthy. We have lost very few, and most of these by slugs and white grubs. The other batch, which passed the summer in confinement, are looking splendidly well and in capital foliage, and they have escaped both spider and snail, so that of the two systems I shall follow the latter in future. In Polyanthuses at any rate I do not believe in early potting. If your plants are healthy you may leave them alone, and if you wish to exhibit you can pot them three or four weeks before the show and they will be all right. Indeed, I believe it will be found best to grow them in the frames, planted in the ground through the winter, and



to pot them in the early spring. The chances of survival will certainly be greater in this way.

Our Auriculas are in capital order, and we have as yet very little bloom—only one plant—Acme so far; and it seems in the nature of this fine sort to sport in autumn. The Auriculas were potted very late this year, and I still believe this is the best course to follow. We have been badly troubled by a white grub, the larva of some insect, which eats away unperceived, and often with fatal effect. I hear some of the Yorkshire growers are much plagued with the mealy bug, but we appear to have none of this scourge in Lancashire. Our Auriculas have been kept through the summer in a frame, supported at the corners on bricks, thus allowing a free current of air about the plants. I think this is a good plan. Some of the best Auriculas have

mass, or it might be carefully associated with other suitable plants. It is a very vigorous grower.

#### NOTES ON THE FLOWER GARDEN.

**Carnations from Paris seeds.**—Allow me to inform "J. H." (p. 300) that neither Carnations nor Picotees raised from such seeds would be of any value in the estimation of a florist, but they would probably be useful as border flowers. That "potting makes Carnations and Picotees delicate," is, I think, rather a hasty conclusion. I find that many varieties will not succeed out-of-doors at all, and if we did not grow them in pots we would lose them. They are constitutionally delicate, and it would be a mistake to say they were made so by being grown in pots. They are placed in pots where they remain all the winter exposed to frosts, the lights being open night and day, except during the very severe weather. In

spikes of small leaves, no bigger than Thyme leaves.—ED.]

**Aquatic plant growing** (p. 289).—The soil they require is heavy clay and mud from the bottom of a ditch or pond, and on the top of that a layer about 3 in. thick of old manure or leaf-mould. The Nymphæas should be about 2 ft. 6 in. deep, and the Aponogeton 1 ft. 6 in.; Callas about 1 ft.—FRANK MILES.

**Cyclamen hederæfolium album.**—This is now beautifully in flower. A large bulb of it many years old which we last season planted in a nook on the rockwork border is now covered with hundreds of flowers. In such a position it seems quite at home, and when once planted cheers one for many years with its pretty foliage and still prettier flowers.—J. G.

**Androsace coronopifolia.**—This is, I believe, a biennial. As the plants went out of bloom we planted them carefully in a wooden box 2 in. deep, filled with peat and silver sand, and allowed the seed to fall thereon in a cool greenhouse. We have hundreds of young plants already, which will be transferred into small pots and kept in a cold frame until spring, when they may be planted out.—BROCKBANK, *Didsbury*.

**Colchicum speciosum.**—We have quantities of this now springing from beds and borders that have been sown down with Grass. Its pink flowers look pretty at this season peeping through the verdant turf, where they do not get splashed or soiled by heavy rains. As a proof of how well they do on Grass, I may mention that in some meadows they become a troublesome pest, requiring much labour to eradicate them.—J. G.

**Hydrangeas in autumn.**—Mr. Groom's remarks on these (p. 237), will have been read with interest by many. Here the display made by them just now is the finest we have yet had. Here and there around the margins of shrub beds they have a grand effect, and isolated specimens on the Grass are equally fine. The largest plants in the latter position are bearing from 700 to 800 heads of bloom, and each cluster is about the size of the crown of a man's hat. Anything more showy can hardly be imagined.—J. MUIR.

**Agapanthus umbellatus,** with its lovely blue Lily-like flowers, is now in good condition plunged on the Grass. I do not think it safe to trust it out all the winter without protection, but it winters well in any glass structure, and flowers best when it gets rather pot-bound. A. umbellatus albus, the white variety, makes a good contrast with the above, and the variegated-leaved sort makes a good edging for groups of the white and blue. It is also a good fine-foliaged plant for a cool house in winter. Tritoma Uvaria is now making a fine show; it looks best against a background of dark-leaved shrubs, and continues flowering until checked by hard frost.—J. G.

**Hardiness of Tuberous Begonias.**—We grow here several hundred seedlings every year, and they are planted out. Last year one row of plants planted in the kitchen garden in good rich soil was not deemed worth saving, and the roots were left in the ground. This place is high, and we had several nights in succession during the winter below zero. I was surprised therefore to see a perfect row of plants start into growth at the proper season this spring. It is quite true, however, that some others planted out from pots after they had started proved less hardy. We have a large number of Begonias this year planted in the borders which have bloomed continuously all the summer, and while the wet has quite spoiled the zonal Geraniums, the Begonias have scarcely lost a bloom, or suffered from the violent rain storms that we have had.—O. S.

**A pretty ornamental Grass.**—Than the slender, graceful, nodding purplish panicles of this somewhat new ornamental Grass, *Apera arundinacea*, we scarcely know anything prettier in their way, not even the feathery plumes of the Stipas. Examples of it might have been seen in Messrs. Rodger, McClelland, and Co.'s collection at the late show. It is quite hardy, and pretty in the border, and for decoration of the flower-stand or vase it is about one of the most desirable



The Caucasian Scabious (*Scabiosa caucasica*).

large families this year, especially Geo. Lightbody, Acme, Topsy, Ellen Lancaster, and others of the very best sorts. Frank Simonite, sent out last year, promises to be very prolific.

*Lrockhurst, Didsbury.* WM. BROCKBANK.

**The Caucasian Scabious** (*Scabiosa caucasica*).—This is one of the handsomest hardy perennials we possess, and one which should be grown by everyone, if only for the sake of its flowers for cutting, a use to which they are particularly well adapted, as they last a long time in water, and their peculiar soft lilac-blue shade is charming. It grows from 1½ ft. to 3 ft. high, forming a spreading dense tuft, thriving well in any open place in ordinary garden soil. It is a plant that stands almost alone in its beauty and character, and it does not say much for our gardening taste which leaves such a noble plant to the chances of the mixed border. It would make a beautiful group or

April they are placed out-of-doors, so that all through the growing period they are freely exposed to light and air, and are in no sense coddled, which would doubtless make them delicate.—J. DOUGLAS.

**Aquilegia fragrans.**—Can anyone tell us where this is to be obtained true, really fragrant scented? I have bought it wherever offered, but have hitherto failed to obtain it true; neither does it come true from seed sent out as A. fragrans. I am afraid the true variety has emerged into the general hybrid vulgaris, and that it is lost to us like the true A. glandulosa. If any of your readers can help me to find it again I shall feel obliged.—BROCKHURST, *Didsbury*.

**Monstrous Foxglove.**—A plant of Foxglove in the garden here instead of flowers has produced the extraordinary growths, a specimen of which I send you as a botanical curiosity.—ROBT. C. BROWNE, *Browne's Hill, Carlisle*. [It is a very curious freak—short panicles composed of



things to grow. The panicles are, too, as persistent as they are pretty.—*Irish Farmer's Gazette.*

**Asparagus plumosus nanus.**—I am not surprised to hear that "Cambrian" (p. 291) is so well pleased with this charming green-leaved plant. It will grow in the open air in summer and in the greenhouse, intermediate house, and stove all the year round. I grow it in equal quantities of loam, leaf-soil, and peat, with a small quantity of silver sand. With me it never grows higher than from 10 in. to 15 in. No Fern can approach it in beauty. It is evergreen, and for cutting for a lady's head-dress, decoration of vases in sitting rooms, or for bouquets and table ornamentation there is nothing green so lovely. I had this charming plant sent to me from America some four years ago, and I have now a fine stock of it which I intend using in the flower garden next year.—**RICHARD NISBET, Asbury Park.**

**Pansy Golden Perfection.**—This is a comparatively new variety and one that is not yet generally known. It was sent out as a bedding variety, and fully bears out the raiser's description of it. The flowers are large, of a fine shade of yellow with a black blotch in the centre; they are also produced in great abundance throughout the summer. The habit of the plant is nearly perfect, for although the growth is vigorous it is compact; and what renders this Pansy of especial value is the fact that it exhibits but little distress during long periods of hot dry weather, the flowers coming as large and well formed as during the spring months. Those who may require a good yellow Pansy for bedding purposes will do well to bear this one in mind, for it is certainly one of, if not, the best of its kind.—**J. C.**

**Early flowering Chrysanthemums.**—The early flowering Chrysanthemums are a class of plants which are most useful either for garden or conservatory decoration, producing an abundance of bloom from August till November. A few planted in the mixed borders of a garden will help greatly to bridge over a time when flowers begin to get scarce, and will be found far more serviceable than the later varieties, which are often destroyed by the autumn frosts. Cuttings should be struck about February and rooted quickly. When rooted, pot singly, and when the plants are about 5 in. or 6 in. high, pinch them back, which will cause them to throw out side shoots, which in turn should also be pinched when about 4 in. long, and continue doing so till the end of June. Cuttings struck later (about end of April or May) will make good plants for affording cut blooms for indoor decoration. The following will be found a good collection; *Adrastrae*, reddish purple; *Casey*, rosy lilac; *Chromostella*, orange tipped red; *Delphine Caboche*, reddish mauve; *Durham*, yellow; *Frederick Pelé*, bronze red; *Gold Button*, small, canary yellow; *Golden Madame Damage*, golden yellow; *Hendersoni*, yellow; *Illustration*, fine light pink changing to white; *Jardin des Plantes*, white; *Jardin des Plantes*, yellow; *Little Bob*, maroon red; *Mme. Pecaull*, fine deep rose; *Nanum*, creamy blush; *Precocite*, orange yellow; *Souvenir d'un Ami*, fine lay white.—**W. E. BOYCE.**

#### AQUILEGIA GLANDULOSA.

IN your "English Flower Garden" department (p. 312) you quote some remarks of mine on this plant, and repeat a typographical error by making me refer to the *Forres* variety as *A. glandulosa secunda* instead of *jucunda*. The *Forres* variety is believed by Mr. Thompson, of Ipswich, to be *Aquilegia glandulosa jucunda*, a dwarf growing variety, and the seeds supplied by him under this name, and which have flowered with me this year, are identical with the *Forres* variety, but I do not consider them to be the true *A. glandulosa* of Regel. Since writing the note which you quote I have been in correspondence with Professor Regel, and am sorry to find that the original variety which was introduced from the Altai Mountains in 1822, and of which the typical specimen is to be seen at the Royal Herbarium at Kew, is now also lost at the Botanic Gardens at St. Petersburg, so that I am afraid it is at present not in cultivation.

Mr. Thompson, of Ipswich, is, I believe, endeavoring to obtain seed again from its native habitat.

If any of your widely-spread circle of readers should happen to find it on the Altai Mountains, I hope they will not forget that it is wanted; and if anyone has a plant which he believes to be the true variety, we shall be glad to hear of it. We have here a plant which was obtained some time ago (I believe from the York Nurseries) as *Aquilegia glandulosa*, and which answers exactly to the botanical description, only it is a dark self purple. It is very probable there are such varieties as well as the beautiful blue and white sorts.

*Brockhurst, Didsbury.* WM. BROCKBANK.

**HELIANTHUS GIGANTEUS.**—Mr. Kingsmill sends us flowers of this, which he praises very highly, but they are small and do not seem to be any improvement on a great number of composites of like character. A world of yellow composites only would be a sad place in bad times. No such plant should be grown in any garden that is not really beautiful and distinct. The power they have of exhausting good soil and robbing choice plants of nourishment is immense; therefore if we get the best effect of which they are capable from several good types, such as *Helianthus rigidus*, and the taller perennial Sunflower, we get all the good effect of which the race is capable.

**Begonias for bedding.**—Last year I noticed at Isleworth a quantity of seedling Begonias bedded out, which did so well, making a very bright bed of the richest scarlet, that I was induced to try them here this season. In spring I prepared some beds near the entrance to this nursery with loam, well decayed manure, a little leaf-mould and sand, in which I planted out about the first week in June small plants 1 ft. apart from a batch of seedlings of last year, which had been carefully selected for the beauty of their flowers, bright colours, and good habit. They appeared to be very slow in starting into growth, but after a few weeks when they had got firm hold of the soil, they began to make rapid growth, fine foliage, and shapely plants, which have been a mass of bloom up to the present time, and exceedingly attractive. I can heartily recommend them for bedding purposes. A bed of them of good size, deeply edged with silver *Pelargonium* or *Centaureas*, would, I imagine, have a striking appearance. Clumps of them in herbaceous borders also would look well. As in the case of most gross-feeding plants, I find they like, and should have, liberal supplies of manure water when in full growth; they should also be neatly supported with sticks and tied out a little.—**G. CANNON, Lee's Nursery, Ealing.**

**Lawns in autumn.**—A well kept lawn is always attractive and pleasant. In spring and early summer when the Grass is growing close and green, frequent cuttings with the mower keep it in excellent condition, but about this time of the year it is not so easily kept in good order. Worm casts make their appearance, and when these are run over with the roller or mower they spread out and become unsightly; especially is this the case in wet or showery weather, and those who are desirous of having their lawns look well as late in the season as possible must now give them a good deal of attention. On dry days there is often pressing work to be done in other parts of the garden, and the Grass is very liable to be attended to on a rainy day, and it is just then that its improvement is most difficult. Where lawns are wanted to look well after this time of year the cutting and rolling of them should only be done on dry days, and before proceeding with either of these operations all worm-casts and other rubbish should be swept off. When under this treatment it is surprising how well lawns may be made to appear until December or later. The Grass does not, of course, grow so freely now as earlier, and this is fortunate; a constant running over it now does not improve it. Tree leaves, now beginning to assume their beautiful autumn tints, will soon be on the ground, and worms draw them into the turf; therefore, if not swept up frequently they

become difficult to remove, giving the lawn, if left, a ragged appearance long before it otherwise would have. **J. MUIR.**

**Rudbeckia virginiana.**—Mr. Moore, of Glasnevin, writes favourably of this species, which is somewhat near to Newman's *Rudbeckia*. "It never attains a greater height than 2 ft., whilst *Rudbeckia Newmani* is frequently more than 3 ft. high, and rather loose and straggling in growth."

**Lilium Leichtlini.**—Mr. Kingsmill says that he cannot understand Mr. Miles' difficulty with this plant, as with him it has flowered well and without any special attention.

#### AUTUMNAL NOTES.

SHARP touches of frost in early mornings, making the lawns gray and the flowers to droop until the sun clears all traces of it away, warn us the winter is coming and that we must prepare for its approach. We have had so much rain this autumn that flowers have been few, and many of these not so fine as usual. The last week of fine weather has brought the blossoms out wonderfully, so that we look very gay with the red *Phloxes*, white *Anemones*, *Honorine Jobert* and the pink *japonica* mixed with the scarlets of *Glaudiolus Brencleyensis*, and solid clumps of *Geum coccineum*, single and double. These plants make a grand line in a mixed border, and should be grown largely for late blooming. Then for gaudy yellows the *Rudbeckias*, *Heleniums*, and *Coreopsis* are in grand form. I never saw them finer than this season; the wet weather appears to have suited them. The *Gaillardias* do not make so much display, and have a more straggling habit of growth, but the flowers are very lovely and useful. *Verbascum Chaixi*, with tall spires of lemon yellow, is a grand plant for late blooming; and as it sows its seeds widely and they come up like weeds and are transplanted at any stage of their growth, they are most useful everywhere. *Ilycinthus candicans* is proving itself a most valuable autumn plant, and when grown in groups of three or four it has a beautiful effect. The *Tradescantias* are also both beautiful and interesting, and there are now several varieties of white, light and dark blue, and reddish purple, both single and double. *Primula capitata* is still in flower; we have a good deal of it, and it blooms constantly for fully half the year. This promises to be the most useful of all the *Primulas* for the garden. It is easily raised and seems to grow anywhere in shade or sunshine, but I think it will have to be wintered in the cold frame; it is too valuable to lose by carelessness, and worth all the trouble you bestow upon it. The *Lobelias* are very beautiful at present. *L. cardinalis* is now to be had in every shade of scarlet, and the *L. syphilitica* group, which are most vigorous growers and profuse bloomers, supply pure white and every shade of purple, from the blue to the deepest and richest clarets and violets; they are tall growing plants, and soon make good solid clumps if left alone. Our old friend *Rosa rugosa*, which was the first to flower, is still blooming away, and is at the same time dotted over with its rich coral-like fruits. It would be well if our rosarians could impart the vigour of this Japanese Rose into our more tender and fleeting English sorts. We have nothing to approach it either for vigour of growth, hardiness, or constancy of flowering, and it appears also to be proof against the aphids and every other garden pest. The *Myosotis Imperatrice Elizabeth* has also flowered constantly throughout the summer; this is the best of all the summer Forget-me-nots, and its deep blue or purple colour is a valuable change upon the older sorts, of these the variety *azurea grandiflora*.



flora is the most useful for summer and autumn blooming. On the rockeries the *Dianthus*es are still gay, and *Androsace lanuginosa* is yet in bloom, having flowered constantly from May until now. *Primula cortusoides* has been very busy with a second crop of blooms this year, and there is a good many of the double *Primroses* in flower again. Several of the *Gentians* are also in full flower, amongst which *Andrewsi* and *pneumonanthes* are most interesting. *Veronica subsessilis* and *corymbosa* are very beautiful. Of the prostrate sorts there are several, of which *Blue Gem* and *V. incisa* are good. *Sedum Brauni* and *Fabaria rubra* make a good show, and *Lythrum Salicaria* and *Erodium Manescavi* are good crowning plants of bright purple. Many of your readers who have followed these notes through the year may be interested to know the list of plants with which we had the honour of winning the Veitch medal and prize for 50 alpine and herbaceous plants at the Manchester show, a fortnight since. They were as follows: *Aster dumosus*, *Pyrethrum Le Dante* and *Progress*; *Delphinium cashmerianum*, *Belladonna*, and a dark seedling; *Hyacinthus candicans*, *Geum coccineum fl.-pl.* and *aurantiacus*; *Verbascum Chaixi* and *phoenicum*; *Liatris spicata*, *Leptandra virginica*; *Veronica corymbosa* and *longifolia subsessilis*; *Echinacea intermedia*, *Rudbeckia Newmanni*, *Coreopsis grandiflora*, *Hypericum proliferum*, *Oxalis floribunda*, *Silene Schafta*, *Scutellaria Wrighti*, *Statice Gmelini*, and *incana nana*; *Primula capitata*, *Lobelia syphilitica*, *Milleri*, and *cardinalis*; *Mimulus cardinalis*, *Gentiana Andrewsi* and *Pneumonanthe*; *Gailardia grandiflora*, *Campanula azurea*, *Sibthorpi*, and *carpatia*; *Nertera depressa*, *Corydalis lutea*, *Acæna macrophylla*, *Androsace lanuginosa*, *Sedum purpureum*, *Helenium Bolanderi*, *Anemone japonica* and *Honorine Jobert*; *Lilium superbum*, *Phlox aurantiaca superba*, *Linaria pallida*, *Eulalia japonica variegata*, *Semprevivum triste*, *spinosum*, and *Heuffeli*, and *Saxifraga longifolia vera*. BROCKHURST.

Didsbury.

#### NOTES FROM NORFOLK.

**Large-flowered Butterwort** (*Pinguicula grandiflora*).—To my mind this is one of the most beautiful of our bog plants, its flower being such a lovely blue and the leaves so peculiar in form. Mr. Hemsley is wrong in saying "but it does not grow either in England or Scotland, and only in the south-west of Ireland." I presume he means truly wild. I may mention, however, that there are hundreds of it growing in a bog a few miles from Penzance. I could give the precise locality, but I am afraid it would soon be uprooted if I were to do so. It was introduced there from Cork over 30 years ago by Dr. Ralfs. It has increased rapidly, and long may it enjoy its solitary home amid *Sphagnum* Moss to delight botanical rambles and true lovers of Nature; and may the very first person who goes with the intention of uprooting it sink into the slough of despond. A friend of mine grows this little gem in a common saucer of damp *Sphagnum* Moss in his library window, where it flowers every year remarkably well. I tried once to grow it in heat, or rather under a bell-glass in an unheated house, but the stalks got miserably wire-drawn, and the plant did not flower nearly so well nor yet sooner than in its native habitat.

**Hardy Heaths.**—I am glad to see Mr. Deniscalling attention to this charming class of plants. He mentions our lovely Cornish Heath (*Erica vagans*). I doubt whether he has seen so much of it as I have, unless he has paid the Lizard a visit. Ah! there it grows by the acre. The very mention of it puts me in mind of a few delightful days which I spent there last summer, and I remember well standing upon a slight hill where I had an extensive view of it. Just fancy seeing scarcely

anything around you but this one plant in bloom! I noticed several variations in the colour, such as white, &c. The common cross-leaved Heath (*Erica tetralix*) when cultivated is by no means inferior to many exotic varieties. Its delicate rose-coloured flowers are very lovely. W. ROBERTS.

Deringham, Norfolk.

## GARDEN IN THE HOUSE.

### WEDDING AND OTHER FLOWER DECORATIONS.

THE decorating of wedding cakes with natural white flowers has become quite *de rigueur*, as well as for the favours generally distributed from some light ornamental basket by a child-bridesmaid or member of the wedding party; and thus the last *souppon* of tawdriness has vanished from these festivities. Coquilles of handsome lace, silver lace, or fringe are sometimes used to fasten on the spray of Myrtle, Orange blossom, white Roses, Heather, *Stephanotis*, or *Lilies*, which is provided with a pretty silver fastening pin. Cordons of bridal flowers, worn round the neck or across one shoulder, are much affected of late. At a recent wedding, the favours distributed to attendants, &c., were all of natural flowers, arranged by the deft fingers of the bride, and composed of white Pinks, large-flowered white Clematis, and sprays of Lemon-scented Verbena. In the absence of Ferns, this latter is particularly to be recommended to mix with white flowers, not only for its delicious scent, but also for its delicate tender green. Clematis, Jessamine, and creeping Myrtle furnish pretty light sprays. The most useful varieties of white-flowering Clematis are *Duchess of Edinburgh*, double; *Henry*, cream; *Indiana*, *Lucie Lemoine*, *montana* (sweet-scented), *Mrs. Quilter*, *Reine Blanche* (fringed), and *Traveller's Joy*. Nothing can surpass the scented starry blossoms of the *Jasminum grandiflorum*. Creeping Myrtle, also, is a good decorative plant, and, if trained on strings, should for festooning purposes be cut with the latter. It lasts a considerable time when cut, and is much to be recommended for personal and other decorations for weddings.

In floral cake decorations it is advisable to graduate the size of the flowers and foliage to the tiers of the cake; thus, in the absence of rarer and costlier hothouse flowers, Ferns, and foliage, we recommend the following method, successfully carried out with simpler garden and greenhouse specimens. The first or lowest tier, a thick border of pure white Roses, *Guelder* Roses, large white Lilies, tree Carnations, white Irises, Dahlias, Hollyhocks, Asters, trusses of white Phlox, &c., laid in a fringe of Ferns, Norwegian Moss, *Lycopodium*, &c. The smaller Liliputian or bouquet variety of white Dahlias, white *Gladiolus* blossoms picked off the stems, small varieties of Lilies, *Lily of the Valley*, small white Pinks, striped Hollyhocks, *Chrysanthemums*, *Bouvardias* (amongst which *Humboldt*, *Davisoni*, *jasminoides*, and *Vreelandi* are among the best for the purpose), along with many other white flowers too numerous to mention here, can be arranged on the next tier or tiers, slightly lightened with Maiden-hair and other light Fern fronds, Mosses, &c. *Syringa*, Orange blossom, Myrtle, white nosegay *Pelargoniums*, Indian and native Azaleas, Clematis, Jasmine, white Heather, white single and double zonals (amongst varieties of which are especially to be recommended *Bouquet Blanc*, *Apple Blossom* suffused with rosy pink, *White Clipper*, *Dame Blanche*, *George Sands*, and *La Candeur*); amongst the silver-variegated, *Mrs. J. Mappin* and *White Lady*; amongst the Ivy, *Duke of Edinburgh*, *Mme. Emile Galle*, and *Sarah Bernhardt* are all applicable to the higher and top

tiers; a crown of Myrtle or Orange blossom, with a slender-stemmed glass, crystal, or silver specimen glass, containing some Feathery Ferns, finishing the top of the cake. *Anemone japonica*, white Phlox, Rocket Larkspur, all varieties of Asters, Poppies, and Liliputian white varieties of tuberous Begonias, double white Primroses, white varieties of *Campanulas*, Stocks, small white *Ranunculus*, small white Roses, single and double Tuberoses, dwarf varieties of Roman Hyacinths, *Hoteia* (*Spiræa*) *japonica*, *Smilax* or Creeping Myrtle, can all be pressed into service.

**Sizes.**—If enough blossoms of one kind are procurable, good effects can be obtained by using them in graduated sizes, mixed with greenery, both for table and cake decorations. Pure white Roses, Pinks, and Lilies are amongst the favourites. Fruit blossoms, as Apple, Pear, and Strawberry, the leaves of the latter being especially decorative, are often used. The earliest runners of a Strawberry bank can be potted and forced for this purpose, leaving the latter for fruiting. Large white American Bramble blossoms, white wild Roses, and Cherry blossoms have been used with good effect. Rose decorations have been lately adopted in a variety of ways at weddings, &c. In one instance the centre of the table was an oblong bank of white Roses and Mosses, a crystal dish piled with rocks of ice being partly sunk into this. From its centre sprang a slender stem, supporting a feathery falling bunch of exquisite Grasses and Ferns; cordons of Roses meandered all over the table, inclosing dishes, plates, &c. At another chased silver bowls filled with exquisite specimens of *Reine Blanche*, *Perle Blanche*, and *Madame Vidot*, pure white varieties, were placed in a double row along the table. The centre was taken up by three silver epergnes with graduated tiers, the tallest in the middle, filled with the same choice Roses, with a shower of drooping Ferns falling over them. Another arrangement were tall white Lilies, in silver trumpet-shaped water-stems, standing on a carpet of Mosses and Fern fronds. The same idea was carried out everywhere in the room and house against a background of plummy Ferns and Grasses. In the hall a fountain was margined with Mosses, Palms, and water plants, and under the fine spray of the fountain stood a group of tall white Lilies. The bridesmaids carried Lily stems, and the cake was smothered in Lilies. For a series of small round tables, chaplet or ring arrangements of white Moss Roses were adopted; whilst at yet another, red and white Roses, of the most perfect and contrasting specimens, were arranged in baskets, standing, hanging, fastened to the walls and mirrors, suspended over the entrances, floating over the tables flanking the side tables in graduated wicker stands.

A large gipsy tripod, with the usual hook and basket suspended from it, stood in the middle of the hall. The basket was overflowing with red and white Roses, a crown of each hanging over the top where the three supports met. These were hung with small coloured lamps in the evening, a circle of the same surrounding the moss and grass base, having a most fairy-like appearance. Another exquisite arrangement for a fête were small goblets scattered all over the tables, containing each some perfect specimens of that lovely salmon-pink Rose, *Souvenir de Poitou*, and a very favourite yellow *Noisette*, *Madame Caroline Kuster*; a bark of these Roses, clustered into moss foundation, in the centre of the table. The same was repeated everywhere—a pretty wicker wheelbarrow laden with Roses standing in each window. Hanging baskets and pots with Clematis (white) were the only other plant introduced.

Another bridal decoration, at a very private Anglo-French wedding, were late-forced



Strawberry blossoms, relieved with their own graceful leaves. Clusters of fruit, green and red leaves of the same formed the room decorations, whilst the table and cake bore only the blossom and green leaves. Bank-shaped decorations of Roses look well, shaded from the darkest scarlet, dashed with purple-black to the palest salmon-flesh specimens, or from the deepest cloth of gold and canary to cream and paper white. Plateaux for dishes, lights, &c., are arranged in the same manner thus. In yellow and crimson Noisettes, the peerless Maréchal Niel and Eclair de Jupiter are great favourites, and justly so. Amongst the white climbing Roses, *Félicité Perpetuelle*, *Banksiflora*, *Donna Maria*, *Princess Louise*, and *Rampant* are much to be recommended. Amongst the pink ones, *Inermis*, *Weeping Boursault*, and a great many of the yellow Banksian. Amongst the autumnal Roses for decorations the *Perpetual Moss*, flowering from June to November, are adapted for decorations of tables and rooms. *White Perpetual* has handsome buds, well mossed, and looks lovely for button-holes, bridal decorations. Laid on white velvet stripes, Moss banks grouped in specimen glasses and forming light cordons, for other purposes this Rose has an unequalled effect. Amongst the red, *Madame Edouard Ory* and *Souper et Notting* are full, good coloured, hardy late bloomers. Carnations have gained great favour amongst decorative flowers, all shades of dark crimson, vivid red, salmon, white, and flesh being mixed or adopted separately. At a fête given at a French chateau, where the pair to be married appeared for the last time before their wedding, white and crimson Roses, white Lilies, and *Passion Flowers* composed the decorations, with a most happy, but touching effect. Some time lately, blue flowers, although by art consent ineligible, were used with great effect. The combination was *Myosotis* of the most perfect growth massed in bowls, baskets, and plateaux of pink Bohemian glass, and silver and silvery-red satin, trimmed with silver lace. Only real lights of pale pink were used for lighting purposes. At a racing luncheon, where Oxford and Cambridge favours were divided, dark blue *Salvia* and *Myosotis* were arranged in ribbon style with excellent effect. The napery was all cream-coloured, to avoid a startling effect, and the glass cream ground with white frosting. Dark ruby-coloured Bohemian glass bowls looked well at another fête, filled with alternate pure white and bluish or fawn pink Roses on the whitest of damask cloths. Another decoration in a room where brown shades predominated were blossoms of soft citron colours with very dark greens. Pyramids of Citrons and Lemons were most artistically arranged.

**For harvest season table decorations,** Corn in all stages of ripeness can be used with flowers and fruits. Tiny scarlet Poppies and the real Kornblume of the German Kaiser are excellent mixtures. Barley, in the half-ripe state, is a capital background for colour, the soft semi-greens and yellows showing off well any other colour; wreaths, tiny sheaves as menu-holders, fringes sewn to overlays, which ought to be rich crimson, violet, or purple, are easily carried out. The tiny sheaves are tied with bright ribbon. Wicker cornucopia, wall brackets, and ornaments are specially adapted to this style, filled with fruit, corn ears, &c., the common late blossoming white Clematis being used to lighten the effect. Purple and white Clematises, *Passion-flower* and fruit, *Virginian Creepers*, &c., all come in now. An excellent effect of mauve shades can be obtained by banks of the common Scabious and the rich purple late Stocks. All the grey and silvery foliage plants come in well with vivid reds, blues, and yellows. The glossy changing foliage of the Berberies and clusters

of Mountain Ash berries, Sloes, and American Blackberries, which have fruit and foliage often together, are welcome materials. When Moss or Ferns are not obtainable, Rush blossoms are feathery-looking and neutral.

**A lovely combination** we have seen lately was the brown Alpine Clover in pale pink pottery, tazzas, plates, &c. Another was the Austrian Brier Rose, of the bright copper shade so peculiar to that species. Pale blue and frosted glasses were used, and pale silver-blue satin, the effect being quite unique. Arrangements of dark brown-red Hollyhock blossoms look well combined with palest blue amber or citron. Purple with cream, mauve, and white, and shades of red and damask are most useful. The yellow and scarlet-fruited winter Cherry, grown in small pots, also comes in now, as well as autumn Colchicums; and the glorious decay of every leaf helps to brighten our rooms and tables.—*Queen.*

## THE GARDEN FLORA.

### PLATE CCCIII.—RHODODENDRON AUCKLANDI.\*

SOME years ago I wrote: "I would advise all Rhododendron lovers who do not know *R. Aucklandi* to lose no time in examining Sir Joseph Hooker's book, and, better still, to visit Kew in May, in which month *R. Aucklandi* is generally in bloom there." Those who followed this latter advice last May surely found their reward in beholding the glorious bush, which bore the flowers figured on the accompanying plate. In the temperate house a fine collection of Himalayan Rhododendrons flourishes under the care of Mr. Binder, a true lover of the genus, and among them all none surpass, and few equal, the species named by Sir Joseph after Lord Auckland, once Governor-General of India, but which the *Botanical Magazine*, later on, described as a variety of *R. Griffithianum* (Wight) (see tab. 5065).

I have examined in the Kew herbarium the specimens of *R. Griffithianum*\* (from Wight's herbarium, from that of the late East India Company, and from Griffith himself, the discoverer), and although the flowers and the foliage are ludicrously small in comparison with our plant and the *Aucklandi* specimens, yet it is impossible not to observe a close technical resemblance. The same may be said of the plate in Wight's "Icones." Whether this herbarium *R. Griffithianum* has ever been cultivated is very doubtful. I have never seen it, and my friend, Mr. Anderson-Henry, who has plants labelled respectively *R. Aucklandi* and *R. Griffithianum*, writes me that there is no difference between them. Further, it is extremely probable that all the plants which have hitherto bloomed in Europe are derived from Sir J. Hooker's original consignment of seed, for, although the species does not grow within British territory, I believe with Mr. Sykes Gamble, conservator of Indian forests (to whom I am indebted for seed), that it is very rare and difficult to come by. Hence, for present horticultural purposes, we may keep out of sight Griffith's inferior Bhotan plant, and also the tree 40 ft. high from which Mr. C. B. Clarke, the eminent Indian botanist, gathered specimens. With Sir J. Hooker this species is always a bush. He found it in two different localities at least, in Sikkim Himalaya in one with large flowers, in the other, "conspicuous for the abundance rather than the large size of its blossoms." Sir Joseph seems to have gathered his seed where the larger type prevailed. Nevertheless, the cultivated plants differ in certain

respects among themselves, although the difference falls very far short of what is observable in their native haunts. The corollas are not quite alike in size or colour; in some the calyx is green, in others pink; in some there is a strong and delicious scent, in others a scent said to be like May-blossom, and in others no scent at all (Sir Joseph describes the species as inodorous). The leafage is not uniform, and the brilliant red scales which ornament the rising leaf-shoot in some are not possessed by others. Moreover, some plants appear to have a strong tendency to abortive stamens.

Be all this, however, as it may be, there is no doubt, I think, that our plant, in its various forms, is one of the grandest ever introduced to cultivation. When it is stated that a single flower in a truss of six, seven, eight, or nine flowers is sometimes  $6\frac{1}{2}$  in. in diameter, the difficulty of conveying an adequate notion of its beauty in a plate of limited size will be understood. That the leaves are sometimes nearly 1 ft. long and copious does not lessen the difficulty. But even this does not exhaust the marvel. I have it under the hand of my friend, Mr. Otto Forster (who among his other achievements was the first to bloom *S. Nuttalli* in Europe), that in his winter garden at Angsburg a bush of *R. Aucklandi* bore in one season 122 trusses of its magnificent flowers.

Yet it is most appropriate that this and other Himalayan Rhododendrons should be described in connection with Kew Gardens under the presidency of the greatest of modern botanists. Those who have read that interesting and inimitable book entitled "*Himalayan Journals*" will know how in 1848 and 1849 Sir J. Hooker explored, under very great difficulties, regions before and ever since unvisited, and discovered a whole host of floral treasures, among which were our Sikkim Rhododendrons. Sikkim indeed proved a very nest of Rhododendrons—scarlet, purple, yellow, orange, white, scented and scentless, scaly and unscaly, in marvellous profusion, from the stately *R. argenteum* to the tiny *R. nivale*, from an elevation of 6000 ft. to one of 17,000 ft. Bhotan, which had been previously explored by Griffith, proved almost as prolific when ransacked by Booth. Would that both countries could be ransacked again. Meanwhile, Sir J. Hooker's magnificent plates in his "*Rhododendrons of Sikkim-Himalaya*," supplemented by those in the *Botanical Magazine*, introduce to a new world of floral beauty, of which the great proportion of the horticultural public are still nearly wholly ignorant.

Sir J. Hooker transmitted seed to Kew without delay, whence it was liberally distributed. The first to bloom was *R. ciliatum*, then *R. Dalhousiae*, in the wonderfully short period of three years. *R. Aucklandi*, from which I must apologise for wandering, required no less than nine years.

Since 1860 descriptions of the blooming of this species have from time to time been given. From Cornwall and Yorkshire, from Scotland and Germany, and elsewhere, men have written to say how the magnificent flowers have astonished and delighted them. Undoubtedly the greatest success was achieved by Mr. Otto Forster, as related above; but Mr. Anderson-Henry and others frequently bloomed the plant, while Mr. Boscawen induced his specimen to produce most glorious trusses in the open air at Lamorran, in Cornwall. At Kew, for many years past, *R. Aucklandi* has been a chief ornament and attraction offered by the temperate house.

Never, perhaps, has it been seen in greater perfection than in the plant from which this plate was taken. This plant is not a seedling, but a graft on *R. arboreum*, put on some few years ago. The stock does not appear to have

\* Drawn in the temperate house at Kew, 1881.











affected the scion, for the result is essentially a bush, not above 6 ft. high, and with a very floriferous habit. On blooming this year, for the first time, it bore no less than seven trusses. Its glossy green foliage was so striking that I had written about it as well worthy of a visit long before the blossoms appeared. Whether there would be any flowers at all this year seemed to me then very doubtful (the blossom and leaf-buds are provokingly alike). Mr. Binder, however, took a more hopeful view, and he was right. Early in May I received a kind note from Professor Thiselton Dyer, intimating that there was something worth my seeing in the temperate house, and so indeed it proved.

No description of mine or plate can do justice to the exquisite delicacy of the corolla or the grandeur of the truss. This may appear high-flown language, but much better pens than mine have indulged in unmeasured admiration. One well-known writer says: "It is difficult to find an adjective sufficiently expressive of the majestic loveliness of the flower." Sir J. Hooker calls it "this superb species." Mr. Otto Forster says that "nothing in the whole vegetable kingdom is more beautiful," and Mr. Anderson-Henry calls it the gem of his collection. The defects, if one may venture to say so, are perhaps the looseness of the truss and the insignificance of the stamens, which appear somewhat out of proportion with style, stigma, and everything.

The cultivation of Himalayan Rhododendrons, in spite of isolated successes, is still in its infancy. Not many in these hurried times have the patience to watch the gradual growth and eventual flowering of these glorious plants, and many, having begun, have wearied of the pursuit and turned to other subjects. A good deal of misapprehension, too, has contributed to this result. At first the plants were too rashly supposed to be altogether hardy; now they are as rashly thought to be wholly tender. The truth lies somewhere (it remains to be proved where) between; and I am glad to see that at Kew they are making fresh experiments (observe a bed recently planted near the Fern house). Some species undoubtedly, such as *R. Nuttallii* (I once lost ten plants by my rashness), *R. Dalhousiae*, and *Maddenii*, must have glass, but with the greater number of them it is not the severity of cold which injures, as I have proved over and over again with *R. Aucklandi*, but the early growth and the spring frosts. One mode of meeting the danger is by lifting and checking the plants in early spring, another by planting in backward aspects, and yet another by offering some slight protection, not from the cold, but from the sun and sudden thaws. A glasshouse without any heat is certainly the best, although a great deal may be done without glass; and any one who has seen the plants in their glory will admit that they deserve a little, or rather a great deal of, trouble. In truth, these are not subjects to be attempted by persons who have not energy and patience. The suitable aspect, soil, and treatment have still in many cases to be discovered, but there is this to charm away the difficulties: that these plants in a garden form a feature wholly unique; when they do flower well they create quite a sensation in the neighbourhood. Even when they do not flower, the foliage presents very great variety and beauty, and the crimson scales hanging round the young leaf-shoots of one variety of *R. Aucklandi* are well worth a day's journey. This allusion to variability in one respect leads me to express a hope that by selection of seedlings, and a wholesale practice of outdoor planting, we may arrive at even an entirely hardy form. In Sikkim our plant occupies an elevation of from 7000 ft. to 9000 ft., which is considerably higher than the average elevation occupied by *R. arboreum* and

its near allies. If *R. arboreum* has not been acclimatised, yet how much of its scarlet blood flows in the veins of our splendid and entirely hardy garden hybrids.

One word, then, on the present progress of hybridising. THE GARDEN figured in June, 1877, the beautiful blossoms of plants raised between *R. Aucklandi* and the hardy John Waterer, by Mr. Scott, at Lawson's, Edinburgh. One of this breed bloomed with me this year (some time ago they were parted with as of no value), and was, very justly, much admired. I have seen many of the same strain, the individuals of which differed in the size, colour, and perfume of the flowers. Mr. Luscombe has another strain, for he wrote to THE GARDEN in 1879: "Hybrid Rhododendrons are quite safe, especially some very fine white varieties from the Sikkim Aucklandi." Messrs. Standish have a third, and I possess a fourth, on all of which I have written elsewhere. There are said to be also hybrids between this species and *R. Thomsoni* and *R. arboreum* pure. These hybrids, so far as they have proved themselves, and I know, are fertile, so that by cross breeding among them, an entirely new race, as various possibly as in the case of hybrids from *R. arboreum*, may presently be produced. Let it be remembered that the plants which we now so largely cultivate of this latter strain are not plants of the first cross. I grow from sentiment, perhaps, and as a curiosity, *R. altaclerense*, the first hybrid raised from *R. arboreum*, but how miserably tender it is! The second quarter of the century was spent in improving upon this first essay, and we now enjoy the results. Similar efforts must be made with the offspring of *R. Aucklandi*, from which I have very strong hopes of seeing a race as celebrated and as popular as in the case of *R. arboreum*.

J. H. MANGLES.

*Valewood, Haslemere.*

## THE FRUIT GARDEN.

### FRUIT AT MANCHESTER.

"WELL," said a friend the other day, "after all there was nothing wonderful in the way of fruit at Manchester. No Pine equal to Mr. Sandford's 8½ lb. Queen shown at Manchester eight years ago, or to Mr. Hunter's bunch of Hamburg Grapes at Belfast, weighing 21 lb. 12 oz., or to the still larger bunches of Raisin de Calabre and White Nice, 26 lb., and 25 lb., at Edinburgh in 1875—statements quite correct; but if none of these unusual weights were eclipsed, or even equalled, there was something much more extraordinary and more gratifying, and that was the high standard of quality running through by far the greater portion of every kind of fruit shown. It was the high character of so much that was present that seemed to detract from the appearance of the best, just as a company of grenadier guards look collectively of less stature than they really are or would do if only some half-dozen were present in a crowd of ordinary sized men. The fifteen dishes of fruit shown by Mr. Coleman, which took the leading prize offered by the society, had not an inferior dish amongst them. The Grapes were all good, especially the Black Hamburg and Gros Maroc, the large even berries of which as black as jet were blue with thick bloom. This was the most striking Grape as far as appearance was concerned in the exhibition. The collection, taken as a whole, was remarkable for high colour—always a point in the exhibitor's favour. It is doubtful if Mr. McIndoe's second and Mr. Roberts' third prize collections have been equalled by any exhibitors who have before had to put up with the same relative positions. Mr. McIndoe's Black Grapes and his Peaches and Nectarines were all good, and Mr. Roberts' Madresfield Court Grapes and Peaches were particularly noticeable. The class for twelve dishes was also remarkably well represented. In the collection with which Mr.

Austen took the lead high finish was present throughout; his Grapes, both black and white, were excellent examples—fine bunches, large even berries, highly coloured. Pines, Peaches, and Figs also good. The second lot, shown by Mr. Miles, and the third by Mr. Barker, were both good examples of successful cultivation. The classes for nine and for six dishes, taking quantity and quality together, would alone have made a fruit show. For the liberal prizes given by the General Horticultural Company for twelve dishes of fruit, Mr. Coleman again took the lead—a double performance, such as has not before been equalled by any exhibitor in such company. His fruit in this class was collectively meritorious, as was likewise that shown by Mr. Goodacre, to whom the second prize was awarded.

**Grapes.**—In most of the classes for these the competition was unprecedentedly keen, a circumstance consequent upon the number of exhibitors in each, who had fruit of more than usual merit. In the class of ten kinds Mr. Hunter showed grand bunches, especially of black varieties, consisting of Burcharde's Prince, Black Alicante, Barbarossa, Gros Colmar, Lady Downes, and Black Hamburg. Mr. McIndoe was a very good second, his Barbarossa, Trebbiano, Golden Champion, and Black Alicante being particularly well shown. Mr. Hammond, who was third, had also an even collection, consisting of compact bunches and large berries. For six varieties the competition was uncommonly close, the intensely deep colour and universally thick bloom of the black sorts in Mr. Elphinstone's half-a-dozen gaining the first place before Mr. Austen's larger and very fine collection, in which was Mrs. Pince and Venn's Seedling, particularly well done. In the classes for the different varieties of black kinds there was such a competition as has never before occurred, and the difficulty experienced by the judges did not consist in looking for the points of merit, which were apparent at a glance, but in detecting any slight defects that would justify a second or a third position being awarded. The pairs of bunches of Black Hamburg shown by Messrs. Boyd, Patterson, and Coleman, who were first, second, and third, were as near perfect as it is likely this fine old Grape will ever be grown to. Muscat Hamburg is unsurpassed amongst black Grapes for quality and appearance, *i.e.*, when in the condition it was produced in at Manchester, but with many it is difficult to manage. Mr. Boyd's winning bunches of it were, however, magnificent, and the second, shown by Mr. Wallis, and the third, by Mr. Miles, were also very fine. That excellent variety Madresfield Court was brought out in such order as it is rarely seen in by Mr. Goodacre and Mr. Roberts, who took first and second prizes with it. Black Alicante, one of the handsomest of all Grapes, and easily managed, seldom fails in being well exhibited. It was here in faultless condition in the shape of large bunches finished to perfection, especially those with which Mr. Elphinstone took the first prize. Gros Colmar, so much better to look at than to eat, but a good keeping kind, was likewise well represented. Mr. Elphinstone here again showed a beautiful pair of bunches. Of Muscats it may be said that there were many remarkable examples of successful cultivation, but none possessing the deepest shade of amber colour indicative of perfection in this Grape. This was easily accounted for, as the show was a fortnight too early to admit of this deep colour being attained, unless where the Vines had been started earlier than most growers commence with this finest of white Grapes. Mr. Austen, who took the first prize, and Mr. Hudson, who took the second, both had very fine bunches, even in berry, clear and free from the least spot.

**Extra prizes.**—There was a close competition for the General Horticultural Company's prizes for twelve bunches of Grapes. Here Mr. Hunter again took the lead with splendid examples of Black Hamburg, Black Alicante, Muscat of Alexandria, and Trebbiano, all compact, large, well-coloured bunches. The second prize lot shown by Mr. Loudon, although smaller in bunch, were beautifully coloured. The Veitch prize and



medal offered for three bunches of black Grapes brought out a number of competitors, several of whom exhibited fruit of surpassing excellence—particularly the Muscat Hamburgs shown by Mr. Boyd, who took the prize. The Madresfield Court, too, staged by Mr. Roberts, which though smaller bunches, were marvellous for the size of the berries and their deep colour. Nothing could be finer than the winning stand, the bunches being large, compact, black as Sloes, heavily covered with bloom, and without a speck on them.

The number of Peaches and Nectarines was unprecedented. With three dishes of Peaches, and also with three of Nectarines, Mr. Hunter was first, staging splendid fruit; the Peaches consisted of Bellegarde, Early Mignonne, and Grosse Mignonne; the varieties of Nectarines were Lord Napier, Elruge, and Violette Hative. Mr. Coleman's twelve Peaches (Bellegarde) and his twelve Nectarines (Lord Napier), which were each first in their respective classes, were marvellously fine alike in size and high colour. Apples and Pears collectively were well shown, considering that it was too early in the autumn for these fruits to be seen in anything like their best condition. The effect in this section of the exhibition was somewhat marred by the rule in the schedule, which confined the competition in the collections of Apples and Pears to two fruits of each kind, giving this part of the show a rather meagre appearance.

T. B.

### THE BEST PEARS.

(Continued from p. 189.)

#### Althorpe Crassane (Crassane Althorpe).

**DESCRIPTION OF THE TREE.**—Wood, medium size. Branches, very numerous, regularly erect, long, weak, flexible, dark grey tinged with light red, and generally but slightly speckled, their callosities generally projecting. Eyes, small and medium, ovoid-rounded, well separated from the wood. Leaves, large, pointed, irregularly toothed, very large near the stalk, which is neither very long nor very thick. Fertility, ordinary.

**CULTURE.**—The free or Quince stock suits it equally well, and it is so vigorous that on either of these stocks it forms tall well branched pyramids.

**DESCRIPTION OF THE FRUIT.**—Size, medium or small. Shape, rounded, swollen, usually having one side more so than the other. Stalk, long, slight, curved, sunk in a narrow hollow. Eye, small, open, well formed, placed at the bottom of a pretty large basin. Skin, pale yellow, speckled with fawn coloured dots, tinged with reddish brown on the side next the sun. Flesh, white, melting, very juicy, pretty fine, only slightly gritty. Juice, extremely abundant, sugary, slightly and delicately perfumed. Season, from the end of October to the first week of November. Quality, first rate.

**HISTORY.**—It was first raised in England about 1830, and Mr. Downing, the eminent American pomologist, stated this in 1849, when he gave the following description of this Pear, which at that time was but little known in the United States: "This beautiful English Pear was obtained from a sowing made by the late Mr. T. A. Knight, President of the Horticultural Society of London. He sent it in 1832 to Mr. John Lovel, of Boston, United States. It is highly esteemed in England, and the tree is recommended as being very hardy. Up to the present the examples of this variety which have born fruit in the United States have shown it to be of excellent quality, although somewhat inferior and hardly equal to its reputation. We do not know whether there are two kinds of Althorpe Crassane in existence; we can only testify that it is of variable quality, for we have tasted certain specimens, which were really nasty."

**REMARKS.**—M. Decaisne very properly observes in his "Jardin Fruitier de Muséum," published in 1863: I cannot agree with M. Willermoz, who gives the Thompson Pear as being synonymous with the Althorpe Crassane as described by Mr. Thompson himself. We have lately been able to convince ourselves thoroughly that these two have no resemblance to each other, but in favour of M.

Willermoz it must be stated that some years ago a specimen labelled Althorpe Crassane was sent to us which was no other than the Thompson Pear. From this it follows that a similar mistake in the label may have equally misled M. Willermoz into the error pointed out by M. Decaisne.

#### Baronne de Mello.—*Syns.*—His Pear, Beurré Van Mons.

**DESCRIPTION OF THE TREE.**—Wood very strong. Branches numerous, usually erect, thick, flexible, and very long, orange-yellow, speckled with grey spots which jut out considerably. Eyes, vivid, very broad at the base, entirely adherent. Leaves, large, broad, channelled, generally red towards the end of summer, elongated, oval, and the edges slightly jagged or entire, the stalk being long and thin. Fertility, abundant.

**CULTURE.**—This tree, which is of a pretty vigorous habit, forms remarkably handsome pyramids, grows much better on a Quince than on a full stock. It may be trained in any form, and thrives equally well in any aspect.

**DESCRIPTION OF THE FRUIT.**—Size, pretty large. Shape, turbinate, pointed, knobbed, swollen, frequently wrinkled towards the top. Stalk, of medium length, straight, somewhat thin, but thicker towards the base and obliquely placed on a protruding base. Eye, small, open, poorly developed, slightly sunk, surrounded with little knobs. Skin, greenish-yellow, sprinkled with a few grey dots, and prettily tinted with reddish brown, which is sometimes squamous on the side turned to the sun. Flesh, yellowish-white, dense, fine, half me ting, gritty in the centre, very juicy. Juice, very abundant, sugary, with a fine musky scent, and delicately acidulated.

Season, from the beginning of October to the beginning of December. Quality, first-rate.

**HISTORY.**—In 1839 Louis Noisette mentioned a Pear named His at page 149 of the second edition of his "Jardin Fruitier," which is no other than the Baronne de Mello just described. It was first raised by Van Mons, says that author, and grafts were sent by him to M. Poiteau, the botanist who gave them to Noisette, and shortly afterwards called this fruit the His Pear, after M. His, who was then Inspector-General of Public Libraries, and who receiving this Pear from Belgium, and thinking it unknown, M. Jean Laurent Jamin, a horticulturist at Bourg-la-Reine (Seine), gave it the name of Baronne de Mello, the owner of the charming Chateau de Pescop (Seine-et-Oise), and the name seems to have stuck to it.

**REMARKS.**—The "Pomological Congress" (Vol. I., No. 27), having this Pear under consideration, classed it amongst the synonyms of Adèle de St. Denis, and Philippe Goës. This was a double mistake, we have already stated with respect to the former Pear, and also for the second, which does not ripen until two months after the variety with which they declared it identical.

#### The Belle Julie Pear.—*Synonym* Alexandre Hélie Pear.

**DESCRIPTION OF THE TREE.**—Wood, very strong. Branches, few in number, generally spread out, long and stout, flexible, cottony, light greenish brown, widely speckled, but usually of the average length. Eyes, ovoid, rounded, large, pointed, slightly separated. Leaves, large, oval, or elliptical, regularly serrated, somewhat thin, and borne on a long and very thick stalk. Fertility, good.

**CULTURE.**—It is wanting in strength of growth at first, and increases in size but slowly. The development of its buds is as usual. We have grafted it on a Quince stock, but have no experience of any other kind of stock. It forms fairly strong growing pyramids.

**DESCRIPTION OF THE FRUIT.**—Size, small, is at any rate medium. Shape, oblong, obtuse, regular. Stalk, short curved, slightly swollen where it forms the twig and obliquely in the fruit. Eye, large, round, open, and scarcely sunk at all. Skin, rough to the touch, thick, of a yellowish green, speckled, and stained with light fawn. Flesh, slightly green, luscious, half melting, rarely very hard. Juice, abundant, refreshing, sweet, slightly and pleasant-

ly perfumed. Season, the end of October and the beginning of November. Quality, first class.

**HISTORY.**—In 1849 M. Alexandre Bivort gave the following information about this Pear, which belongs to Belgium: "It was raised from seed," says M. Bivort in the "Album de Pomologie," 1849, "sown by Van Mons, who named it after Mlle. Julie Van Mons, daughter of the general, and granddaughter of the professor of that name. It was first described in 1842."

**REMARKS.**—M. Liron d'Airolles described in his "Notices Pomologiques," published in 1849, a Pear under the name of Alexandre Hélie that we have frequently bought under that denomination, but, judging from the tree and the fruit, it is no other than the Belle Julie. We cannot say as much for the Saint Germain du Tilloy, which has been supposed to be identical with the Belle Julie. This mistake can only be the result of an insufficient examination, for both the trees and the fruit have but little resemblance to each other.

*Dictionnaire de Pomologie.*

### NOTES ON THE FRUIT GARDEN.

**Pot Strawberries.**—When I looked at a truly grand lot of plants, growing at Maiden Erleigh, the other day, I could but remark that so far from these looking as if they would thrive if two were in a pot, they rather seemed to need two pots to a plant. The sort was President, and for fine dark foliage and large promising crowns I have rarely seen better. Mr. Turton is an old disciple of Mr. Wildsmith, and both believe in liberal treatment of the Strawberry as a pot plant. What the results are may be seen at fruiting time in the fine, high-coloured fruits produced.—A. D.

**Damsons in Lancashire.**—Allow me to inform a "Constant Subscriber" that I know of no better Damson-growing district than that portion of the county of Lancashire lying between Preston and Lancaster, of which perhaps Garstang is the centre. Last season I have seen about 20 tons of this fruit exposed for sale in the covered market in this town on one day. This is irrespective of the large quantities which were brought direct from the farmers and to the railway without coming into the market. Of course last season was an exceptional one, but from personal knowledge of the district referred to, I anticipate a more than average crop this season. As an instance of the extraordinary crop, I may state that one small occupier of a farm at £12 per annum sold his ungathered Damsons for £10. They are chiefly bought up by the fruit preservers of Wigan, St. Helens, Manchester, and Birmingham.—J. B. J., Preston.

**Outdoor Peaches and Nectarines.**—Had Mr. McL. (p. 311) given a clue to the locality in which his garden is situated, whether early or late, one would have been able to give the names of the very best kinds adapted to his purpose. Outdoor Peaches as a rule come in a glut, and it is the early and late kinds which pay best. Mr. McL. will therefore do well to take this matter into consideration in all its bearings before he makes his selection, not overlooking the fact that very late kinds like Late Admirable Peach and Victoria Nectarine will not succeed on a south-east wall in a cold locality. He should also bear in mind that coloured fruit always sells best in the market. *Early Peaches*—Hale's Early, Early Louise, A Bec, Early Grosse Mignonne, and Doctor Hogg. *Midseason Peaches*—Grosse Mignonne, Belle Beauce, Royal George, Violette Hative, Noblesse, and Bellegarde. *Late Peaches*—Dymond, Barrington, Gregory's Late Admirable, Walburton, and Prince of Wales. *Early Nectarines*—Lord Napier, Early Orange, and Advance. *Midseason Nectarines*—Elruge, Violette Hative, and Stanwick Elruge. *Late Nectarines*—Pine-apple, Albert Victor, and Victoria.—W. C.

**Free-bearing Apples.**—The following sorts, viz., Lord Suffield, Keswick Codlin, Stirling Castle, Frogmore Prolific, Pott's Seedling, Jolly Beggar, Northern Greening, Lord Derby, Ecklinville, Worcester Pearmain, Old Hawthornden, Cellini, and New Hawthornden, worked upon Crab stocks, bear here immensely; indeed, I have



scarcely ever known these sorts to fail so prolific are they. In my opinion all such free-bearing kinds should be worked upon this stock. The trees grow more vigorously, and attain a much larger size than worked upon Paradise stocks. The English Paradise is a most valuable stock upon which to work those required for bushes, pyramids, and espaliers of sorts having a very strong habit of growth and less free-bearing qualities than the above named. This stock induces early bearing, fine fruit, and compact dwarf growth to an extraordinary extent—a fact worthy of considerable attention in the case of those concerned in the cultivation of this most useful fruit. In the collection here worked upon the English Paradise I find the following sorts bearing good crops of fine fruit: Welford Park Nonsuch, Margil, Lady Hen-niker, Irish Peach, Peasgood's Nonsuch, Alfriston, Mère de Menage, Golden Noble, Kentish Fillbasket, Sturmer Pippin, King of the Pippins, Dutch Mignonne, Golden Reinette, Lord Burghley, Cox's Orange Pippin, Beauty of Kent, Old Non-pareil, Annie Elizabeth, Kerry Pippin, Court Pen-du Plat, Wellington, and many others all good. This is the best season we have had for many years for Apples.—GEO. CANNON, *Ealing*.

**Loddington Seedling Apple.**—Beautiful specimens of these come to us from Mr. Groom, of Linton, with the following label, which is the best character we ever read of an Apple: "Stone Apple or Loddington Seedling, the best kitchen Apple in cultivation. Never yet known to fail of a crop."

**Orange Goff Apple.**—A shoot of this comes from Linton, like a hank of Onions, from a tree with a crop of twenty bushels. It has a curious acid flavour.

**Cracked Pears.**—"Dorking's" Pear tree being so recently planted, the roots cannot have penetrated deeply into any sour subsoil; therefore the inference to be drawn from the cracked condition of his fruit is that the kind is too tender for ordinary culture, and needs a wall to bring it to perfection. The best course to adopt is to cut the head off the tree in spring and craft it with some good pyramidal kind, such as Williams' Bon Chrétien, Alexandre Lambré, Swan's Egg, or any ordinary free-bearing sort.—A. D.

**Open-air Vines.**—In answer to "A. A. M. H. C.'s" inquiry with reference to Vine culture out-of-doors, I must say that the culture was carried out in a wine-making district in Moravia, and within fifty miles of the extreme limit (north) where the Vine could be grown with profit as a field crop. I have had exceedingly good Grapes of Mrs. Pince, Black Hamburg, and Muscat of Alexandria (these last against a wall); Sweetwaters of various kinds; Burgundy, white, red, and purple, and many other sorts not known to growers here. These all, with the one exception, grew out in the open quarter, of course with the benefit of full sunshine, although that was not required with the sorts named if planted against a wall on any aspect but a northern one. The plants were grown from long cuttings 1½ ft. long, and would make in the first year wood about 2½ ft. long and as thick as a goose-quill; the next year, as large as an ordinary lead pencil and 3 ft. of growth, and each succeeding year more; but as the Vines were mostly cut down to stools, as basket Willows are treated here, I had no means of judging as to how large a size they would grow there. In England we have no frost sharp enough to kill Vines to the snow or ground level, I never grew Gros Colmar or Alicante. These sorts would require about the same amount of average sun heat as the Muscat family. I have had in Presburg Muscats beautifully coloured on a south aspect, and exceeding in richness anything grown under glass in our comparatively sunless climate.—F. M.

#### NEW AND RARE PLANTS AT BADEN-BADEN.

**Tagetes Parryi.**—This is a fine thing, forming a bush of from 1 ft. to 2 ft. through, and just beginning to bloom. The flowers are a very deep yellow, and they are of a pleasing outline; the finely cut leaves, of a grassy green, show the flowers off well. It bears taking up out of the ground and repotting and makes a fine decorative plant for the greenhouse.

**Nerine profusa** is a showy and distinct species, for which I am indebted to the generosity of Mr. Elwes; the flowers are good in substance and incline rather to orange than to scarlet.

**Begonia Martiana var. gracilis**, a free flowering tuberous species from New Mexico, resembles a well flowered Balsam; the flowers are large, deep rose, and very effective.

**Indigofera Royleana**, somewhat of the *Dosua* type, is a desirable hardy plant, and one which lasts long in flower; the latter are bright purple. MAX LEICHTLIN.

## THE INDOOR GARDEN.

### CARNATIONS ALL THE YEAR ROUND.

WITH a little care one may have, if one wishes, Carnations in bloom from January 1 to December 31 by the following plan:—

1. In January, February, and March the tree or winter flowering Carnations will be in flower. To protract the bloom as far as March we will have to prevent a few plants flowering till January or early in February. In early January take cuttings of the tree varieties. In February or quite early in March sow whatever seed you have by you which you can spare for the purpose.

2. In April and May the old plants of the florist section, taken up as directed further on in September, will flower. At the end of April bring a few of the most robust free-flowering of the layers of the florist section laid down last year into the greenhouse to be gently forced on.

3. In June, the layers directed just now to be brought inside will flower. As soon as the plants of the florist section have made shoots long enough let a few be layered. This will be about the end of June.

4. In July and August the ordinary florist varieties will be in flower, and must be layered as directed.

5. In September and October the layers made in June will come into flower, and some of the late florist section will still survive in bloom. The earliest winter flowering and climbing kinds will then come into flower, such as *La Belle*, *Miss Joliffe*, &c. The very early sown seeds above mentioned will come into flower if properly treated through the year, so that these two months may be made very gay indeed. When the ordinary sorts have quite done flowering (early in September), take a few of them up, pot them, and put them in the greenhouse, where they will flower as before-mentioned in April and May.

6. In November and December the tree or winter flowering Carnations will be in flower, and in this way you will have had Carnations all the year round.

Of course Carnations made to bloom in this persistent and exhaustive manner are not so good as those which flower in their proper seasons, and it does not improve the plants to be "played with" in so unceremonious a fashion. So it is best always to prepare a few extra plants for this treatment. It is a good plan, as soon as you see the bud, if the bloom promises to be at all later than you wish, to water the plant about three times a week with weak manure-water or some other similar stimulant. Of course as so much work is done under glass, you will be a good deal troubled with green fly and other insect pests, which must be diligently searched for and removed.

EDWARD H. ALLEN.

### PRUNING CAMELLIAS.

ALLOW me to say in answer to "O. S." (p. 294) that Camellias may be pruned freely if it is thought necessary to do so, but usually it is inexpedient to do so. Most of the choice varieties form naturally spreading and dense bushes, clothed so thickly with flowers that it is necessary to thin them out to prevent the bushes from exhausting themselves. "O. S." referring to a large Camellia that was "clipt" in closely, says, "it was not allowed to flower the first year." The fact is, it would not be likely to flower, as the new wood would not be formed early enough to allow of the formation of buds. Clipping in a Yew hedge would be the proper treatment, but to serve a Camellia in the same way would be objectionable. The Camellia will thrive out-of-doors in most parts of Britain, but in cold districts it will not flower. It flowers with us in Essex frequently; but, independently of the flowers, the bushes themselves are very ornamental and rather hardier than the common Laurel.

Another correspondent, "J. M. D.," requires information about growing the Camellia in a Vinery and the best varieties to grow. Soil on which Heath and Bracken grow well would do admirably for

Camellias. A half-span house with Vines planted near the front would suit them. I would allow a border 4 ft. wide parallel with the back wall for the Camellias, and it ought to be 2 ft. 6 in. deep. Plant good sized bushes that would flower at once. The distance apart should be regulated by the size of the plants. The house should face the south-east in preference to north-west; the latter aspect would answer well for the Camellias, but would not suit the Vines. A position out-of-doors exposed to the north-east will do for the Camellias, but they do not form flower-buds so freely as in a better aspect. The old double white is the most profitable to cultivate. *Imbricata* is deep rose or red; *Saccoi nova* is a very finely formed and pretty rose-coloured variety; *Archduchess Augusta* is one of the best crimson varieties. The beautiful varieties raised by Mr. Hovey, of Boston, should also be grown in select collections.

J. DOUGLAS.

**Camellias in Vineries.**—Mr. Douglas writes (p. 278) of Camellias being grown successfully in a Vinery. There is a capital example of such a result at Heckfield, where in a large lean-to house Camellias planted out thrive admirably and produce large quantities of bloom, and yet overhead is grown annually a fine crop of Black Hamburg Grapes that are slightly forced, for the fruit is ripe in August. In this case, also, the vines cover the roof with a dense leafage. This fact shows how very accommodating Camellias are.—A. D.

### HARD-WOODED GREENHOUSE PLANTS.\*

ANY one who can look back for twenty or thirty years will, I think, agree with me that hard-wooded greenhouse plants are neither so well nor so generally grown as they were then. This neglect is much to be regretted, for no tribe of plants will give more satisfaction. Their flowers may not possess the gaudy colours of some of our popular florist flowers, nor their foliage the grandeur of that of some of our fine foliaged stove plants; but still they have a grace and beauty of their own, which should secure them a prominent place in every greenhouse, if not a house for themselves. It might be asked, what is the reason that the cultivation of this tribe of plants is not more general? The reason generally given is, that they are more difficult to grow than soft-wooded plants. It is quite true that they are much easier killed, but it does not follow that they are more difficult to grow. Give them the treatment they require, and I maintain that, with a few exceptions, they can be kept in perfect health with less work and less expense than any other tribe of plants. For instance, they are not so liable to the attacks of insects; have not to be repotted and staked two or three times in a season; do not require picking over every few days to clear them of withered leaves, &c.; and they require less fire heat in winter. Another reason for their neglect may be their slowness of growth—while you can sow seed, or strike a cutting, and grow a fairly good sized specimen of the majority of soft-wooded plants in six or seven months, it takes nearly as many years to grow a good specimen of a hard-wooded plant. Still there are but few nurserymen who do not keep at least a part of some of their houses for a few hard-wooded greenhouse plants.

**Selecting Plants.**—In purchasing young plants it is not only necessary to select good varieties, but also good plants. By this I mean have nothing to do with leggy plants, with several inches of bare stem, and a mass of young twigs at the top. Select only such as have short stems—so that when staking, the lower branches can be brought down to the rim of the pot

\* Read by Mr. John Forrest, at the North of Scotland Horticultural Association's Meeting, Aberdeen.



without breaking. After getting in a young stock of hard-wooded plants, the first thing to do is to see to the state of their roots; whether they seem to be in want of it or not, I would recommend that they should all be re-potted. To grow hard-wooded plants well it is of the greatest importance to have a supply of good turfy peat—such as can be got from a moor, where Heath grows in fair luxuriance, not from bogs where it is too soft and spongy. In breaking up the peat, use only the fibry part, throwing aside any of it which has a sour or dead like appearance. For small plants, it should be broken smaller than for large ones, but the rougher it can be used the better. Add as much silver sand as will keep the peat free and open, and a little charcoal and chips of freestone, or broken crocks; this mixture will do for Heaths, Epacris, A. phelix, Phœnocomia, Tremandra, Leschenaultia, and others of the same character and habit. For Correas, Eriostemons, Genetyllis, Pimeleas, Polygalas, and other free-growing sorts, a third part of turfy loam from an old pasture may be added to the peat.

**Re-potting.**—Before re-potting hard-wooded plants, ascertain the state of their roots as regards moisture. The safest way is to feel their weight—if found to be at all dry, give plenty of water to moisten the whole ball. A good plan is, to place them in a bucket or tub of water, and let them stand for some time, so as to make sure that the ball is thoroughly moist, as nothing will ruin a plant sooner than potting it with the ball dry. No after-watering will moisten it, as the water will all pass through the new soil, and leave the old ball as dry as when potted. If new pots are used, they are all the better to be dipped in water before using; it prevents the soil from sticking to them. If old pots, see that they are perfectly clean, both inside and out. Crocking or drainage is an important part. No plants are more impatient of stagnant water at their roots than hard-wooded plants—so to secure perfect drainage, crock carefully. A little moss or Sphagnum should be placed over the drainage, to prevent the soil from getting down amongst it, then take as much of the roughest part of the soil to be used as will fill up the pot as far, after being firmly beaten down, as will bring the top of the old ball as near the rim of the pot as to allow a little fresh soil on the surface of the ball, when the pot is filled up, and still leave plenty of room to hold as much water as will moisten the whole ball. Before placing the plant in the pot, shake or pick away all loose or exhausted soil from the ball, and if very much pot-bound, take a sharp-pointed stick and break up the matted roots all round. By doing so, the young roots take hold of the new soil sooner than if left in a pot-bound state; after placing the ball in the pot, fill up with the new soil, and as you go on, ram it hard with a wooden rammer—all hard-wooded plants require firm potting. Indeed, if the soil is in a proper state, there is not much danger of making it too firm, at least for Heaths. A rough and ready way of finding this out is, to take a handful of the soil and press it firmly; after opening the hand, if the soil runs down as dry sand would do, it is too dry. Should it stick in a lump, it is too wet; but if it break into three or four pieces, it is in a fit state for use. When the pot is filled up, leave a good sprinkling of the sandiest part of the soil loose on the surface—it prevents it from getting caked in hot weather; and also, if at any time from want of water the ball should contract and leave a slight opening down the side of the pot, this loose soil will wash in with the water, fill up the vacancy, and so prevent the water from all getting down the side of the pot. Differences of opinion exist as to the best season for re-potting. Some recommend one time, some another; for my

part, I would not hesitate to re-pot a plant if I thought it in want of it at any season, except in winter. At the same time, I prefer re-potting in August and September; my reason for doing so is, that (except Epacris, which should be re-potted when they have commenced to grow after being cut down), the majority of hard-wooded plants make their most vigorous growth in autumn; therefore in re-potting just before they get into this active state of growth, the young roots at once take hold of the new soil; which not only enables the plant to make a strong healthy growth, but also keeps it in a healthy growing state all winter, and better fitted to stand the cold dry winds of spring than if re-potted in any of the spring months. If in good health, the plants should get a good large shift, never less than into pots 2 in. wider than the ones they came out of, and even more for large plants; by giving good shifts, they can be kept in vigorous health without requiring to be repotted oftener than once in three or four years. Hard-wooded plants require very careful and attentive watering. Never allow them to get too dry, and only water when dry, and then give a good supply, so that it will go through the whole ball. Nothing is worse than giving it in dribbles, which only damps the surface.

**Training.**—In doing this the best way is to preserve as much as possible the natural habit of the plant; the greater part of hard-wooded plants are either dwarf bushes or pyramids. Whatever the style, use as few stakes as possible, and what are used try to keep as well out of sight as you can; the lower branches should be tied down as close to the pot as can be done with safety, and the other branches arranged regularly and naturally all round, with the tallest in the centre. To keep the plants dwarf and bushy, they should be pinched back frequently when young. It is worth while, if they are at all inclined to grow leggy, to lose a year's flower for the sake of keeping them down—no amount of cutting back after they once get up will do so much good as pinching when young.

**Span-roofed houses best.**—By keeping hard-wooded plants near the glass, with plenty of air (avoiding cold cutting winds, especially in spring), turning them round occasionally to keep them from growing one-sided, and only giving as much fire heat as will keep them safe in frosty weather, or to dry up damp, good specimens may be grown in very indifferent houses; but the best house to grow them in is a low span-roofed one. For young plants in summer, nothing is better than a cold frame set on bricks at each corner, to allow a free circulation of air. Large plants, when out of flower, are all the better for being placed out of doors in a shady part in summer, if a few spare sashes are available to put over them, or some other covering to throw off heavy rains, but rather keep them indoors than expose them to drenching rains. When placed out of doors or in cold frames, set them on bricks or something else to prevent worms from getting into the pots. I am not an advocate for much artificial manure for hard-wooded plants; still, when they have been for some time in the same pots, most of them will be benefited by a slight top-dressing of bone meal, or some other wonder-working artificial manure, or an occasional watering with weak liquid manure.

**Insects and mildew.**—Hard-wooded plants, as I have said, are not so liable to be over-run with insects as soft-wooded plants, but in a greenhouse where a miscellaneous collection is grown, they often get infected with green-fly, red-spider, thrips, and scale. To prevent this as much as possible, give them the lightest and best ventilated part of the house to grow in, and

do not crowd them up among soft-wooded plants. When affected with any of these pests, fumigate with Tobacco, or dissolve about half-a-pound of soft soap in a gallon of water, with as much Tobacco juice as will make the mixture pretty dark in colour—lay the plant on its side, and give a good syringing with this mixture, turning it round so that no part of the plant is missed. For red spider, add a little sulphur to the water; for scale, use the water pretty hot; 120° will kill scale and not harm the plants. Mildew is another disease to which Heaths more especially are subject; to get rid of it, damp the plant all over, and dust with sulphur. Another, and the most fatal disease to which hard-wooded plants are subject, is what is known as “going off at the neck,” and as far as I know, there is no cure for it. It affects the plant just at the surface of the pot, eating into the stem; and what is very singular, a plant in this state will appear to be in perfect health, both root and branch, and yet die off almost at once. This disease is generally supposed to be caused by an irregular supply of water, but whether this is so or not, I am not prepared to say; there is, however, no doubt that careful watering is of the first importance in the cultivation of hard-wooded plants.

#### NOTES ON THE INDOOR GARDEN.

**New hybrid Dieffenbachia.**—A Dieffenbachia, the result of crossing D. Wallisi with D. picta, was exhibited at a recent meeting of the French National Horticultural Society by Messrs. Chantres, of Morte-fontaine. It is said to be a valuable acquisition, excelling in beauty both of its parents, the variegation being constant and distinct, and the plant of vigorous habit and easy culture. It has been named D. memoria Corsi. It has been awarded a first-class certificate.—J. C. B.

**Bignonia grandiflora.**—It may interest some to know that this fine hardy climber is amenable to pot culture, and that even small specimens will flower freely enough to render them useful for conservatory decoration. Potted in 6-in. pots and grown along freely through the summer months in an open sunny situation, they will form one or two large flower-heads, and may be introduced into the conservatory with good effect. This Bignonia appears to have flowered exceptionally well this year in the open air, but it cannot be depended on to do so in this country except in highly favoured districts. On the Continent it forms a striking object when in bloom, but our summers as a rule are too cold and moist for it. It should only be planted in very sunny situations sheltered, if possible, from cold wind.—J. C.

**Allamanda grandiflora.**—This has proved with us this year to be one of the most useful stove-flowering plants grown, a young plant in an 8-in. pot, trained, or rather tied, to a pillar in the stove having yielded dozens of its beautiful yellow flowers during the whole summer. In my opinion this species, from its thin, graceful habit, floriferousness, and fragrance, is a far more desirable plant than the coarser growing kinds, though these, where room can be spared for them on the roof of the stove, produce a glorious display of flowers during the autumn. In such positions these plants look natural and give little trouble, but when strong growing plants, like A. Hendersoni or A. Schottii, which produce woody shoots as thick as one's little finger, and whorls of large leaves are twisted and bent round a 3-foot balloon trellis, the effect is in every way unnatural. The smaller and more graceful A. grandiflora is much better adapted for this sort of treatment, its small leaves and thin flexible shoots looking, when thus trained, much more at home than the stronger growing kinds. As an exhibition plant A. grandiflora is likely to take a more prominent place than it has done yet, though at Manchester there were several beautiful balloon-shaped speci-



mens, as well as some fine bunches of cut flowers of it. I have never found this species to thrive when struck from cuttings, though I have tried it in a variety of ways, but when grafted on some of the stronger growing kinds it gives little trouble, uniting in about a fortnight and starting freely into growth. In this way handsome little shrubs may be had within six months from the time of grafting, and if a few are worked and treated liberally through the winter, they will commence to flower in the spring and continue to yield abundantly throughout the summer.—B.

## SEASONABLE WORK.

### FRUIT.

WM. COLEMAN, EASTNOR CASTLE.

**Vines.**—The late crop of Muscats will now be getting ripe and capable of bearing all the light that can be given to them. Where a large portion of the roots are in external borders the heavy rains have started an abundance of fresh laterals, and as these are now doing no good to the Vines or the Grapes, keep them closely stopped back to the main foliage, and at the same time remove all laterals down to the main bud from young canes and leaders intended for next year's fruiting. As the berries become nicely coloured, and the foliage shows signs of ripening, gradually reduce the temperature by ventilating more freely and keeping up a steady warmth in the pipes in preference to keeping the ventilation closed and trying to dispense with fire heat. Lady Downes, Alicantes, and the usual run of late Grapes, including Alnwick Seedling, will require a constant circulation of warm air with liberal ventilation to keep forward the ripening of the fruit and wood before the long cold nights check the flow of sap. If the internal borders in which the surface roots are getting very airy, require more water, and the berries show an indisposition to colour up to the footstalks, choose a fine morning for the operation, and give them one or two light waterings with generous diluted liquid at a temperature of 90°. The laterals in this house may be kept well stopped back, but not so close as the Muscats, as black Grapes always colour best under a good canopy of foliage. Hamburghs and other thin skinned kinds intended for autumn use will require careful management, as too much fire heat will cause them to shrivel and the want of it will let in damp, and mould will soon destroy the bunches. Perhaps the best way to encourage this house is to reduce all laterals and to keep an even spread of foliage clear of the roof; to keep the glass, wood, and floors perfectly clean; to give the final internal watering on a fine day, and to cover up the border with a good layer of dry Fern or Bracken—Plants in pots should never be allowed to remain in anyinery after the Grapes begin to colour. Early Vines intended for forcing in November will be sufficiently matured to admit of pruning without delay. Vigorous young Vines that have been well ripened may be pruned in close, but old ones whose satisfactory crops compensate for appearance should be pruned to a plump bud. After pruning remove loose bark with the hand, but avoid the barbarous practice of scraping; wash well with strong soap water, and if insects have been troublesome dress with the following composition: One pound soft soap, and the same quantity of sulphur boiled together for ten minutes in one gallon of water; while hot, add one pint of strong tobacco water, an egg cupful of turpentine and as much fine loam as will give the consistency of paint. Thoroughly cleanse the house, clear away and burn all loose surfacing, and surface the borders with rich top-dressings consisting of turf, bones, and rotten manure.

**Peaches.**—The lifting, root pruning, and rearrangement of the trees in the early house may be proceeded with at the earliest convenience. To perform this work successfully it should be taken in hand and carried out with as little delay as possible, and if the trees are completely lifted and removed to fresh stations the roots will require a

good soaking of water to settle the soil about them, when new growth will soon set in. To have ripe Peaches in May, houses planted with the earliest kinds of recent introduction may be started in December; but for giving the best quality of fruit this section must give way to such kinds as A Bec and Early Grosse Mignonne—two varieties which require a little more time to finish them properly. For succession we have Belle Bauce, Stirling Castle, Royal George, Violette Hative, and Bellegarde, still one of the best Peaches in cultivation. To the above for planting in the mid-season and late houses may be added a very superior old Peach named Dymond (not Diamond), Barrington, Gregory's Late and Walburton Late Admirable, a large pale Peach equal to Noblesse in quality, but a shy setter unless the wood is thoroughly ripened. Where more than two kinds of Nectarine are grown Lord Napier and Stanwick Elruge should have a place, the one to precede and the other to succeed the indispensable Elruge or Violette Hative. All the yellow-fleshed Nectarines are excellent. As time is now approaching for selecting trees from the nursery the first consideration should be the stock, as the best kinds on bad stocks always end in disappointment and loss.

**Figs.**—By removal of the roof lights and the withholding of water early-forced pot trees will now be losing their leaves and going to rest. If any small fruit remain on the points of the shoots rub them off, and leave all quiet and undisturbed until the end of October, when the annual thinning and cleansing may be performed. If, and by no means improbable, the trees have been attacked by spider or scale, repeated washings with strong soap water or Gishurst compound will weaken the enemy before the final cleansing takes place. Where the early trees are planted out and space is limited annual root pruning is recommended. The period immediately preceding the fall of the leaf is the best time for lifting. Every tree should be well drained with broken bricks and old rubble, and the compost, consisting of strong turfy loam, old mortar, and crushed bones, should be mixed up and used in a dry state. Succession trees are still producing fruit, but it is quite time they were going to rest, as nothing is gained by allowing a tree to bear a few small fruits after it has matured two full crops. Remove all small Figs, wash well with the engine, and leave the ventilators open with gentle fire-heat until the foliage falls. Give particular attention to trees in late houses and cases against walls, as the scarcity of open-air Figs is very great, and a large dessert in September without a good dish of this delicious fruit is by no means complete.

**Cherries.**—The early forced trees, now leafless and resting, must be kept as cool as possible. If established in inside borders, and the lights have been removed from the roof, shutters or some kind of covering should be placed over the roots to protect them from heavy rain, as an excess of moisture while the soil continues warm might start some of the most prominent buds. If any of the trees require lifting and replanting or replacing with others from the open wall, not a day should be lost in getting the work proceeded with. Good drainage is an important element, and the soil which suits the Cherry best is a strong calcareous loam, with a liberal admixture of old lime rubble and charred refuse. Animal manure should never be used with the soil, as a gross growth is generally affected with gum, perhaps the worst evil we have to contend with in the management of Cherries. Old trees which have been weakened by heavy cropping may be well mulched with rotten manure, or, better still, a good quantity of the exhausted soil may be removed and replaced with fresh compost, similar to the above, with the addition of a good sprinkling of bone dust. All border operations should be performed when the soil is dry and in a fit state for being firmly rammed without becoming adhesive. Examine the pot trees, report if necessary, and see that the drainage is satisfactory. Where top-dressing is thought sufficient, work well down the insides of the pots with a sharp pointed piece of iron, and fill up with turf, bone dust, or rotten manure.

Ram firmly and keep the trees out of doors for the present.

**Cucumbers.**—Plants in full bearing will now require to have more artificial heat to keep them going until those sown in August come into bearing. If they show a tendency to produce thick-ended fruit, remove them at once, unless they are wanted for seed, and top-dress with rich light loam, leaf-mould, or manure. Water well with warm diluted liquid and crop lightly. For autumn and winter work the pot system has many advantages, not the least being the facility with which fresh fermenting tan or Oak leaves may be placed in immediate contact with the pots. Of the two I give preference to sound leaves, as plants of all kinds seem to luxuriate in the moisture which arises from them; but some little care is needed in turning and exposing them to the atmosphere for a few hours after they are dislodged from the stove. Where young plants have filled two-thirds of the trellis, they may be stopped to induce a good break of laterals from the base, and as these will produce finer fruit with more certainty and less trouble than old plants in pits and frames, a few of them may be allowed to commence bearing at once. If brought on from the seed pot in the genial heat produced by fermenting material, they are sure to be clean and vigorous, and capable of bearing a few fruit without being fed with strong stimulants. Where Cucumbers succeed Melons, see that a few good plants are always ready for filling up the different sections as they become vacant. Sow seeds at short intervals, and throw plants away in preference to turning them out after they become pot-bound.

### INDOOR PLANTS.

T. BAINES, SOUTHGATE.

**Stove.**—Plants completing their growth should be encouraged to ripen their wood, a matter of the greatest importance as regards their blooming well next year. Under the head of deciduous flowering plants may be included Allamandas, the twining Clerodendrons, Vincas, Aristolochias, Bougainvilleas, Hexacentris, and Thunbergias, for though many of these are not, strictly speaking, deciduous in their habit, still, the most approved way of managing them is to so far check shoot extension in autumn as to cause them to shed most of their leaves. All such plants as the above should now, as far as possible, be moved to the coolest end of the house, giving all the air that it is needful to admit at the end in which they are placed, and applying no more water than is requisite to prevent the leaves from shrivelling up, allowing them to flag freely each time before water is given. Achimenes, Gloxinias, Tydas, Curcumas, Gloriosas, the summer-flowering bulbous-rooted Gesneras, and Caladiums should also, where their tops are yet fresh, be kept dry enough to cause the foliage to die down gradually. Stephanotis that flowered early, and which have since made sufficient growth, should now be kept as dry as they will bear without injury to the foliage, but it is not well to expose the plants to so low a temperature, or the roots are liable to suffer and deficient bloom to be the result. Gardenias and Ixoras that have been up to this time accommodated with enough heat to keep up the formation of enough growth and flower-buds should not be allowed to get much below 70° at night. Under this treatment, with a proportionate increase of heat in the daytime, they will keep on flowering freely for the next two months. Winter-blooming plants annually grown from cuttings, such as Poinsettias, Euphorbia jacinthiflora, Eranthemum pulchellum, Plumbago rosea, Thysacanthus rutilans, Sericographis Ghiesbreghtii, and Begonias, should, if not already done, be put where they can receive sufficient heat to keep them from receiving a check on cold nights, or they will move slowly when an attempt is made to push them on into flower. Roses forced last winter or spring, and which have been stood out-of-doors during summer, should be got under cover before long, especially those intended to be forced early; for if



allowed to remain until the roots, which now should be growing fast, get chilled by the cold, they will neither bloom so well nor so early. This refers principally to the Tea varieties, which will bear much more fire heat than those who have not had much experience in forcing them for winter blooming suppose. If flowers of these are wanted in November the plants should at once be put where they will get a little warmth at night, with top air, but no side draughts, or mildew is sure to make its appearance. Before housing these pot Roses it is a good plan to dip them in or syringe them with Tobacco water in which a little Gishurst compound has been dissolved. This will kill any insects and mildew that may happen to be present. The Tea varieties should not be pruned at this season. If Roman Hyacinths are wanted to flower early they should have been potted soon enough to enable them to be now making roots. More ought to be now put in to follow the earliest, and if some of the large blooming kinds are potted at the same time they will be in right condition to succeed the Roman variety.

**Greenhouse.**—Here everything should be made ready for the reception of all such plants as have been out-of-doors during summer. Camellias out-of-doors should at once have room prepared for them, or provision made to protect them, for although hardier than the common Laurel, yet when their flower-buds are prominent, such as will be the case where they are expected to bloom early, they will not bear either frosty nights or saturation at the roots. Whatever tying Azaleas require should be completed at once, but if only wanted for home decoration very little support in this way is needed. Chrysanthemums should now be liberally supplied with manure water, or else have a stimulant such as soot or some of the artificial manures applied to the surface of the soil so that it may be washed down to the roots. Pelargoniums, if out-of-doors, should be at once got into houses or pits, placing them close to the glass and giving them plenty of room. Zonal varieties, both single and double, required for flowering through the winter should be got in. If their blooms are wanted early they ought to have a little more warmth than that of an ordinary greenhouse. Seedlings of herbaceous Calceolarias, if not potted off, should immediately be attended to; they like a little leaf mould in the soil, and also rotten manure.

#### PROPAGATING.

**Propagating cuttings** of all ordinary bedding plants put in a month ago will now be fairly established in the pots or boxes in which they are to pass the winter; all now required to be done, therefore, is to keep them clear of decaying leaves and as dry as possible consistent with health. If, however, it be desired to increase any particular kind to the fullest extent, probably another batch of cuttings may be obtained by this time; these may be taken off and inserted, and in the case of Pelargoniums, put on a shelf near the glass. At the same time it is well to bear in mind that many soft-wooded plants are so easily of increase in spring that large numbers may be had from a few store pots by bedding out time, a consideration where room is limited. Such plants as Fuchsias, Heliotropes, &c., that are desired in flower early in spring should now be established in small pots, but if the insertion of the cuttings has been delayed, no time should now be lost in putting them in, and it should be noted that as a rule a young cutting not only strikes readier, but is less liable to go off than one of older growth.

**Seed sowing** is now nearly at a standstill, as in the majority of cases if seeds are sown at the commencement of the new year they grow so freely as to soon overtake those sown now. Exception must, however, be made in the case of oleaginous seeds that soon lose their vitality, and also those of Palms. These latter should be sown whenever obtained in pots or pans of sandy loam, and potted off as soon as the first leaf is deve-

loped, as if allowed to remain longer the roots grow so strongly and become so much interlaced that removal is attended with risk. In potting, a good general guide is to keep the seed on the surface of the soil, a great thing to be guarded against being potting too deeply.

**Conifers.**—This is a good time for putting in cuttings of these, the young growths being moderately firm, and not so liable to damp off as if inserted younger. They may either be put in well drained pots or dibbled in a frame specially prepared with sandy soil for their reception. For the choicer kinds pots are best, as it is well known that cuttings strike more readily in contact with the sides of a pot than otherwise, and, moreover, they may be removed into a little heat when calused, which greatly assists the formation of roots. Where large quantities are grown, of course, they must be put directly into the frame, and many kinds succeed well under that treatment.

**Roses** budded last month will now, in some cases, require to have their ligatures loosened.—T.

#### THE ROCK GARDEN.

T. D. HATFIELD.

The following remarks respecting some of the better and more easily grown rock plants may be useful to those about to furnish new rock gardens: On the rock garden proper, in which the soil is calcareous loam, may be grown *Astragalus hypoglottis* and its white variety (*A. h. albus*). Allot a square yard to half a dozen plants, and mix a little peat with the loam. In this way a beautiful carpet throughout the year will be secured, and an abundant display of rosy purple bloom in June, lasting in good condition for upwards of two months. The white variety is also equally good. *Bellium minutum*, a miniature Daisy, will suit a cooler place. *Campanula pulla*, one of the best of the Harebells, likes a sunny position in moist sandy loam intermixed with peat. *Hypericum reptans* will do in a dry place, and its yellow flowers are seen to the best advantage hanging over rock. *Nierembergia rivularis*, in peaty soil, is equally at home in a moist or dry position. It enjoys limestone. Put it in a place where, hemmed in by stones, its powers of extension will be slightly curtailed, and a crowded display of white cups will be the result for upwards of three months in the year. *Hutchinsia alpina* and *H. petraea* are both good and easily grown Alpine Crucifers. *H. alpina* gives no trouble, seedlings of it appearing abundantly wherever a plant has flowered and ripened seed. *H. petraea* has not as yet shown a tendency to ripen any seed, but it may be easily enough increased by division. Some assert that it is an annual, but if our plant be true to name, it is even more perennial than *H. alpina*. Amongst plants in flower may be named *Eriogonum racemosum*, a distinct and beautiful kind; *Micromeria piperella*, a neat member of the Deadnettle family; and *Erpeton reniforme*, the New Holland Violet; in a shady place this has proved to be a perennial and is now interesting. Associated with these are also in bloom, *Mazus Pumilio*, a peat loving subject, and Alpine Poppies, some of which have not yet done flowering. From May to September we have had them without intermission. *Ianthé bugulifolia*.—Seedlings of this year, flowering from the ground to upwards of 2 ft. in height, are pretty and do not look obtrusive, nor do seedlings of *Verbascum phoeniceum*, now very fine—finer than I have ever seen them.

#### KITCHEN GARDEN.

R. GILBERT, BURGHLEY.

Of all months September is the best for making outside Mushroom beds or ridges. They come into bearing at Christmas, and last until April. We are now busily employed lifting Carrots. When a second growth takes place lift at once; many stack them in sand, but the best way is to stack them by themselves in small heaps outside, protecting them with straw and earth. Continue on all favourable occasions to lift Potatoes; dry them thoroughly

before finally storing them, and pit them in ridges outside. Cover them with straw, and then earth them up 9 in. deep at base. Owing to the wet and the atmosphere being so laden with moisture, with no sun to dissipate it, Tomatoes outside are cracking. We, therefore, cut them when just tinged with colour and lay them on the Vinery shelves to get fully coloured. Sow at once French Beans in 3-in. pots. Osborn's forcing Bean is among the best. Old Mushroom manure being light and not over rich, makes a good root-run for them. Potatoes should be put into slight heat to sprout. Myatt's is the best for pots or boxes. Get Cabbage and winter Lettuce at once into their winter quarters.

#### ORCHIDS.

##### TEMPERATURE AND SYSTEM OF MANAGEMENT.

Two great questions, pregnant with good or evil to Orchids, are the temperature and the system or routine of management to which they are subjected. No matter how well the cultivator may cater in respect to the material under which roots prosper and extend, if the temperature be wrong, all will be wrong together. This is the principal rock upon which growers, young and old, founder. Of course, in a state of nature, certain Orchids bask in the occasional glare of a tropical sun, and although the plants look, as they must do, desiccated and yellow, the rainy season works upon them nothing less than a magical reformation. Now, to attempt this sort of thing in our artificial climate is sheer folly, ending invariably in defeat. In the first place, we dare not, although it were possible, imitate with impunity those extremely sunny, arid conditions; and in the second place, we simply cannot imitate, even at a distance, those sudden outbursts of stimulating power which are infused into the epiphytal plant on the return of rains and dews. The heat of the earth and surrounding vegetation combine to give this moisture a potent influence on plant life which, under the very best system of artificial culture, cannot be commanded. Hence the folly of imitating Nature too exactly. In fact, it may be taken as an axiom, the hotter the climate, the worse the plants are to manage. Of this we have ample proof. But in order to make our assertion good, let us condescend to a few details. What are known as cool Orchids are invariably more or less well managed, and the main reason is that these, in a state of nature, come from mountainous regions at an altitude varying between 4000 ft. and 6000 ft. above sea level. The heat, consequently, is more uniform and never very great, and the moisture more or less continuous—it is easier, in fact, to imitate the climate, there being no extremes, at least no violent extremes to compel the culturist to adopt any unusual system of culture. But whenever one steps down two or three or more thousand feet, then there is corresponding additional heat, with all the variations of drought and moisture which prevail in such a climate; and there is less wonder at a European culturist feeling that there are difficulties ahead which many have tried to encounter, but have been baffled, and which many more in course of time will try, and not be, very likely, much more successful. Take those West Indian plants *Epidendrum bicornutum*, *Cattleya superba*, and the beautiful *Epidendrum dichromum*; how often they have been introduced by their hundreds and thousands, and yet in time have all disappeared! The same with that charming gem *Ionopsis paniculata* and *Oncidium pulchellum*. Now to try an arid climate for a month with these plants, supposing them to be already established, might do in a certain way, if it were not for the myriads of thrips and red spider that would fasten on them, and suck out their life blood, and some means of keeping these marauders under must be adopted, even at the expense of what might otherwise be good for the species. This cannot be done efficiently with tobacco-paper, but it may be done with tobacco-paper and copious atmospheric moisture—the one, of course, as much as possible without the other.



One is, therefore, while stimulating growth, possibly enervating the plant's system, which will bring in its train evils, and perhaps eventually death; but far better, I say, have a clean-looking plant, supposing it be pining away, than a plant infested with vermin, going from bad to worse. This, of course, is an extreme case, but it, nevertheless, represents what has occurred over and over again. Fortunately, the great majority of Orchids, even from hot climates, submit themselves to artificial cultivation with very good grace, and in some cases the cultivated plant seems to surpass the same species in a state of nature, but not without a sensible appreciation of what is really needed, in order to develop the plant with what might be called constitutional safety.

**CLIMATES.**—Well, then, as to system, there is a probability of a culturist being successful with a collection of Orchids in two different houses or climates, but he will be all the more successful if he can divide them into three sets. With three distinct climates as to heat, ventilation, and moisture, there need not be much difficulty in managing Orchids. The first, or the cool house, should be moist, airy, and pretty evenly balanced as to temperature throughout the year. The second, or the intermediate house, should also be moist, a little closer in the matter of ventilation, in winter particularly, with a summer temperature higher than that of the cool-house, and not varying quite so much from the cool one in temperature in winter. The third, or tropical house, should be moist, very moist under great heat, with copious ventilation when summer heat prevails, only it must be shut up early, and should never have an atmosphere particularly dry, and never be allowed to get too cold at any season.

With such diverse climates, and the proper apportioning of the plants in them, and a keen eye to keep down insects, there is no difficulty in the culture of the great body of Orchids which the people admire. One thing cannot be too prominently pressed forward, and that is atmospheric moisture. The want of this is the loss of thousands of plants. I often think there is a bit of heedlessness about some growers in this matter. I do not say that neglect for a day or two will do harm, but a fortnight's neglect will bring about a state of things which it may take a year to remedy, and the plants' health will be irreparably injured. There is no doubt that one may overdo a house with moisture, in winter particularly, but it is scarcely possible to do it in summer. Beware, however, and do not bathe the plants overhead, nor keep them in a continuously wet state over leaves and pseudo-bulbs. When I say the grower can scarcely overdo the moisture supply, I mean, of course, the atmospheric moisture; the moisture the man in charge distributes over the tables and paths, &c. for the plants to take up, according to their need.

**WATERING.**—Some judgment must be used in watering at the roots, and the man who waters, if he does not know, must be instructed as to what kind of material the roots are embedded in, and if much moisture be needed. It will take, for instance, four times the quantity of water to give an adequate root-supply to a Masdevallia that it will do to a Cattleya unless the Cattleya is actually suspended on a block in a high, airy house. The Masdevallia, in fact, will take nearly as much moisture, even at the root, as you can give it during summer, if it be under-potted, only there is a danger that if the moisture lies about the young leads which are coming up, some of them may probably damp off. Mark this, they abhor anything in the shape of drought, particularly in the atmosphere, at any period of the year. Let the young grower observe particularly that, with very few exceptions, one of the golden rules of Orchid culture is the creation and keeping up of a moist atmospheric medium corresponding in some degree to the heat of the climate. With that he will find mere watering at the root, especially of plants in pots, not so absolutely essential, that is, there will not be the same need for so much of it.—JAMES ANDERSON, in *Florist*.

#### NOTES FROM THE COLLEGE GARDENS, DUBLIN.

RECENTLY, while going over to the International Horticultural Show in Manchester, I had the pleasure of seeing these fine old gardens. Passing, on entering, rare specimens of trees and shrubs, the eye catches the mixed herbaceous borders, containing an excellent selection of good hardy flowers, such as might be had, for interest or effect, in any ordinary garden—the smaller growing towards the margins and the taller inside, gradually undulating, yet so intermixed, as to allow full play for air and sun-light. This system prevails in all the borders. There were some good Carnations that would pass the florist test, and others with fringed margins, such as Painted Lady, that makes one regret that any arbitrary rules would reject. So of Pansies and various members of the Dianthus family, especially two single Japanese, superior to anything noticed elsewhere. In partially shaded nooks here and there you see a rare Primula, or a curious Auricula, having, perhaps, a history of its own. Though having seen many gardens and many hardy collections, the most varied of hardy Primulas are here, and perfect specimens of health—from *P. acaulis* and its varieties to the newer varieties of *P. cortusoides* or Sieboldi type; tall Phloxes in the background alternate with *Helinium autumnale*, or with monster Sunflowers; Aquilegias with the Japan Anemones; Dahlias with the new early flowering perennial Chrysanthemums, or, perhaps, as interesting, the double Dahlia with the new single Delphiniums; the Salvias and Veronicas with *Oenotheras*; Scabious with Geums, and so on to less known popular flowers—the interest never flags, and the combinations are ever effective. These beds and borders are seldom stirred except to get a top dressing or to remove weeds or decayed leaves. Bulbs often remain for years without running the risk of being split through with the spade of a "workman"—in fact, autumn Crocuses were already bursting up, and when the summer occupants yield to King Frost, bulbs and other hardy plants take up the tale of perpetual beauty. There is nothing new, to be sure, in all this, but still people complain of want of variety and beauty in their herbaceous beds and borders. The list of good things to select from is endless, as one can see here any time. In front of the houses are many good and semi-tender things rarely seen outside after such a winter as the last; such shrubs as Veronicas, the Mexican *Choisya ternata*, *Amayllis Ackermanni*, with great vigorous flower stalks, just done blooming; *Belladonna* Lilies, throwing up flower stems; *Crinum capense*, *Schizostylis* and *Tritonias*, *Pentstemons*, the old *Lobelia cardinalis*, almost wholly decimated around here last winter, and many others bearing testimony to the soil, aspect, and mild temperature plants enjoy here. I cannot pass from these borders without specially noting the brilliant blooms of *Tigridia grandiflora*, just opened that morning, flickered like a meteor, and were gone on my return visit. Mr. Burbidge intends to keep his cool houses brilliant in winter, and, judging, for instance, from the appearance of 100 yds. of a walk covered with Chrysanthemums in a hundred different varieties, this will be an easy task; not to speak of admirably grown specimens of *Cinerarias* in pots, and the large freely exposed winter-flowering greenhouse plants. Lilies, like many other good things, are a speciality here, and without wronging any party I saw much larger blooms on outdoor *L. auratus*, *L. speciosum*, and *L. longiflorum* here than indoors when I crossed the channel. I noticed, too, a rather rare *Gladiolus* adjoining, *G. purpurea*, one of Fröbel's hybrids, received from Mr. Gumbleton, Belgrove. Convenient are some of the newer single Dahlias, the Cactus Dahlia included, and not far off, beautiful blooms on double Pyrethrums and the very showy *Calendula officinalis*, to which I may add *Coreopsis Burridgeana*. We found Mr. Burbidge making what he called an Irish bog, and planting it with its peculiar occupants, but before parting from my favourite outdoor hardy plants, I should have noticed the Edelweiss (*Gnaphalium Leontopodium*), succeeding admirably, planted on the top of a wall with some

lime and other rubbish to imitate its native alpine habitat.

Entering the houses, one is struck with the comparative purity of the atmosphere as compared with the stuffy, impure air found in too many. This was explained to us afterwards as being produced by a pneumatic principle in connection with heating and the ascension of heated air, while by the removal of a folding door and the substitution of a screened interlude cold currents are effectually prevented, while there is always a complete absence of a vitiated medium for plant life. The splendid green healthy appearance of stove and greenhouse plants, Orchids, Ferns, &c., all showed the effect of this attention. Though the houses are full to repletion, and though in most of them a high temperature and moist atmosphere have to be maintained, there is not an inch of a drawn stem or a prematurely forced flower. You see a grand specimen of *Phalænopsis grandiflora javanensis* (Javanese variety) bearing fourteen blooms on a single break or spike, and learn it has been in flower for three months; so of *Masdevallias*, *Cypripedium Lawrenceanum* (introduced from Borneo by Mr. Burbidge), various *Cattleyas*; and in cooler houses a number of *Odontoglossums*, notably that perhaps best *O. vexillarium*, *Sophrontis*, *Pleiones*, *Oncidiums*, *Zygopetalums*, *Cœlogyne cristata* and variety *C. corrugata*, a few of the stronger growing *Dendrobiums*, *Lycastes*, and *Disa grandiflora*. Mr. Burbidge finds less trouble from thrip with cool treatment, and the same in a degree is true of other insect pests. The number of curious plants to be noticed would occupy a special number, so I shall finish by referring to the rare Indian Fern (*Actiniopteris radiata*), *Aralia leptophylla*, grafted; *Vitis gongyloides*, growing interwards; the Water Fern (*Ceratopteris thalictroides*), perhaps the only one having roots without any epidermis; the Corkscrew Rush; the *Ouvirandra fenestralis*, plunged and growing at present in washed fibrous loam. I cannot ask your space for a reference to the cool houses, Ferneries, Palm houses, &c.

W. J. M.

*Clonmel.*

**Planting at Bournemouth.**—Any correspondent would much oblige by informing me to whom I should apply for plants ready grown for planting out a new garden in Bournemouth for ornament and shelter. Who is the best nurseryman for Camellias and Vines? Would the Lombardy Poplar, and the *Cupressus sempervirens*, and *Thuja orientalis* survive the winters of Bournemouth? What would be the best sheltering trees and shrubs for the north-east wind?—E. B.

**Spenserian flowers.**—Can any of your readers translate into modern floral language the Coronations and Sops-in-Wine, the pretty Pounce, and Chevisaunce, which figure in the *Shepherd's Calendar*? Are Coronations the same as Carnations, coupled as they are with Sops-in-Wine, which some writers translate Pinks? The pretty Pounce may mean the Pansy. "There is Pansies, that's for thoughts," said poor Ophelia. But what can we make of Chevisaunce? which Spenser says, Shall match with the fair flower-de-luce.

—N.

**Farmers' gardens.**—Every farmer who has a garden for the production of vegetables and small fruits should insist on two points—a rich soil and no weeds. The first is attained by manuring each year; the second by not occupying more ground than can be kept clean. It will be useless to attempt the last mentioned requisite exclusively by hand labour. The garden must be laid out in lines, so that the cultivating and dressing may be done with horse labour at one-tenth the cost of human work, and in a better manner. [What is said to be so good for the farmer in our contemporary the *Country Gentleman* is worth consideration on the part of our gardeners too. There is much effort wasted on the kitchen garden. The days are past when it was a flower garden too. It scarcely ever gets enough attention; all the greater need therefore that the labour spent on it should be wholly profitable.]



## HAVERHOLME PRIORY.

In a rather flat country, though by no means uninteresting, four miles east of Sleaford, stands Haverholme Priory, encompassed by a well-timbered park of some 300 acres, and containing a large herd of deer. At the entrance gate the public road diverges to the left, skirting the domain wall for some little distance, and then cutting in again passes through the park, separating the Priory and home grounds from the kitchen gardens, and so on through Eveden Wood to the pretty village of Ewerley, where is situated one of the oldest churches possessing one of the highest spires in the country. There was a church here when Doomsday Book was compiled, and the spire is 172 ft. high. The Priory, the residence of the Hon. Finch Hatton, is a handsome

south side, and a lawn tennis piece of Grass on the west.

The conservatory, externally an ornamental building, adjoins the mansion, but I need not say that, like most of the houses of this kind, it is totally unfit for plant culture, with the exception of Camellias or Ferns, to which purpose the gardener, Mr. Ward, informed me it was in contemplation to devote it. Like all the old monkish establishments with which I am acquainted, old foundations abound, and many interesting relics have been found. Thus, in the back of the conservatory, forming an interesting feature, partly hidden by Ferns and creeping plants, are grouped stones, which formed the arched doorway of the old Priory vestry chapel, and behind the conservatory, forming a con-

deal of havoc among the shrubs and trees here, even the common Laurel being killed to the ground.

The Kitchen Garden is an excellent one. It contains about four acres, enclosed by substantial walls, on which are trained one of the best lot of Pear trees I have ever met with. It has only been formed some ten or twelve years, therefore the trees are just coming into their prime; they have now pretty well covered the walls, and are for the most part carrying good crops of fine fruit. Both the east walls and one west one are devoted to Pears; indeed, Pears and Apples are the prime feature as regards fruits of the more important kinds. As Peaches and Apricots do not succeed in this part of Lincolnshire in the open air, it is intended to devote the



Large Huntingdon Willow at Haverholme Priory.

castellated building, formerly consisting of red brick, but some 30 or 40 years ago it was cased with stone, which has given it a modern appearance.

The Flower Garden and grounds which surround the Priory are enclosed by an ornamental balustrade wall, and a broad terrace walk runs by its side on the western and southern fronts. From this terrace interesting views are obtained of the surrounding country. The park is for the most part flat, but to the south and south-west, after trending away for some distance in a long stretch of almost level turf, the ground gradually ascends, and the highest parts being clothed with wood still further add to their elevation. The ground enclosed near the Priory includes a pretty flower garden on turf on the

spacious feature in a group of rockwork, are the mill-stones which ground the Corn with which the monks made their bread—at least, so speaks tradition. There is in the conservatory a Fuchsia planted out named Lord Bristol, a large single red kind which has ascended into the roof and thrown out a dense mass of flowers. It is about 30 ft. high and upwards of 20 years old. Near the conservatory and somewhat in the rear is an aviary, enclosing an interesting pair of brown eagles which the Hon. Mr. Finch Hatton captured in Scotland some two or three years ago. One of the most interesting spots at Haverholme, especially to visitors of antiquarian taste, is the ancient cemetery, east of the mansion. It has an irregular outline, and is surrounded by belts of shrubs. The last winter's frost has made a good

Peach wall, some 150 ft. long, to a range of Vineries. On the walls I noticed fine crops of the following kinds of Pears, viz., Louise Bonne of Jersey, Marie Louise, Winter Nelis, Glou. Morceau, British Queen, Beurré Rance, Brown Beurré, Gansel's Bergamot, Beurré Bosc. This garden is approached through ornamental iron gates, and has a central wide Grass path, bounded on each side by pyramidal Pears and Apples from 15 ft. to 20 ft. high, and exceedingly handsome and prolific. The soil hereabout is a heavy loam resting on clay, but deep trenching and the intermixture of ashes and other ameliorating substances have brought it up to a first-rate condition, as was shown by the crops of vegetables which were everything that could be desired. The pyramid and dwarf Apple trees were quite



a picture, so fertile were they. Stirling Castle, Beauty of Kent, Cox's Orange Pippin, Lord Suffield, Warner's King, Cox's Pomona, Court Pendu Plat, Fearn's Pippin, Sturmer Pippin, and Ribston Pippin were especially noticeable. Strawberries are largely grown, the soil being suitable for them, and about 1300 pots are forced in spring. Mr. Ward only grows one kind for this purpose, viz., Sir J. Paxton. He also spoke highly of Oxonian as a rather late variety in the open air. The glass erections are not at present numerous; they are two Peach houses and a number of low forcing houses or pits for Cucumbers, and for wintering bedding plants in, and a span-roofed house devoted to a collection of dinner-table plants. A good range of sheds and offices has been built, and doubtless the glass erections will in due time be made to correspond with the rest of the garden.

**LARGE WILLOW.**—On the north side, outside the walls, is rather a pretty Grass plot, with a pleasant outlook bounded by a low Yew hedge and a flower border called Lady Evaline's garden. And a little further on in the park, within one hundred yards of Haverholme Wood, is one of the finest, if not the largest, Willows in the country, illustrations of which



Trunk of large Willow at Haverholme Priory.

are here given: at 1 ft. from the ground it measures 27 ft. 4 in. round; at 4 ft. it is 20 ft. 5 in.; but at 7 ft., owing to the protruberences at the base of the limbs it is 28 ft. in circumference. About 8 ft. from the ground it breaks into 8 large limbs, each equal to an ordinary sized tree. The spread of branches is on one side 40 ft. and 28 ft. on the other, and the tree, which is of the Huntingdon species, is about 40 ft. high. It is perfectly sound in body and limb and quite healthy, though its age is given as 1000 years. It stands on a slight elevation, very like the bank of a forked river; indeed, one can easily trace an indentation in the surface, probably the ancient bed of the river Slea. E. HOBDAY.

**Gaillardia picta Lorenziana.**—Under this name is described in the number of *L'illustration Horticole* for the current month, with an admirably executed illustrative woodcut, a new and apparently most beautiful race of this well known and ornamental hardy border perennial. To Herr Carl Lorenz, of Erfurt, in Prussia, we are indebted for these acquisitions to our hardy garden, the flowers of which are altogether transformed from the ordinary form of the old *Gaillardia picta*, the outer or ray petals having entirely disappeared, and the usually flat centre being developed into a perfectly spherical mass of distinct florets, ap-

parently one of the most remarkable metamorphoses that has ever been effected in a simple flower by the horticulturist or hybridist. Six distinct and well-marked colours have been obtained and definitely fixed by Herr Lorenz in these handsome novelties which we may hope soon to welcome to our British flower gardens; they are respectively: No. 1, claret red with white segments; 2, amaranth red with yellow segments; 3, golden yellow with claret red heart; 4, golden yellow with amaranth red heart; 5, purple with yellow segments; 6, pure yellow.—W. E. G.

## BOOKS.

**Country Pleasures chiefly in a Garden.** By George Milner. London: Longmans.—This is one of a crop of feeble books which deal with rural life and gardening in a feeble, purposeless way. The writer feels some such pleasant sensations about these matters as are commonly felt, and by some unfortunate combination of circumstances is induced to express them in print. No one fresh or new idea is obtainable out of such productions, the writers of which have probably more money than brains, and pay for the printing of the twaddle, or find a silly publisher. As regards gardening, they have a general impression that

## CATALOGUES RECEIVED.

Harrison and Son's (Leicester) list of Flowering Bulbs for 1881.  
Geo. Cooling and Son's (Bath) Autumn Bulb Catalogue for 1881.  
Joseph Schwartz's (Lyons) list of New Roses.  
Isaac Davies' (Ormskirk) select list of Rhododendrons and Azaleas for 1881-82.  
Young, Oakenhead & Co.'s (Cork) Autumn Bulb and Seed Catalogue for 1881.  
Wm. B. Hartland's (Cork) Autumn Catalogue of Dutch Bulbs.  
Osborn & Son's (Fulham) Fruit tree Catalogue for 1881-82.  
Sherratt & Pointon's (Congleton) Catalogue of Dutch Flower Roots for 1881.  
Jules de Cock's (Ghent) Catalogue of Specialties in the way of Azaleas, Camellias, Dracenas, Palms, Ferns, and other ornamental plants.  
Wm. Paul & Son's (Waltham Cross) Catalogue of Roses for 1881-82.  
Samuel Yates' (Manchester) Catalogue of Flowering Bulbs.  
James Yates' (Stockport) Illustrated Catalogue of Dutch, French, and German Flower Bulbs.  
Alex. J. A. Bruce's (Church Road, Manchester) Descriptive Catalogue of Dutch and other bulbs and Flower Roots.  
Wm. Rumsey's (Waltham Cross) Catalogue of Roses, trees, shrubs, fruit trees, &c.  
R. H. Vertegans' (Edgbaston) list of Dutch bulbs and other spring flowering plants.

## LATE NOTES AND QUESTIONS.

**Glass dust for frosting.**—Where can I procure some glass dust for frosting leaves in decorating?—C. W.

**Seedling Dahha.**—W. Hender.—Not in good condition, but apparently a useful variety.

**Ampelopsis.**—R. M.—They really belong to shrubs, and will not be forgotten in another book.

**A. B.**—The work is already the cheapest of its kind in existence, and the broader margin would make it expensive. We do not think there would be any general demand for it.

**Notice to leave.**—Will some of your legal correspondents inform me how long a notice to leave a head-gardener residing on the place can demand?—W. S.

**Double Petunias.**—Young, Oakenhead & Co., Cork.—The flowers sent from seed sown in February are in every way excellent—large, very double, and though chiefly light kinds, well varied in colour.

**Plants for an exposed position.**—What sort of plants would suit an exposed position (that is, exposed in summer to the sun's rays), so that they would stand heat and drought, not needing water more than twice a week?—COUNTY DOWN AMATEUR.

**Venus' Fly Trap.**—By a typographical error or otherwise, in your last issue the name of the grower of these much admired plants, shown at the late Manchester Exhibition, is given as Mr. Parshaw. It should be Mr. J. Forshaw, of Fulwood Park, Preston, Lancashire.—J. B. J.

**Planting Vines.**—J. B.—By all means plant the Vines in front of the hot-water pipes, about 6 in. from them, so that the cold air passes over the pipes before it reaches the Vines, and that enables you to have a self over the pipes for French Beans, Strawberries, &c.—M.

**Mulching fruit trees.**—In THE GARDEN (p. 311) "Clonmel" is recommended to give his small fruits a heavy mulch of good farmyard manure. Can any one tell me if there is any artificial manure which would be as efficacious, as I have great difficulty in obtaining manure?—F. C.

**Death's-head moth.**—Will "J. B. (see GARDEN, August 20) kindly forward some caterpillar of this moth to The Gardens, Sandes Place, Dorking? Stamps will be sent by return to defray expenses. It is a species greatly needed to improve a collection.—COLLECTOR.

**Shrubs under Beech trees.**—What shrubs or plants will grow well under Beech trees? There are, I believe, but few that will succeed. Will any of the following thrive: Berberis, Hypericum, Furze, Broom, Daffodils, or any bulbous plants, Privet, Ribes, Lilies of the Valley?—A. E.

[When once well established, all the following do remarkably well, viz., all the ponticum varieties of Rhododendrons, Berberis japonica and Aquifolium, Ruscus aculeatus (Butcher's Broom), Hypericum (the common St. John's Wort), and Cotoneaster microphylla. Privet and Ribes do moderately well only, and the only bulbs that thrive in such positions are Daffodils and Snowdrops.—W. W.]

**Barren Plum trees.**—My Plum trees have for years borne no fruit. They are always full of blossom at the proper season, and have been taken up and root pruned, well manured, and still no results.—READER.

[As there is always plenty of blossom, we surmise that it gets destroyed by frost or cutting winds; most probably the latter if the exposure is north or east. Should this prove correct, the remedy of course is protection to the trees when in blossom. If the fruit sets, and yet fails to swell, the

it might in certain cases be better, but how to make it so they say not; of the progress being made or possible they know not an iota. Any progress they seem to have a liking for is that of the crawfish order, which goes backwards, and they maunder about old English gardens without, however, taking any practical lesson from them. Poor Alfred Smee with his chapter on the wild goose flying over the garden, but never alighting therein, was a genius compared to some recent writers. That we are not exaggerating in any degree, the following extract from this book will show: "During this hot weather the ducks seemed to have a fine time of it. They were on the pond all day, and I should think for most of the night. Generally they were occupied in swimming quietly round the shady edge, and in catching certain flies which are to be found in the interstices of an old brick embankment; but occasionally they varied the monotony of this proceeding by turning up their tails and bobbing under the water in that ungraceful and laughable fashion which is one of their peculiarities."

## BOOKS AND PUBLICATIONS RECEIVED.

Rapport sur les Produits Agricoles non Alimentaires de l'Exposition Universelle Internationale de 1878 à Paris; par M. Milmorin, Ancien Juge Suppléant au Tribunal de Commerce de la Seine.



cause may arise from defective root action, owing to a soldened state of the ground, or it may be the very opposite—over dryness; but without seeing the trees and conditions under which they are growing it is difficult to answer such a question satisfactorily.—W. W.]

**Apples.**—Kindly name about a dozen good kinds, say six dessert and six kitchen, to give a succession of fruit from August to February or March. I should like the sorts to be good croppers and of good constitutions, as my ground is somewhat exposed to the east wind, but otherwise, I believe, favourable for Apple culture.—S. C.

[You will find all the following good growers free bearers, and of the best quality in their respective classes. They are named in the order in which they ripen: Kitchen Apples—Lord Suffield, Cellini, Hawthornden, Dumelow's Seedling, Warner's King, and Hambleton Deux Ans. Dessert—Devonshire Quarrenden, King of the Pippins, Cox's Orange Pippin, Margil, Ribston Pippin, and Cockle Pippin.—W. W.]

**A book on soils.**—What is the best from the point of view of cultivation and geological facts rather than analysis? One that would go into the distribution of good and bad soils in these islands desirable.—J.

[There is no such book as you describe. A good work on the subject is very desirable. The Geological Department in Jermyn Street are bringing out surface geological maps, showing the nature of the soils and how derived, whether by decomposition of the beds below or from drift.—ED.]

**Names of fruit.** C. R. Apparently the Summer Strawberry. A. C. B. 1, Marie Louise; 2, Easter Beurre; 3, Old Colmar; 4, Brown Beurre.

**Names of Plants.** W. H. Pittom.—2, *Thuopsis dolabrata variegata*; 4, *Cryptomeria elegans*; 5, *Picea nobilis*; 6, *Picea Nordmanniana*; 7, *Abies excelsa pumila glauca*; 8, *Abies sitchensis*; 9, *Picea lasiocarpa*; 11, *Escallonia macrantha*; 12, *Crataegus pyracantha*; 1 and 3 cannot be named without cones. Four only should be sent in future for naming at one time.—J. D. *Polygonum cuspidatum*.—Beta.—1, *Funkia grandiflora*; 2, *Thuja* of some sort; cannot say which from the small sample sent.—J. P. Apple, Red or Devonshire Quarrenden.—H. H. T.—*Lasiandra macrantha*; *Ferns*, 1 and 2 cannot name from the small morsels, without spores, sent.—W. C.—*Verbasicum Blattaria* (Moth Mullein), rare.—D. Scott.—The White Elder, *Clethra alnifolia*. The Sunflower is, we should say, larger than is usual.—Sub.—*Mac-leaya cordata*.—E. C. (Mullein).—*Aclepias curassavica*; the scrap not in flower is *Rhipsalis saliciformis*.—Patterdale.—*Rubus odoratus*.—R. Shaw.—1, *Hyocymus niger* (Henbane); 2, *Lunaria biennis* (Honesty); others too much withered.—McL.—*Davallia dissecta*.—Marshall.—1, *Hedysarum coronarium*; 2, *Medicago lupulina*; 3, *Trifolium minus*.—J. B.—*Salix repens* var. *argentea*, *Lysimachia thyrsiflora*.—Hevingham.—Double *Petunia* seedling, nothing uncommon.—G. Pim.—Apparently a species of *Eunonymus*, but we cannot name from leaves alone.—E. Molyneux.—1, *Chelone obliqua*; 2, *Helenium autumnale*; 3, *Physostegia imbricata*; 4, *Dianthus hybridus* var.—J. D.—2, apparently *Photinia serrulata*; 4, *Hedera chrysophylla*; 5, *Salvia Grahami*; others next week.—Mac.—*Silene Armeria*.—T. Forbes.—*Sambucus racemosa* (scarlet-berried Elder).—T. B. Brown.—*Abelia rupestris*.—W. V.—1, *Impatiens glandulifera*; 2, *Verbasum phloemoides*; 3, *Achillea Ptarmica* fl. pl.; 4, *Campanula grandis*; 5, *Chrysanthemum segetum*; 6, *Calliopsis tinctoria*; 7, *Tradescantia pilosa*; 8, *Campanula Grossecki*.

## SOCIETIES.

### INTERNATIONAL POTATO SHOW.

THE Seventh Annual Potato Exhibition, held at the Crystal Palace, was opened on Tuesday last by the Lord Mayor. The display, which was an extensive one, was arranged in the nave between the central transept and the tropical department, and the exhibits in the different classes were on two long tables divided by a line of ornamental plants.

Class A was represented by about 240 dishes of perhaps the finest Potatoes ever shown—a remark especially applicable to the first prize lot exhibited by Mr. Ellington, of Soham. This consisted of the following varieties, viz., Blanchard, Magnum Bonum, Bresee's Prolific, Purple King, Trophy, Triumph, Wiltshire Snowflake, Schoolmaster, Beauty of Hebron, Covent Garden Perfection, Grampian, Woodstock Kidney, Porter's Excelsior, Early King, Beauty of Kent, Manhattan, Matchless, Pride of America, International Kidney, Jackson's White Kidney, Rector of Woodstock, Paterson's Victoria, Vicar of Laleham, and Bedford Prolific.

Class B, still more strongly represented, con-

tained over 60 exhibits. In this class the first prize was awarded to Mr. Matthews, of Sittingbourne, for the following varieties, viz., Schoolmaster, Beauty of Hebron, Pride of America, Manhattan, Woodstock Kidney, Vicar of Laleham, Triumph, Holborn Favourite, Porter's Excelsior, Pride of Ontario, Rector of Woodstock, Trophy, and others.

Class C.—The best were the following varieties, viz., Bedford Prolific, Blanchard, Early King, Beauty of Kent, Schoolmaster, Grampian, Vicar of Laleham, Magnum Bonum, Paterson's Excelsior, Woodstock Kidney, Covent Garden Perfection, and Manhattan.

Class D.—Some very excellent collections were exhibited in this class, in which the first prize was awarded to the following varieties, viz., Trophy, Pride of Ontario, Beauty of Hebron, Early Rose, Manhattan, Matchless, Snowflake, Salmon Kidney, and Surprise.

Class E.—The first prize here went to Salmon Kidney, Model, Lye's Favourite, McKinlay's Pride, American Purple, and Edgcott Seedling.

The nurserymen's collections, which were very fine, were arranged on tables on each side of the classes for competition. Messrs. Sutton & Sons, Reading, had a collection of over 100 distinct varieties, consisting of all the best known sorts in cultivation. The collection included Sutton's Woodstock Kidney, Magnum Bonum, which has this season again maintained its good name as a disease resisting variety, Reading Hero, Improved Early Ashleaf, Fillbasket, Schoolmaster, and others. In this collection were also a number of seedlings, some of which have already been proved by the Royal Horticultural Society, and been awarded certificates. Messrs. Carter & Co., High Holborn, showed over 100 varieties—examples of ordinary average field culture, thus exhibiting what growers might expect under ordinary circumstances. Messrs. Webb & Co., Wordsley, exhibited a remarkably well-grown selection, prominent in which were heaps of Schoolmaster and Magnum Bonum. Messrs. Hooper had a grand heap of Queen of the Valley, wholly the produce of one tuber. Messrs. Lee also showed a fine collection from Eltham; and from the Royal Horticultural Society's Gardens at Chiswick came an interesting representative collection. Mr. Fenn, of Sulhamstead, late Woodstock, sent a collection of 30 seedlings, many of much promise.

Generally the show may be considered equal to that of any former year, though the entries were not so numerous as we have known them to be, owing perhaps to many of the usual exhibitors having recently shown at Manchester. In finish and beauty the different samples were not quite equal to those of former years, many varieties being rougher in the skin, probably owing to the extreme heat of the weather during the growing season, but in quality and firmness the crop seemed to be above the average.

Messrs. Veitch and Co. and Messrs. W. Paul and Son exhibited fine collections of Apples—about 150 named varieties on each table. Mr. Cannell exhibited fine stands of Dahlias—show, fancy, pompon (single) in all colours, and a group of what is called the Cactus Dahlia; also a fine collection of cut blooms of Verbenas.

#### Prize List.

Class A.—Twenty-four varieties of Potatoes, nine tubers of each (open).—First prize, £10 10s., W. Ellington, Mildenhall, Soham; second prize, £7 7s., W. Kerr, Dumfries; third prize, £5 5s., James Lye, Market Lavington; fourth prize, £3 3s., W. Finlay, Banbury; fifth prize, £2 2s., Jas. Millen, Newbury; sixth prize, £1 1s., E. H. Gribble, Maidenhead. The first prize in this class is given by Messrs. James Carter & Co., High Holborn; the remainder by the Crystal Palace Company, who contributed thirty-five guineas to the prize fund.

Class B.—Eighteen varieties of Potatoes, open to noblemen and gentlemen's gardeners only.—First prize, £7 7s., James Matthews, Sittingbourne; second prize, £5 5s., W. Crump, Woodstock; third prize, £4 4s., Jas. Millen; fourth prize, £3 3s., Jas. Lye; fifth prize, £2 2s., W. Finlay; sixth prize, £1 1s., T. Cooper, Saxmundham. All the prizes in this class are given (in medals, plate, or money) by Messrs. Sutton & Sons, seedsmen, Reading.

Class C.—Twelve dishes of Potatoes, English varieties, (open).—First prize, £6 6s., W. Ellington; second prize, £4 10s., W. Crump; third prize, £3 10s., James Lye; fourth prize, £2 10s., John Reid, Ayr, N.B.; fifth prize, £1 10s., James Matthews; sixth prize, 15s., W. Kerr. The first prize in this class is given by Messrs. James Carter & Co.; the

second prize by Vice-President Mr. Alderman Hadley; the third prize by Messrs. George Ure & Co., Bonnybridge; the fourth prize by Messrs. Kerr & Fotheringham, Dumfries.

Class D.—Nine dishes of Potatoes, American varieties (open).—First prize, £5 5s., W. Finlay; second prize, £4 4s., W. Kerr; third prize, £3 3s., Messrs. Lott & Hart, Faversham; fourth prize, £2 2s., W. Sedge, Sittingbourne; fifth prize, £1 1s., J. Reid. The first prize in this class is given by Messrs. B. K. Bliss & Son, New York; the second prize by Vice-President James Abbiss, F.R.S., J.P.; the third prize by Messrs. Barr & Sugden, Covent Garden; the fourth prize by the late Mr. Ex-Sheriff Woolton.

Class E.—Six dishes of Potatoes (open).—First prize, £4 4s., W. Finlay; second prize, £3 3s., L. Stanton; third prize, £2 2s., F. Miller; fourth prize, £1 1s., W. Crump; fifth prize, 10s. 6d., G. Bloxham. The first prize in this class is given by Vice-President Peter McKinlay, Esq.; the second prize by Vice-President L. Fawell, Esq.; the third prize by William Holloway, Esq., St. Paul's Churchyard.

Class F.—Three dishes of Potatoes, distinct new varieties (including one dish of Matchless), in commerce, not offered to the public before season 1880 (open).—First prize, £2 10s., R. Dean, Ranelagh Road, Ealing; second prize, £2, W. Kerr; third prize, £1, F. Miller; fourth prize, 10s., J. Reid. All the prizes in this class are given by Messrs. Hooper & Co., Covent Garden.

Class G.—Three dishes of white round Potatoes (open).—First prize, £2, W. Kerr; second prize, £1 10s., Jas. Matthews; third prize, £1, F. Miller; fourth prize, 10s., W. Ellington. The first prize in this class is given by George Wright, Esq., Falkirk; the remainder by the Amies' Chemical Manure Company.

Class H.—Three dishes of coloured round Potatoes (open).—First prize, £2, W. Ellington; second prize, £1 10s., W. Kerr; third prize, £1, F. Miller; fourth prize, 10s., H. E. Gribble. The first prize in this class is given by Mr. Richard Dean, Ealing.

Class I.—Three dishes of white Kidney Potatoes, to include a dish of Wiltshire Snowflake, nine tubers of each (open).—First prize, £2, R. Dean; second prize, £1 10s., F. Miller; third prize, £1, Thos. Pickworth; fourth prize, 10s., J. Wormleighton, Northampton. All the prizes in this class are given by Messrs. Daniels Brothers, Norwich.

Class K.—Three dishes of coloured Kidney Potatoes (open).—First prize, £2, W. Kerr; second prize, £1 10s., James Matthews; third prize, £1, W. Ellington; fourth prize, 10s., T. H. Hill, Witham. The first prize in this class is given by Messrs. Harrison and Sons, Leicester.

Class L.—Dish of Sutton's Magnum Bonum Potato, nine tubers.—First prize, £1 1s., B. West; second prize, 15s., Chas. Ross; third prize, 10s. 6d., P. Cornish, Enfield; fourth prize, 7s. 6d., F. Miller. All the prizes in this class are given by Messrs. Sutton & Sons.

Class M.—Dish of Schoolmaster Potato, nine tubers (open).—First prize, £1 1s., G. Bloxham; second prize, 15s., L. Stanton; third prize, 10s. 6d., W. Ellington; fourth prize, 7s. 6d., James Millen. All the prizes in this class are given by Messrs. Webb & Sons, Wordsley, Stourbridge.

Class N.—Dish of Sutton's Woodstock Kidney Potato, nine tubers.—First prize, £1 1s., L. Stanton; second prize, 15s., F. Miller; third prize, 10s. 6d., C. W. Howard; fourth prize, 7s. 6d., W. Finlay. All the prizes in this class are given by Messrs. Sutton & Sons.

Class O.—Dish of Reading Abbey Potato, nine tubers.—First prize, £1 1s., James Millen; second prize, 15s., W. Finlay; third prize, 10s. 6d., James Matthews; fourth prize, 7s. 6d., C. Ross. All the prizes in this class are given by Messrs. Sutton & Sons.

### HARBORNE POTATO EXHIBITION.

SEPT. 16 AND 17.

As a whole this show was an exceedingly good one, the tubers throughout being of fine quality and of equal size. Some 1300 dishes were staged for competition. The premier prize, a silver cup, value £7 7s., offered for the best collection of 12 dishes, was carried off by Mr. C. Cox, Bodicote, near Banbury, with a fine collection. His leading kinds were Woodstock Kidney, International Kidney, King Noble, a grand dish, Wonderful Red, very fine, Edgcott Seedling, and Vicar of Laleham. Mr. C. W. Howard, of Canterbury, made a good second. In the next class Mr. G. Branton was first with fine dishes of Triumph, International Kidney, Woodstock Kidney, very fine; Covent Garden Perfection, and Blanchard. Mr. C. Cox came second. In the third class for four dishes, two of round and two of kidney, Mr. C. W. Howard came first with Schoolmaster, International Kidney, Scotch Blue, and Trophy; second, Mr. G. Branton. In the fourth class, for a dish of any new variety sent out in 1880, Mr. Cox came first with Holborn Favourite (syn., American Favourite), Mr. J. Salt being second with St. Patrick. There were fourteen exhibitors in this class. Among the best kinds were noticeable Sutton's Reading Hero, Pride of America, and Wiltshire Snowflake. For two dishes of cooked Potatoes, one round and one kidney, the first prize went to Mr. J. Deanon for Magnum Bonum and Schoolmaster.



"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare.*

### FEMALE LABOUR IN GARDENS.

PERTINENT remarks have from time to time been made respecting the waste of labour in gardens, but I think so far the direction in which the greatest waste occurs has not been pointed out. It has often struck me as a real waste of physical power to see a 6-ft. man sitting on a bench sponging plants, or pricking out seedlings, or putting in cuttings, or doing, in fact, many things that girls or women could do quite as well, and in some cases better. For instance, in handling small seedlings their generally taper fingers could manipulate them much better than the often unwieldy paws of the stronger sex, and most assuredly where plant cleaning is in question, their touch would be gentler and progress quite as rapid. One can easily imagine many operations belonging to the garden which could be as well and suitably performed by women as by men. For instance, where conservatories join a mansion, and the work of cleaning, &c., has to be done, many ladies, I feel sure, would prefer to see one or two neatly-dressed girls doing the work than as many men. Apart, too, from the economy of the matter, it would afford suitable employment for many respectable girls who cannot now find work to do. This is no new theory, but one which has been practised here for a long time. I use a large amount of female labour here: in fact, everything that can be is performed by them. I have one girl who for six or seven years has had sole charge of a house 100 ft. long. In this house the bulk of the indoor propagating is done. She puts in all and makes most of the cuttings, and she pots off all, having a little boy to help her. Not only does she pot off small plants with rapidity and in good style, but pots on to specimen size, mixes her own soil, waters, and does all the work of the house of every kind. I have no one here who can surpass her at rapid potting, nor do I see any difference between the general style and appearance of the plants in this house and in those under more muscular supervision, unless, indeed, that it is rather the best. A gardener in rather a large place said when he saw this girl potting plants, "Ah! that just gives me an idea. I have a lot of Grapes spoiling from want of thinning. I can't spare any men for the job, but will set some women on to it to-morrow morning." I saw him some time afterwards and asked him how female labour answered, and he said, first-rate. He had to exercise a little patience at first, but women soon learned the business, and he should always hereafter employ them for it. It is not, however, alone at Grape thinning one has to exercise a little patience; my experience is that all along we must exercise a watchful supervision; but in this respect I find there is little difference between the sexes. The prime factor in the matter is that girl labour is cheaper than that of men, and in many gardens where much labour is needed, were the staff of men reduced and that of women increased, the work would be quite as well done as now and certainly cheaper. One very satisfactory feature of the matter is that I find girls more tractable, and much more eager to make themselves acquainted with their work and their situations permanent than as a rule boys are.

T. SMITH.

Newry.

### THE POTATO HARVEST.

MR. MUIR advocates allowing "the disease to do its worst, and lift what remains afterwards." This is so thoroughly opposite to my experience that I am at a loss to see how he has arrived at such a conclusion, after having tried both early and late lifting. Mr. Muir does not state what is the

nature of the soil he cultivates, which is a matter of no little importance. If his soil is of a light character, his Potatoes may turn out clean and look all the better for being in the ground from July to September, but I should certainly not recommend those who cultivate strong retentive soils to go and do likewise. This year we lifted all our Potatoes in July, and I can safely say that we have not lost a single Potato from disease. A neighbour, through pressure of work, left the same sorts in the ground till September, and has lost the half of them, the soil in both cases being similar—heavy and retentive. I do not say that this early lifting is an infallible cure; it is not so, but if lifted promptly, thoroughly dried, and looked over occasionally after storing in a dry shed, there will be much less loss than by leaving them in the ground to take their chance. Wet is the chief cause of the disease, and I think it at least sounds reasonable to suppose that by lifting the Potatoes out of the wet soil, drying them, and carefully separating the affected tubers from the sound ones, we are using the best means we can to save a very important crop. Mr. Muir says, "If taken up in July some of the tubers might have decayed, and in so doing affected the others, but now there is no danger of anything of the kind happening." Are we to believe from this that the writer has proved that the decaying tubers in the ground do not affect those beside them in the same way as when lifted? If they are out of the ground, the evil can be remedied by picking over the tubers; in the ground the destruction must go on wholesale. Leaving early and second early Potatoes in the ground after they are fit to lift has more than one disadvantage. The ground is often wanted for other crops, such as late Cauliflowers, Cabbages, Turnips, Spinach, Lettuce, &c., and later on in the season it is generally more difficult to get the soil dry, and the weather so favourable as Mr. Muir would wish, thus lessening the chance of getting Potatoes well stored for the winter.

Cuckfield.

R. INGLIS.

**Preserved vegetables again.**—We do not know whether the purveyors of preserved vegetables are relapsing into their old bad practices in respect to the materials employed in the preparation of their commodities, and the manner of packing them in tins, but cases of considerable gastric disturbance following the use of preserved vegetables are once more attracting attention. Assuming—which is a liberal assumption—that the process of preserving is well ordered and properly carried out, and that the material used are as pure and innocuous as they are alleged to be, there must be something very much amiss with the tins. Why not substitute bottles for tins, and take a little more care in the preparation? If these or other effective measures are not speedily adopted, it will become the duty of medical men to use their influence with families to abandon the consumption of preserved vegetables in any form. There is a growing tendency to eke out the supply of fresh vegetables by the use of preserved, and with their aid to prolong the season; but this practice must be interdicted unless the quality of the articles supplied is quickly improved.—*Lancet.* [In a country like this where green vegetables may be had for so great a part of the year, if not the whole of it, there should be little reason to seek them preserved. Better not use them at all, though the choicest "brands" of one or two vegetables are of good quality.—ED.]

**Second crop Roses.**—Mr. Fish asks if the Roses we exhibited at Manchester were the produce of the first or second bloom, to which we reply the second, the first being in full perfection in the last week in July and the first week in August. But for the unfavourable weather which set in later in August, and which, with slight intermissions, has continued ever since, we think our second blooms

would have equalled the first, and that we might have been able to exhibit Roses in the second week in September almost, if not quite, equal to those of July. We know, however, of no race of special autumnal bloomers, and the blooms we are now cutting are chiefly from such well-known and established favourites as Alfred Colomb, General Jacqueminot, Madame Haussman, Beauty of Waltham, Dupuy Jamain, Duke of Edinburgh, Charles Lefebvre, Duke of Connaught, Crimson Bedder, and Auguste Rigotard. We imagine that an election of the best autumn-blooming Hybrid Perpetual Roses would give these and others equally familiar the first place. We have no doubt an advantage over southern growers in our cooler climate and cold clay soil, our Roses maturing more gradually and lasting much later in the autumn than theirs. This is specially the case with Tea Roses, which are grown by us under the same conditions as the Hybrid Perpetuals, and which we are able to show in August from the open ground, in a form which has secured for us the first prizes whenever we have exhibited them.—ROBERT MACK AND SON, Catterick Bridge, Yorkshire.

### NELUMBium LUTEUM.

MR. HOVEY's interesting note on this magnificent Water Lily comes at a very timely moment. It is, indeed, tantalising to would-be possessors of this queen of the western waters to hear of its thriving so satisfactorily in Mr. Hovey's neighbourhood without anything more than ordinary care, while here, notwithstanding the frequent endeavours that have recently been made to cultivate it, nothing but failure has been the result. Has anyone tried this species out of doors in this country? It seems more than probable that, thriving as Mr. Hovey says it does in a pond where the water freezes 1 ft. thick, it should thrive out of doors in England. Twice this year have we had plants sent to us, and twice we have failed to grow it. Mr. Hovey's note points out the cause of these failures, for, under the impression that tropical treatment was required, we have planted our plants by the side of *N. speciosum*, and indeed there is not wanting instances of *N. luteum* having thriven under such treatment, for at Jamaica it is said to grow like a weed. Be that as it may, I mean to take a hint from Mr. Hovey's remarks, and if I am fortunate enough to gain possession of plants next year they shall not be boiled to death. *Nymphæa flava* is a gem amongst its own kinds, and I fail to understand Mr. Hovey's disparaging remarks on its claims to admiration. A flower like a "huge semi-double Pæony" is a tremendous beauty, but we cannot allow it to affect the claims of one "like a Safrano Rose."—B. [We have seen *Nelumbium luteum* flowering strongly and standing over 3 ft. above the water in the Garden of Plants at Paris, where it used to remain out all the winter in a fountain basin, the water rather deep. We believe it would flower out-of-doors in the south of England in a sunny and sheltered spot.]

### THE FLOWER GARDEN.

#### LACED POLYANTHUSES.

THE present year has witnessed a much wider development of laced Polyanthus growing in the north of England, and there cannot be a doubt of the increasing popularity of this charming flower. Its admirers prefer it to the *Auricula*, because it blooms freely in the open garden, without any protection whatever, and it continues for a much longer time in flower. A Polyanthus fancier holds this to be the loveliest of all florist-flowers, having the most perfect points. When shown it needs little help before it is staged; in fact, nothing whatever, except the removal of faulty pips and the proper adjustment of the truss, so as to show its blooms to the greatest advantage.



This season has been noteworthy from the success of at least two first-rate new Polyanthus, which have each held prominent places in the prize list. Congleton Queen or Staffordshire Queen is a dark Polyanthus after the manner of Cheshire Favourite. It was raised some years ago by a Staffordshire collier, and was quietly blooming, unknown to florists, in country gardens, until its fame reached Middleton. It made its appearance in public this year in the first prize lot at the Manchester show, and is a really fine exhibition flower, and a valuable addition to our list of black laced Polyanthus. Mr. Barlow's Sunrise is a new seedling raised by the exhibitor, who deservedly won with it both in London and Manchester. It is a very bright red Polyanthus, clearly fixed, and when freshly opened is a beauty; but it soon becomes coarse and rough, and will not show well when the flowers are old. It has a brighter red than any other Polyanthus, but is a long way behind some of our older sorts, such as George IV. and Prince Regent. Mr. Barlow's other dark seedling, John Bright, is not so good, and has yet to be proved.

There are a good many seedling Polyanthus of great promise waiting the opportunity of showing their merits, much attention having been paid to their growth during the last two years. It is to be hoped that prizes for seedlings may be offered in 1882 at either the northern or southern shows, but they should be strictly limited to those really raised within a stated period. On the last occasion the prizes for both black and red-laced Polyanthus fell to old stagers which had been in gardens, and well known to some for years past, and one of which was already to be had in quantity. This was not the object for which the prizes were intended. Anybody may happen to light on a good Polyanthus in some collier's garden, and thus win a prize that should have fallen to the raiser, and which was offered as an encouragement to new endeavours. Mr. Barlow's two seedlings were of the proper class, and there are believed to be many others of great merit in this neighbourhood known only by the raisers and a select few of their friends. It is rather amusing to note that Smith's seedling Polyanthus Duke of Wellington, which was extolled by the southern florists three years ago, and for which special prizes were offered by the raiser for two years in succession at the southern shows, has never yet been seen at our northern exhibitions. Mr. Cannell promised to bring it down to Manchester last spring, and we were told that it would beat everything, but the event never came off. We should like to see our southern friends with their new flowers, but they must raise something better than the Duke if they are to win with them on our tables, where size counts for little, and good colour and clean lacing are essentials, as well as perfection of form.

This is the time for buying in your stock of plants for next season, before they are placed in their winter quarters. There are plenty of good Polyanthus now to be had, but they will soon be bought up, and there are usually none to be had in the spring either for love or money.

Mr. Douglas gives a pretty full list of the best in his "Florist Flowers," but there are many excellent sorts in the market, all of which should be in a good collection. The following may be added to Mr. Douglas's list to complete it to the present date: Lancashire Hero, Prince Rupert, John Bright, Sunrise, John o' Gaunt, Staffordshire Queen or Congleton Queen, Warrior, Telegraph, Napoleon, and Brilliant.

Lastly, it is rumoured that we shall probably see that fine old show Polyanthus—which has been considered as lost—Pearson's Alex-

ander, in the lists next season. It has been found again in an old garden, and when bloomed last summer it was considered the true flower by the very best judges. Wm. BROOKBANK.

Breckhurst, Didsbury.

#### DAHLIAS, SINGLE AND DOUBLE.

RECENT displays of the fine florist Dahlias, show that the grand old flower still exists in abundance, and is still largely appreciated by the public. Much as exception may be taken to the heavy massiveness and rotund form of the Dahlia, we cannot help admiring it; there is something about the formation of the flower—the marvellous perfection shown in the solid array of its fluted petals and its rich colouring, which attracts admiration and compels the admission that of all the florist double flowers this is the finest. Still, it is evident that big Dahlias are and will be most largely grown by those who aspire to present their flowers with success upon the exhibition table. Let rosarians say what they may, the Dahlia is far more than the Rose a show flower, and though lacking the sweet perfume which characterises the queen of flowers, yet shows more of those peculiar properties in which the florist so much delights. But fortunately the two flowers are not brought into competition, for if the one makes glorious the show table in summer, the other does the same for us in the autumn, and does it nobly, too. But if the large show Dahlias are less grown as garden flowers, or for other uses than for exhibition, it will be less from the competition of the single kinds, popular as they have become, than from the singular beauty and usefulness found in the Pomponé or Bouquet section, as these transcend all others in the quantity of flowers produced and in their adaptability for all decorative purposes. The single Dahlias seem to be finding a section of admirers largely amongst persons who have not grown Dahlias before. If these are not satisfying a want, they are gratifying a taste, but nothing can be more obvious than that people will soon tire of looking at a flower that has so little of form, solidity, or beauty to recommend it as these single flowers. Indeed, there seems little hope that as single flowers they will be largely improved. The rich-coloured Paragon, though introduced into this country 40 years since, still remains for colour and for stoutness and form of petal the best of them all, whilst any attempt to get rid of the big staring mass of fertile organs which form the centre of each flower will but end in their transformation into floral petals, the forerunner of double flowers, and then the end of the single kinds will be at hand. At present nearly all the blooms have thin petals, are crude or starchy in form, do not bloom freely, and serve in but an indifferent degree to decorate the garden. They are, doubtless, pretty when employed to decorate vases or epergnes just as Marguerites, Ox-eyed Daisies, single Asters, or Marigolds are, but in other respects have little claim to admiration.

Bedding Dahlias are, without doubt, a valuable autumn-blooming section. Dwarf, stout, and producing large quantities of fine double flowers, they serve for the decoration of large beds, to enliven masses of shrubs, or to generally enrich the flower garden most effectually. Who could fail to remark upon and to admire the fine masses of these Dahlias at the Crystal Palace, where they do so well, and where, interspersed with some of the hardiest sub-tropical plants, they give so much of life and beauty. I wish some of our cultivators would find room for these, or even for the taller Bouquet kinds, amongst their beds of Solanums, Wigandias, and other large leaved plants. A little bright, but not glaring colour is with these often sadly wanting. I do not know what kinds are grown at the Palace, though I noticed the old purple Zelinda there in strong force, but the following form a capital selection: Aurora, yellow, flushed with crimson; Crimson Gem, rich crimson; Faust, dark shaded maroon; Flora MacDonald, primrose; George Thompson, pale yellow; John Wyatt,

crimson scarlet; Little Wonder, scarlet; Marguerite Bruant, white; Mont Blanc, pure white; Royal Purple, Rising Sun, deep scarlet; and Yellow Pet, clear bright yellow.

**Bouquet Dahlias.**—These have flowers somewhat less in size than the bedding kinds have, but in density and variety of colouring excel them. A very fine selected dozen of these are—Rose Perfection, rosy puce; White Aster, pure white with pointed petals; Professor Bergeat, rosy crimson; Princess Sophie Sovieha, shaded lake; Titania, yellow, tipped with bronze; North Light, scarlet; Prince of Lilliputians, dark maroon; Lady Blanche, pure white; Little Beauty, crimson, tipped white; Louis Rodani, deep shaded lilac; Grass an Wien, shaded buff; and Frau Professor Klug, pale rose. Many of these have hues and markings singularly beautiful, and set up in bunches are very gay and striking.

**Single Dahlias.**—Descending to the single kinds, the rich scarlet Cactus Dahlia interposes, as the only one of its class. It is a very pleasing kind, but unfortunately flowers very sparsely. Probably if pot roots of the preceding year only were planted, the plants would bloom earlier and in greater profusion. Intending purchasers should get these if possible, as spring-struck cuttings always, in making the large tuberous roots, make at the same time so much more top growth. Half-a-dozen very good singles are alba, white; Paragon, maroon, shaded with purple; Yellow Gem, Pink Beauty, Morning Star, bright scarlet; and Glory, deep scarlet. The white kind shown by Mr. Ware, White Queen, may be better than alba, but where there is so much similarity in the flowers it is difficult to give an opinion, unless the respective plants are seen growing. As single Dahlias seed with freedom, and seedlings are easily raised that largely reproduce the features of the parents, of course named kinds cannot expect to have any lengthened popularity. Still the raising of any large number of these entails considerable trouble, and as good kinds are easily kept and propagated, they have a better chance of longevity than have named Cinerarias, Gloxinias, and similar things. Both Bouquet and single Dahlias may be grown well in large pots for greenhouse and conservatory decoration. It is not at all necessary that they should be largely employed for such purposes during the summer, but from the end of September, when white frosts may be looked for, on to Christmas they would prove most valuable. Single or double Dahlias, growing in conjunction with naturally-grown Chrysanthemums, would be indeed pleasing and something to rejoice over. Late-struck cuttings kept restricted in pots through the summer, and shifted into 10-in. pots at the end of August, should make capital plants for late autumn blooming.

**Culture.**—There is literally nothing new to be said as to the culture of show and fancy Dahlias for exhibition. They want ample space, a rich, deep soil, plenty of surface manuring and watering in hot dry weather; also careful thinning of growth, and with some kinds thinning of the flower buds, but they will do well in ordinary garden soil if grown simply to give as much flower as they can, only needing stakes to support them, and such tying as shall prevent the shoots from being blown or broken off. Still, if anything is worth doing well it certainly is cultivating plants of all kinds, and if Dahlias come all the finer and the more beautiful for good cultivation and additional care, give it them by all means. Contrary to general opinion, the show section of Dahlias includes so many various coloured flowers, that beginners are puzzled to understand where the show section ends and the fancy sorts begin; of course the growers and the connoisseurs know and that is enough, but the division seems rather inexplicable. My preference in dealing with the show section is strongly in favour of self-coloured kinds, as these have distinctiveness which renders them very beautiful. Of these I think a good selection of twelve will be found in Henry Bond, rosy lilac; John Wyatt, crimson scarlet; James Cocker, purple; John Neville Keynes, yellow;



John Standish, bright red; Chris. Ridley, bright crimson; Alexander Cramond, maroon, shaded crimson; James Service, dark crimson; Mrs. Kershaw, white; Rosy Morn, clear rose; Prince Bismarck, purplish puce; and Ovid, rich puce. Fancy kinds so called include some very large and yet singularly striking flowers. Mrs. Saunders, yellow, tipped with white, sometimes deepening into mauve, is a remarkable flower; Oracle is a grand striped kind; Mons. Chauvière has a lilac ground spotted with crimson; Lucy Fawcett, pale yellow, spotted with crimson; Henry Glasscock, buff, with crimson stripe; Frederick Smith, deep lilac, striped with purple; Fanny Sturt, red, tipped with white; Florence Stark, white, striped with purple; Galety, yellow, striped with red; Peacock, dark purple maroon, tipped with white; Robert Burns, lilac, flaked with crimson; and Queen Mab, white, edged with scarlet, all good sorts, and the twenty-four would make up a fine stand. Those who may wish to grow a few good kinds will not go far wrong if they start with this selection. A. D.

#### NEW VARIETIES OF AGERATUM.

I HAVE during the summer—now drawing to a close—grown for trial and comparison with older sorts four new varieties of the above named useful and free-flowering bedding plants, two of which are of English, and two of Continental origin. The two first-named came to me direct from their raisers in the autumn of last year, and are named respectively Malvern Beauty and Aldenham Gem; with the first of these I am much pleased, as the habit of growth is dwarf and compact, a little taller than Swanley Gem, but raising its flowers better above the foliage, and altogether more effective for ribbon borders or pattern beds. I believe the stock of this variety has been acquired by Messrs. Cannell, of Swanley, who sent it out this spring. The other variety, though also dwarf and compact in habit, is not so free flowering, and its flowers are of a paler shade of colour. The two Continental varieties came to me this spring from the well-known French nurseryman, M. Felix Crousse, of Nancy, and are named respectively Azur and Comte de Cirecourt; the former is in my opinion by far the better of the two, being close, compact, and dwarf in habit of growth and exceedingly free blooming, the flowers being of a deeper shade than those of Malvern Beauty, which in other respects this variety much resembles, and to which it will make a useful companion for bedding purposes. The other French variety is of decidedly coarse habit of growth and late in coming into bloom, requiring perhaps warmer summers than we are favoured with in this country to mature its growths earlier in the season, as it did not commence to bloom with me till the commencement of September. I consider it quite useless as a bedding plant. W. E. G.

#### LOBELIA SYPHILITICA.

BEFORE this and its varieties can be said to be unfit for the garden border, let us be shown something better to take their place. Just now hardy flowers are not so plentiful that we can spare any one of them, I have in my eyes a good batch of *Venidium calendulaceum* through which are scattered a number of *Lobelias* of the blue and purple shades, and well backed up by a mass of pale lilac Asters. The clump would not look half as well were any taken away, and there is no other blue flower suitable just now, and, bear in mind, these *Lobelias* have been in bloom two months or more. They occur in various shades, from pure white to deep purple, blue, and bright rose, and are scattered here and there through the borders besides, and not one could be spared. I have not the least objection to a wet ditch being decorated, but the garden proper must not be robbed for the purpose. T. SMITH.

*Nervy.*  
[*Lobelia syphilitica* we have seen in all possible positions, including its native country, also its growth in rich moist soil in Ireland, and have no

hesitation in saying that it is typical of the plants that are not worth growing out of the botanical collection. But it seems clear there are various plants growing by this name, and one just brought us by Mr. Ellacombe is not the plant wild about Nagara. Mr. Ellacombe has a very good blue form recently obtained from America. The hybrid forms of *syphilitica* we have seen in various positions, but never knew them equal in beauty to the scarlet *Lobelia* itself. In habit, too they are inferior. What the future may do we know not, but at present they certainly belong to a second rate order of plants. As to blue autumnal flowers, *Salvia patens* and the *Delphiniums*, grown to bloom late, are very fine now.—ED.]

**Annuals for autumn sowing.**—Many doubt the ability of such annuals as are usually recommended for spring blooming to pass through our winters safely; but, having had rather an extensive acquaintance with them for some years, I am inclined to think that the majority of failures arise from sowing too soon or in too rich soil, for either of these causes will result in over-luxuriance and consequent failure. When sown in rather poor soil, and just early enough to make good sturdy little plants before winter sets in, anyone may rely on the following withstanding our winters well. We sow about the last week in August, and prick them out into nursery beds about the middle of September, pinching the points out to induce dwarf, sturdy growth, when they are fit for transferring to flower beds in October. *Silene pendula*, *S. pendula compacta*, and *Silene ruberrima* are excellent plants, with rosy-pink flowers that never fail to make a good display. Forget-me-nots—*Myosotis dissitiflora*, *sylvatica*, and *arvensis*—require sowing earlier, or about the middle of June, to make good plants. They never fail to make lovely beds of various shades of blue. *Limnanthes Douglasi*, another hardy annual from California, produces quite a mass of pretty straw-coloured flowers. *Nemophila insignis* and *N. discoidalis* make pretty beds, and in very exposed gardens are worth sowing in small pots and wintering under glass in case those planted out happen to fail; the same remark also applies to *Saponaria calabrica*, *Collinsias*, *Eschscholtzias*, *Godetias*, *Clarkia pulchella*, and others; but nearly all, if sown late on beds to flower where they are sown, say middle of September, will withstand the severest winters.—Field.

**Spenserian flowers** (p. 335).—Mr. Prior, in his work on the "Popular Names of British Plants," refers to these as follows: *Coronation*—the older and more correct spelling of *Carnation*, from its middle-age Latin name *Vettonica coronaria*, and so called from its flowers being used in chaplets, *coronæ*. *Sops in Wine*—from the flower being used to flavour wine. Chaucer says of it, writing in Edward III.'s reign:

There springen herbes grete and smale,  
The licoris and setewale,  
And many a clove gilfofe,  
And notmeuge to put in ale,  
Whether it be moist or stale.

—*Rime of Sire Thopas.*

The plant intended was the Clove Pink, Gilfofe or Gilliflower. *Pawnee*, in Spenser, the Pansy. *Chevisauce*—evidently a misprint for *Cherisaunce*, Comfort, Heart's-ease, the *Cheiri* or Wallflower, the plant to which the name of Heart's-ease was originally given. The word is omitted in the glossaries to Spenser, but occurs in Chaucer's "Romaunt of the Rose":

Then dismayed I left all soole  
Forwarie, forwarded as a foole,  
For I knew ne cherisaunce.

*Cheiri* is the Moorish word *Keiri* with which the plant now so familiar to us was brought hither from Spain.—EDWIN JACKSON, *Llandegai, Bangor.*

**Soils for alpine plants.**—All cultivators of alpine plants must have met with difficulties in the growth of many, chiefly caused, as in my own case, by not sufficiently considering the proper soil. I have just received an interesting catalogue of alpine plants from Mr. H. Gusmus, of Villah, which gives a good deal of information as to the

necessary soils. The subjoined will readily show how important it would be for cultivators to have a complete list showing the character of soil required. In my own collection many failures must be attributed to an excess of limestone, but still I hope by the aid of a granitic rockery to succeed with many plants: *Drabas*, *Dianthus*, *Silenes*, *Androsaces*, *Saxifragas*, and others. Collectors of plants could render growers great assistance by noting the geological formation and soil in which each species grows and in the "Flowers of the Open Air," now being published in THE GARDEN, I need not say that all cultural remarks are of great value:—

#### Retentive or Clay soil.

<i>Thalictrum alpinum</i>	<i>Alyssum Wulfenianum</i>
<i>Anemone Halleri</i>	<i>Draba Gauteri</i>
" <i>montana</i>	" <i>tomentososa</i>
" <i>narcissiflora</i>	" <i>ciliata</i>
" <i>alpina</i>	" <i>incana</i>
" <i>Burscheriana</i>	<i>Thlaspi</i>
<i>Ranunculus rutaeifolius</i>	<i>Viola alpina</i>
" <i>anemonoides</i>	<i>Drosera</i>
" <i>Sequiæ</i>	<i>Parnassia palustris</i>
" <i>parnassicifolius</i>	<i>Gypsophila repens</i>

#### Loamy Soil.

<i>Atragene alpina</i>	<i>Iberis saxatilis</i>
<i>Anemone vernalis</i>	<i>Helianthemum vulgare</i>
" <i>trifolia</i>	<i>Viola biflora</i>
" <i>apennina</i>	" <i>heterophylla</i>
<i>Ranunculus acronitifolius</i>	" <i>calcarata</i>
" <i>platanifolius</i>	" <i>cenisia</i>
" <i>parnassicifolius</i>	" <i>cornuta</i>
<i>Trollius</i> (generally)	<i>Parnassia palustris</i>
<i>Helleborus</i> (generally)	<i>Dianthus sylvestris</i>
<i>Delphinium elatum</i>	" <i>monspessulanus</i>
<i>Epimedium</i>	<i>Saponaria bellidifolia</i>
<i>Cardamine alpina</i>	<i>Silene Elizabethæ</i>
<i>Dentaria</i> (generally)	" <i>quadridens</i>
<i>Alyssum alpestre</i>	" <i>alpestris</i>
<i>Herniaria saxatilis</i>	<i>Lychnis alpina</i>
<i>Draba confusa</i>	" <i>Flos Jovis</i>

#### Limestone.

<i>Anemone baldensis</i>	<i>Draba rupestris</i>
<i>Ranunculus alpestris</i>	" <i>nivalis</i>
" <i>Thora</i>	<i>Hutchinsia alpina</i>
" <i>saxatilis</i>	<i>Viola pinnata</i>
" <i>hybridus</i>	" <i>Zoysi</i>
" <i>montanus</i>	<i>Polygala alpestris</i>
" <i>Villarsii</i>	" <i>Clammarum</i>
<i>Aquilegia</i> (generally)	<i>Dianthus alpinus</i>
<i>Aconitum</i> (generally)	<i>Saponaria ocyroides</i>
<i>Papaver</i> (generally)	" <i>occidentale</i>
<i>Erysimum Cheiranthus</i>	<i>Silene Saxifraga</i>
<i>Petrocallis pyrenaica</i>	" <i>vallesia</i>
<i>Draba aizoides</i>	" <i>acutis</i>
" <i>lasiocarpa</i>	

#### Soil free from Limestone.

<i>Thalictrum alpinum</i>	<i>Draba frigida</i>
<i>Anemone vernalis</i>	" <i>incana</i>
" <i>Burscheriana</i>	<i>Hutchinsia brevicaulis</i>
<i>Ranunculus rutaeifolius</i>	<i>Viola lutea</i>
" <i>glacialis</i>	" <i>nummulariaefolia</i>
" <i>crenatus</i>	<i>Drosera</i>
<i>Cardamine asarifolia</i>	<i>Dianthus rigidus</i>
" <i>resedifolia</i>	" <i>glacialis</i>
" <i>trifolia</i>	<i>Saponaria lutea</i>
<i>Alyssum Wulfenianum</i>	<i>Silene Pumilio</i>
<i>Draba Zühlbruckneri</i>	" <i>floribunda</i>
" <i>stellata</i>	" <i>rupestris</i>

This catalogue includes about 1000 species in all.  
—JEFFERY WHITEHEAD, *Southwood, Bickley.*

[A very interesting subject, the importance of which may, however, be exaggerated. In Nature many plants are found wild on certain soils, and reasons may sometimes be found for their presence on soils of a certain character, but they are not always connected with the soil, but with climate, altitude, and the presence or absence of other kinds of vegetation. For instance, *Iberis saxatilis* and *Silene alpestris* will not refuse to grow in any soil in which we place them. In the majority of cases it would limit progress in this very beautiful branch of gardening to be over particular about the soil for the majority of plants. Shade, drought, ill-constructed rockeries, and slugs cause the death of many cultivated alpine plants for one that is lost through a mistake as to the kind of soil. *Dentarias* in the above list are put down for loam, and no doubt they are found in it naturally, but we never saw *Dentarias* really happy and vigorous in a garden except in bog earth. The wonder is not that we fail to grow some species, but that we can grow so many from many different districts and elevations in one spot of ground, as in Mr. Whitehead's wonderfully stored rock garden. Do what we will, we cannot in such a space imitate the conditions of the soil of the vast countries where such plants are found; but we have proof that we



can grow the great majority of flowers without doing so.—E.D.]

**Plants for an exposed position** (p. 337).—The following will all bear heat and drought, and thrive and flower well under the circumstances detailed by "County Down Amateur," viz.: *Thymus serpyllum* (wild Thyme), *Thalictrum minus*, *Sempervivum* (Houseleeks, any kind), *Saxifragas* (any of the encrusted and kidney-leaved kinds), *Iberis* (any kinds), *Gnaphalium* (various), *Dianthus plumarius* and *petraeus*, *Helianthemum* (Sun Roses), *Sedums* (endless variety), *Alyssum saxatile* (Rock Alyssum), *Erinus alpinus*, *Antirrhinum* (Snapdragon), *Aubrietia*, *Arabis* (various), *Silene Schafta*, *Mesembryanthemum* (various), *Petunias*, *Portulaca*, *Calandrinia umbellata*. I would recommend him to bury, either wholly or in part, a few stones, which will have the effect of retaining moisture for a lengthened period, and also to completely cover his position with plants to check the evaporation as much as possible. Good rich soil again does not dry up so quickly as common poor soil, and I think it would be a wise proceeding on his part to enrich his position with a liberal admixture of leaf-mould or decaying manure.—EDWIN JACKSON, *Llandegai, Bangor, Carnarvonshire*.

—"County Down Amateur" omits to say if the position is inside a conservatory, a sunny window, an open porch, or verandah, inside or out, or where. We may, however, suppose that it is inside somewhere; if so, the plants that would suffer least from infrequent watering would be succulent plants, such as *Cacti*, *Echeverias*, *Agaves*, *Rocheas*, *Mesembryanthemums*, *Crassulas*, and similar things; also some of the Cape species of *Geranium*, as *echinatum*, *triste*, and others of the succulent and few leaved sorts. *Trichinium Manglesi* would be at home in such a position; but so much depends upon their possible treatment—whether to be grown in pots, or planted out—in fact, it is impossible to give exact information without a knowledge of the position itself.—W.

**Pansies.**—Will you kindly favour me with the names of a few of the best Pansies in each class?—H. W.

[*Dark Selfs.*—Alexander Watt, Beacon, Captain Knowles, D. L. Whitton, Duke of Edinburgh, Leith Walk Beauty, Luna, Michael Sanders, Paradol, Pilrig Model, Prince Imperial, Robert Black. *White Selfs.*—Improvement, Jenny Anderson, May Queen, Mrs. Goodall, Princess Beatrice, Silverlight. *Yellow Selfs.*—Cherub, Golden Lion, Lizzy Stewart, Miss Ross, Mrs. R. Dodds, Zama. *Blue Selfs.*—Blue Stone, Sunnypark Rival, W. J. Rawlings. *Yellow Grounds.*—Defoe, Ella Murray, Ebor, G. Steedman, J. B. Downie, Inspector, Mrs. Thomson, Robert Donaldson, Polly Travers, Robert Burns, Sir F. Roberts, Senator, William Young. *White Grounds.*—Blue Gown, Bellina, Florence, Jane Grieve, Jessie Foote, Lavinia, Miss Barr, Miss Ritchie, Mrs. McKenzie, Mr. J. Thomson, Mrs. Fraser, Minnie, The Mede, Village Maid. *Fancy Pansies.*—Angus McLeod, D. Wallace, Edward Caird, Tom McComb, True Blue, Lady Hay, Lady Falmouth, Mrs. W. M. Welsh, Countess of Home, Perfection, G. Wemyss, Miss Duncan, Mrs. Skinner, J. Grieve, Mrs. Dewhurst, Mrs. Barrie, W. Cuthbertson, Catherine Agnes, R. Laird, General Grant, Mrs. Taylor, Effie Welsh, Mrs. W. Stewart, Mary Scott, Jubilee, Mrs. Jamieson, J. Millar, and Mrs. F. Murray.—G.]

**Pelargoniums.**—In 1881, a very poor result has come to us from the sacrifice of so much of the variety and beauty of our flower-garden plants in favour of bedding Pelargoniums. Nobody can admire these in good condition and properly placed more than we do. A group of them in a light, cheery greenhouse in winter is charming; but they never had qualities which could justify gardeners in nearly abolishing everything else for them. For the last five weeks their appearance in the London parks has been simply deplorable. The other day we went into a large garden, where an immense number of plants were put out in summer, and had the curiosity to look into a kind of stock-book, which the head man kept. It was rather extensive, and had many

names, but the surprising thing was that they were nearly all Pelargoniums. We walked along the main beds and borders, and everywhere the same decadence and misery of the plants and flowers through the heavy rains were evident. Now, surely, a greater mistake could not have been made than this. Here we have a plant which is said to have so many charms for our flower gardens that nearly everything else is sacrificed for it—*Fuchsia*, *Tritoma*, *Lily*, and tall *Anemone*; we could give a catalogue of several scores of handsome late summer and autumn genera. Everything else is sacrificed, we say, for Pelargoniums which wholly fail in a wet and cold summer and autumn. One of the merits claimed for Pelargoniums is that they flower a long time. Well, they are only put out in June—the early part—and they are several weeks in a poor state before they come into good flower, and long before the end of August this year they were wretched. Really in adverse seasons they do not flower longer than many a bold hardy plant, and it is most unwise to sacrifice a whole garden for them. This year, in a Surrey garden, we noted a bed of border Carnations which flowered as long as they did, and were utterly regardless of the weather. In fact, not a few plants not famous at all for their length of bloom, if they get the choice position and good soil given to the Pelargoniums, would flower satisfactorily as regards length of time. The lesson taught is to reduce these tender plants to their proper proportions in flower gardening, not to depend upon them as we have done, and not to put our garden eggs all in one basket. The scarlet Pelargonium, with its many beautiful varieties, is really a more valuable plant for the winter greenhouse than for the summer flower garden.—*Ficld.*

## NOTES AND QUERIES—FLOWER GARDEN.

**Pentstemons.** These are among the best of the autumn flowers, and deserve more attention on the part of those who mainly frequent their gardens at that season.

**Matricaria inodora fl.-pl.** This Chamomile-like flowering plant has been very full of white double blooms of late. Some may like it, but it has too weedy a look to permit of a lasting popularity. The habit, however, is good.—H.

**Early Chrysanthemums.**—In the southern counties now the earlier Chrysanthemums are making a very good bloom. It would be a good thing if, by raising new forms or some modification of culture, we could see more of them as outdoor flowers.

**Water plants.**—I am anxious to know the name of a water plant which I saw the other day in the ornamental water at the Botanical Gardens, Manchester. It has large ovate leaves about a foot or so in length, but it was not in flower when I saw it. In the same water were growing *Nymphaea lutea*, *Villarsia nymphaeoides*, and *Rumex Hydrolapathum*.—T. CHAPMAN, *Cardiff*. [Probably *Alisma Plantago*.]

**Veronics and other plants.**—I enclose a *Dahlia* which we think fine for cutting, probably *Juarezii*, a *Carex pendula variegata*, and a *Veronica Colensoi glauca*. The *Veronica* is of remarkably neat habit, and was raised from seed from New Zealand, given to me by Mr. Frank Miles. It is of prostrate habit, only rising in height about 6 inches, in the case of plants 1 foot in diameter. I know nothing about the inflorescence. Other *Veronics* from the same source promise to be very distinct, viz., *V. Armstrongi* and *monticola Armstrongi*, both shrubby *Lilliputians*, *Kirkii*, and *canterburyensis*.—WM. ELLIOTT, *Dunpar.*

**Bulbs for a Grave.**—What bulbs would be most suitable to plant upon a grave in a churchyard about three miles from Manchester—those that will best stand the weather, keep in bloom, and look well longest, and not require removal and resetting?—J. S. R.

**Tennis lawn.**—Would some of the readers of THE GARDEN advise us as to the best way to make a tennis lawn even? The lawn here was made about three years ago, and at present it is very uneven. Would it be best to put some fine soil in the depressions and let the grass come up through it? or lift the turf and put the soil under it? or would it be best to take up all the turf and put under it some soil or ashes, and then relay the turf?—CONSTANT READER.

## EDITOR'S TABLE.

**HANDSOME BLACKBERRIES.**—These go for much in the beauty of our autumn woods, but it is not often we take the hint and grow in our gardens some of the handsomer kinds of Blackberry, such as we have from Mr. Carter, Keighley, who writes: "I have forwarded a few twigs of Parsley-leaved Bramble. Two years ago I had an old wall planted with them, and they are now loaded with fruit. We have not had two consecutive fine days for weeks, so that the flavour is nothing like so good as usual. Mixed with Apples, they make good tarts or jam. They are a pretty object, either trained against a wall, round three or four tall stakes, a dead stump, or a trellis. I could pick scores of bunches similar to those sent you." The berries are numerous and much larger than common Blackberries, the foliage is good and graceful, and the effect of the shoots admirable!

**DELPHINIUMS IN AUTUMN.**—Mr. Crook sends richly coloured and large flowers of these from the gardens at Farnboro' Grange, Hants, the individual flowers nearly 2 in. across. "The blooms," he says, "are from some spikes 3 ft. long; the side branches are not opened as yet. These will continue blooming till late in the autumn, thus showing what may be done with these good, showy, hardy plants. We grow them in large quantities, and have had them this season from 4 ft. to 10 ft. high, but I have not tried them before for autumn blooming." We have not before seen such large and perfectly coloured blooms in autumn.

**A GRACEFUL CLEMATIS.**—The northern mountain world seems to be half-garlanded over with Clematis. The following distinct kind with pale yellow blossoms comes to us from Mrs. Davidson, who writes: "I send you some sprays of Clematis graveolens, a Thibetan species, which I raised from seed about 3 years ago. It is not a showy species, but it is exceedingly elegant in growth and foliage, and the feathery seed vessels are so silvery that I find them to be a good addition to a bouquet."

**BEGONIAS OUT OF DOORS.**—Many flowers of these come from Miss Owen, Knockmullen, who says they are seedlings raised in spring. "They are still in full blossom out of doors, uninjured by all the rain we have had lately, and have for a long time made one of the brightest beds in the garden."

**ASTERS FROM CHIPPING NORTON.**—Mr. Betteridge certainly grows his Asters very well. We should like to see the other types of Asters grown as well as he grows the quilled varieties. In addition to the beauty of these plants out of doors in the autumn, the long time they last in the cut state is worth noting; also their extreme delicacy of colour.

**ASTER AMELLUS.**—This handsome Starwort is very pretty at this season, its heads of purple flowers being very pretty in the cut state, as many of the Starworts are. A jar of it thrown together simply is one of the most natural looking and pretty things we have had during the year—we mean that it looks as happy as if growing out of doors. The best Starworts are well worth having for cutting alone. The dust of golden stamens through their purple or lilac flowers makes them beautiful seen near the eye.

**BEAUTIFUL LEAVES.**—"The leaves of *Heuchera Richardsoni* and *Tellima grandiflora* are always effective at this season," Mrs. Davidson



writes in sending specimens of the leaves in question from her garden in Dorsetshire. Really as grown there the leaves of the king plant of the rich woods of Ceylon are not more attractive for their lovely colour, though they may be more showy, than those of these hardy plants, which never fail to grow in any soil or position.

**HELENIUM AUTUMNALE.**—The autumn rains seem to have refreshed this plant again. In any case its bold heads are very handsome just now coming from various sources. The dwarf form is desirable in some cases, but both are good. It is one of the yellow Compositæ, which is really worth growing.

**CHRYSANTHEMUM LACUSTRE.**—This bold "Ox-eye" Daisy comes to us very strong from Chipping Norton. Well grown, it is a distinct plant, but lacking the grace and fine habit of the taller *Pyrethrum serotinum*, which is capable of fine use properly placed. We remember noticing it very well done in the gardens at Guntton Park, and its effect there even after nightfall was singularly good.

**GAILLARDIA ARISTOSA MAXIMA.**—This plant and its allies are very handsome as they come to us from Oxfordshire, the flowers being bold and numerous. One can hardly do justice to the gorgeous effect of the great velvety centres and showy rays.

**HIBISCUS SYRIACUS.**—A good double purplish form of this shrub comes to us from Mr. Stevens. The varieties have been very effective this year, on warm and light soils especially.

**COLCHICUM SPECIOSUM.**—This bold kind, the flowers 3 in. long, and tubes of the same colour nearly 6 in. long, is never pretty by itself when cut; it wants the grass around it, and happy those who have plenty of it and a fitting spot for it on lawn or turf in pleasure ground.

**PYRETHRUMS IN AUTUMN.**—Quite a surprising show of these comes to us from Mr. Betteridge, who certainly grows his things well. We had no idea they were such good autumn flowers, though occasional weak blooms are often seen.

**PENTSTEMON TORREYI.**—Here is a beautiful autumn plant very tall and graceful, and with many coral tubes. An American plant, quite hardy. It would be interesting to see what this would do very carefully placed with a groundwork of some dwarf plant that would not weaken or otherwise interfere with the tall one. From Mr. Betteridge.

**ECHINACEA PURPUREA.**—This is a little better from the south than the north, and the Oxfordshire specimens have some brightness of colour, but it is often dull and poor. Still, a well-grown group of it placed with other autumn flowers would do.

**PYRUS MAULEI FRUIT.**—The fruit of this, which comes to us from Mr. Stevens in some quantity, and appears to be freely borne, has, it is said, a peculiarly agreeable flavour when cooked. We have not tried it.

**DAHLIAS IN LONDON.**—The Dahlia is a flower that London's "blacks" cannot much injure, and Mr. Thomas Balding's collection, sent from Clapham Common, is rich and varied. A fair October gives us a fine Dahlia season if the first sharp frost will only keep away.

**WHITE AND PINK ESCHSCHOLTZIA.**—These come from Mrs. Davidson, who praises them for their pretty autumn bloom on the Dorsetshire hills.

**DAPHNE CNEORUM IN AUTUMN.**—Fresh and well coloured sprays of this come from Farnborough Grange, gathered from broad patches, which flowered profusely in spring. It is one of the most welcome flowers always.

**A DWARF BAMBOO (Bambusa Ragamouski).**—A very pretty little Bamboo with a not pretty name; being dwarf, its effect out-of-doors is not so important as that of the taller kinds, but it is very good for cutting and placing among flowers, more so than the shoots of the taller Bamboo. From Grasmere.

**ANEMONE ELEGANS.**—After the precious white form of the Japan Anemone perhaps this is the most desirable kind, being large and bold and not unpleasant in colour, though pale and undecided.

**GEUM COCCINEUM FL.-PL.**—This plant is a very continuous bloomer, being early, lasting long in spring, and now again affording many flowers. No doubt its continuous bloom depends on the age of the plants to some extent and their growth in fresh ground.

**PENTSTEMONS FROM EDINBURGH.**—How fresh and handsome these are from Scotland on the last days of September! One can hardly complain of the want of autumn flowers in the presence of so much good colour and good form. A very fine batch sent us from Messrs. Dicksons & Co., of Waterloo Place, are all seedlings, and very good ones.

#### A JAVA GARDEN.

PERHAPS few large collections of plants are so little known to Englishmen as that contained in the Buitenzorg Gardens, Java, situated about forty miles from Batavia, at an altitude of 800 ft. The temperature at mid-day is but little lower than that of the coast, though the nights, compared with Batavia, are deliciously cool. The situation has one great drawback, and that is the immense quantity of rain that falls towards the end and beginning of the year. It is considered healthy, and many people residing in Batavia spend Sunday here as often as possible. Within a few miles of the gardens are two fine mountains, attaining a height of nearly 10,000 ft., which the natives call Gunong Salak and Gunong Gedeh. I was encamped on these several days and saw many interesting plants, of which I may have something to say some other time. The gardens at Buitenzorg contain a very varied collection of Indian and other plants, the majority as usual in botanic gardens being but of little value to horticulturists, owing either to their great size or insignificance of flower. As an instance of the former I would mention *Jonesia declinata*, a large tree, completely covered with large trusses of Ixora-like flowers; this, for an Indian garden, has few equals. Many of the plants in this collection were collected by Mr. Teysman in the neighbouring islands of Sumatra, Borneo, Celebes, &c. One of the most attractive plants in flower at the time of my visit was *Medinilla Teysmaniana*, though I am afraid it is too strong a grower for pot culture. Another fine plant discovered by the same traveller is *Teymania altifrons*, a Palm from Sumatra, apparently quite distinct. The collection of climbers is very extensive; they are planted in rows and to a certain extent grouped in families. I noticed two or

three species of *Tetracera*, a straggling plant with very rough leaves, which the natives of Borneo use for the same purposes as we do sand-paper. *Freycinetias*, of which there are many species in Malaysia, are planted against large trees, and are allowed to ramble over them at will; they look not unlike a climbing *Pandanus*. *Batatas paniculata* is a pretty pink climber, common in gardens in most warm countries. *Vitis quadrangularis* is a strange-looking plant, which at a little distance off might easily be mistaken for a Cactus. *Philodendrons* of various sorts, *Monstera deliciosa*, and similar introduced plants completely cover some large trees near the entrance.

In another part of the grounds there is a collection of *Coniferae*, amongst which are good examples of *Araucaria Bidwilli*, *A. columnaris*, *Pinus Merkusi* from Sumatra, and fine specimens of a *Podocarpus* from the Moluccas. Close by were two plants of *Gardenia Stanleyana*, 15 ft. high, covered with their strange looking trumpet-shaped flowers. Many other kinds of *Gardenias* and *Ixoras* were also flowering freely. Palms are very numerous, many as yet undescribed. The one that particularly took my fancy is called here *Cyrtostachys Renda*, and has red stems and leaf-stalks. In wandering about the grounds I came across many well-known Javanese plants such as *Rhododendron javanicum*, *Medinilla javanica*, *Saccolabium Blumei*, *Dendrobium Veitchi*, *Phalænopsis grandiflora*, *P. cornu cervi*, *Vanda tricolor*, &c., all of which I afterwards saw in their native habitat; some on the mountains already mentioned, and others in different parts of the island in much finer condition than when cultivated in Indian gardens. To this I must make one exception, viz., that of a fine plant of *Grammatophyllum speciosum*, growing on an old stump in the gardens fully exposed to sun and air, and which had nine enormous spikes of flower. This was certainly finer than I ever saw the same species wild, though, as a rule, Orchids do but poorly in colonial gardens even where everything desirable as regards their culture appears to be present.

As in all countries in which Europeans have settled, plants associated with home are not neglected. Roses, Dahlias, Pelargoniums, and Fuchsias are planted side by side with *Bougainvilleas*, *Allamandas*, *Clerodendrons*, &c., the one requiring no more attention than the other; though unfortunately the flowers of the English plants are not so fine as with us. Everything cannot be expected to thrive at an elevation of 800 ft. any more than all kinds of plants can be grown in a stove, but much greater variety is possible to the gardener in India without glass than to those in this less favoured climate.

C. CURTIS.

#### HINTS TO AMATEURS.

SUCCESS in gardening, as in affairs of greater importance, is mainly dependent upon careful attention to a variety of little matters too often considered of minor importance. Supposing that an amateur desirous of having a larger garden than that previously possessed becomes the proprietor of one containing, as is usually the case, a very miscellaneous collection of everything that is difficult to kill, such as old Gooseberry and Currant bushes, worn-out Strawberry beds, masses of common perennials, &c., the best advice to give him, previously to purchasing any fresh plants and sticking them in wherever a few inches of vacant ground may be found, is to wait patiently through the first season and carefully mark all things worthy of being preserved. Then a visit should be paid to some place where good things can be seen growing, and there make a list of such plants as are desirable, paying particular at-



tention to their time of flowering, growth, habit &c., so that at the proper planting time they may be arranged according to colour, height, &c.

As soon as the old fruit trees have borne their crops of fruit they should be rooted out, with the exception of a few of the best of them, which may be retained until the newly-planted ones come well into bearing, and select clean young trees of good varieties to occupy their places. In making a selection of fruit trees it is well to pay a visit to some good fruit-tree nursery, when it can be done, and select the trees when in a bearing state, choosing clean, well-grown specimens of good varieties of the different kinds of fruit required. Much disappointment will be thereby saved, and perfect satisfaction ensured.

**Overcrowding.**—There is a great inducement held out to amateurs to attend plant sales, and occasionally purchase ten times the quantity they require; the consequence is they are planted in various parts of the ground to the great detriment of those plants which before were thickly enough crowded together, and after being eyesores during a few months a considerable portion has to be thrown away, being nearly dead when they were obtained. Some persons suppose that, if they can buy large quantities of any article at a reduced price, it must of necessity be cheap, whether they require it or not; but such purchases are often but little better than waste in the end. It is much better to buy what is really wanted than to buy what is not required. Take, for instance, a simple matter like the sowing of annuals. Generally the seeds are small, and it is difficult to avoid sowing somewhat thickly—always too thickly. Now, instead of leaving to grow the entire number of plants that come up, it is far better to thin them out to 1 in. or so apart, and by so doing the individual plants will make a better growth, and the flowers would be much finer, and there will be a longer succession of bloom. Many good and useful annuals are brought into disrepute in the garden because they are not well treated in the matter of culture, and a good hint in regard to quick growing and blooming annuals is to make a fresh sowing just as the first crop is coming into bloom, so as to ensure a supply in the autumn. How can it be supposed that plants growing close together should look well, or produce flowers and fruit to the satisfaction of anyone? There is no room for development, for the ripening of the wood, or the perfect maturation of the bloom buds. How can the roots receive the warmth of the sun, or the benefit of refreshing showers? Yet in many gardens where no expense is spared may still be seen Strawberry beds of such long standing that there is hardly room to place one's finger between the plants. And yet cultivators expect to reap good crops; but too often experience disappointment, and gaze with astonishment on the noble dishes of fruit which are placed before them at horticultural exhibitions. We have seen—and others have seen the same—a score or two of plants two years old, planted 2 ft. from each other, produce a greater weight of fruit than 100 grown as before mentioned, to say nothing of the greater superiority of flavour which good gardeners say is always discernible in well-grown fruits.

**Peas** afford another illustration in point, and yet in the apparently simple matter of their culture but little attention is paid to their habit of growth. Some varieties, if allowed to grow naturally, will branch out from the main stem, and produce bunches of Peas on every spray. This is particularly the case with what is known as the fine dwarf wrinkled marrow varieties. But they are too often sown as thickly as if their growth was of the character of Sangster's No. 1. When Peas are sown their characteristics of height and growth should be noted. Many amateurs with small gardens are prone to grow tall Peas in preference to dwarf kinds, thinking probably the tall ones will produce a greater crop and are more profitable to grow, but it very often happens sufficient room is not afforded these tall varieties, and the crop is a disappointing one. Several reasons

could be advanced for the preference for dwarf over tall varieties of Peas. One row of tall Peas, 7 ft. to 8 ft. high, such as *Ne Plus Ultra*, *British Queen*, and others of like character, will shade more ground than three rows growing about 3 ft. high. They will require as many sticks as three rows of dwarf Peas, and the quality of the produce will not in any way be equal to that taken from the shorter kind. The wind also does damage to tall Peas, but passes over the shorter rows. One of the best Peas for a small garden is *Dr. Maclean*, a variety with deep green foliage, a branching growth, a very fine cropper, and growing some 3 ft. in height when at its tallest stature. If neatness be a great consideration with the grower, he may use galvanised iron wirework, which is suitable for the purpose, may be purchased at a low price, and will last several years. It is sometimes difficult to obtain Pea sticks in certain localities.

R. D.

## ORCHIDS.

### ORCHIDS IN FLOWER.

**Masdevallias.**—Anyone desirous of making a study of this beautiful genus of Orchids can have ample material to work with in the nursery of Messrs. Veitch, Chelsea, where there are no fewer than a score of species and varieties in flower representing every section of the genus, and in many instances by extremely rare kinds. These are *Lindeni*, *Harryana*, *Veitchi* and its variety *splendens*, *Davisi*, *Barleana*, *igneus*, *amabilis* and *Chelsoni*, all of the showy type; *Dayana*, *velifera*, *corniculata*, *maculata*, *macrura* of another type, while belonging to a third there are *bella* and *chimera*, the whole forming a most interesting and beautiful series seldom met with in flower in one collection. In the same nursery are many other noteworthy Orchids, among which are—

**Angræcum Kotschyi**, a handsome species from Madagascar having ivory-white flowers and tail-like spurs 3 in. or 4 in. in length. On one specimen there are fourteen expanded flowers in one spike—the finest that has yet been produced, and seeing that this is only the second year of its existence in cultivation it will hereafter probably develop into a much finer specimen.

**Phalanopsis violacea** proves to be one of the prettiest of the smaller flowered series of the genus, and especially remarkable for the continuous manner in which it bears its flowers. It has been flowering now for several months past, and still the plants promise to yield blooms for some time to come. The contrast of the vivid violet-purple and the pale green in the flower is very striking.

**Odontoglossum Roezli.**—By far the finest variety of this superb Orchid we have yet seen is in flower in this nursery. It is remarkable for the intensely rich and well defined blotches on the lateral sepals of the flower without the paleness and the feathered margins so often seen in ordinary forms. This characteristic makes the plant distinct from all the rest and renders it quite worthy of a varietal name. Another instance of a distinct variation from the type is in a plant of *O. vexillarium*, also in flower; on this the blossoms are a bright clear rose, and have a distinct and sharply defined white margin both on the sepals and lip, rendering it at once distinct and beautiful, and well deserving the name of *marginata*.

**Lælia autumnalis atro-rubens.**—This superb variety so superior to the typical kind is flowering well this year in this collection; even small plants of it have spikes bearing some half dozen large and highly coloured flowers which are extremely showy. Other beautiful kinds are *L. elegans alba*, one of the finest of all Orchids, and *L. devoniensis*.

**A hybrid Cypripedium** has just flowered for the first time. It is a cross between *C. Sedeni* and *C. longifolium*. It partakes strongly of the former type, though distinct enough from it to merit another name. The exquisitely beautiful

*C. Faireanum*, which is now becoming so scarce, is finely in flower, and so are a host of hybrid kinds.

**Zygopetalum Wendlandi**, a rare species, with large blossoms of a pale lilac, is in flower. *Aerides suavisimum* is better than we are wont to see it; on one spike we counted 52 flowers, mostly all expanded. *Vanda cœrulea* is finer in colour this year than usual, and is represented by some remarkably fine examples. Among the curious kinds none are more interesting than *Sigmatotaxis radicans*.

**Odontoglossum grande.**—In Mr. Bull's nursery at Chelsea this well-known Orchid is now making a fine display; a large number of plants of it are in flower, and effectively arranged. This species, old as it is, has but few rivals even among *Odontoglossums* when well grown. Among such a number of plants it is an easy matter to select some forms superior to others both as regards size, brightness, and distinctness of marking. Some of the flowers measure 4 in. and 5 in. across.

**Odontoglossum madrense** is one of the sweetest of Orchids, and specially desirable, as flowering in autumn when there are comparatively few others. The flowers are large and pure white, with the exception of a blotch of olive brown and rich yellow in the centre. They emit a delicious Almond-like perfume, strong enough to pervade the whole house in which the plants are growing. It seems to be a somewhat rarely cultivated species, but few are more deserving of attention or easier to manage.

**Epidendrum dichromum.**—This rare species is represented by a flowering plant. The blossoms remind one of those of *E. macrochilum*, though they are abundantly distinct from those of that species. It is a beautiful Orchid, and one of the finest in the genus.

Among other kinds in flower in this nursery are *Cattleya gigas*, a splendid variety, *Lælia autumnalis atro-rubens*, various forms of *Odontoglossum crispum* *Pescatorei*, and a superb collection of *O. vexillarium*, just coming into flower. There are, moreover, *Oncidium varicosum*, one of the finest of all the *Oncidia*; *Dendrobium heterocarpum philippinense*, mentioned below; numerous *Cypripedia*, and a quantity of that pretty autumn-flowering Orchid *Mesospidium vulcanicum*, and also *Dendrobium canaliculatum*, an exquisitely charming species, small, but rare, interesting, and pretty.—W. G.

**Dendrobium formosum giganteum.**—Lieut.-Col. Deare, Englefield Green, Egham, near Staines, has a freshly imported plant of this Orchid with three flowers to a spike, two of which measure 5-16th in., and the other 5-10th in. across with a lip 2 in. broad.

**Dendrobium philippinense.**—This really is a variety of *D. heterocarpum*, but as one of the names is quite long enough for ordinary use, and the plant is not likely to be confounded with any other *Dendrobe*, we simply call it *D. philippinense*. It is a most valuable Orchid, and we had no idea of its great beauty till we saw it in Messrs. Low's nursery at Clapton, where there is now a large quantity of it in full bloom, some with stout stems bearing clusters composed of two or three dozen flowers. The colour of the blossoms is a pale primrose-yellow, the tip tinged with a richer shade of orange. It is unfortunately almost devoid of the delicious perfume that renders *D. heterocarpum* so desirable, but its flowering at a season when few other Orchids are in bloom renders it a really valuable plant. Large quantities of it are in flower in the Clapton Nursery, and those who wish to see it in that condition should not miss the opportunity thus afforded them.

**Indigenous Sedum.**—Would it be possible for "W. J. M." (Crommel), to tell us what the "indigenous hardy Sedum with very bright crimson flowers" can be—as alluded to in his notice of wild flowers (p. 293)? There is no indigenous *Sedum* answering to the above description. Can it be a new discovery? Scarcely.—THOS. WILLIAMS, Ormskirk.



## COUNTRY SEATS AND GARDENS.

## WARWICK CASTLE.

THERE are not many localities in England more interesting, or that possess more picturesque beauty than that around Warwick. The birth-place of our great poet at Stratford-on-Avon, Coventry, Kenilworth, and Warwick Castle, the grand old fortress-home of one of the most ancient English families, have but few rivals in historic interest or romantic scenery. It is not a little surprising that such a grand old place as Warwick Castle, with its wonderfully picturesque surroundings, is not more written about from a garden point of view; for few of the "show" places can equal it in picturesque grandeur, and none surpass it. No doubt if the garden contained a vast extent of glass structures the horticultural public would be better acquainted with it, though it is not remarkable in this respect it is deserving of a visit from all interested in fine tree growth and landscape beauty.

Like most of the finest English domains, Warwick Castle owes much to its natural situation, than which a better could not be found in the county. The castle occupies a rocky eminence, rising abruptly from the banks of the Avon. The scenery from the terraces on the castle walls is of the richest description. Immediately below, at a depth of well nigh 100 ft., rushes the river over its rocky bed at the very base of the massive walls. A little to the left the water tumbles over a rocky cascade, the noise of which breaks the quietude of the spot. Higher up may be seen some of the oldest cottages of the town, built in the old English style, forming a charming feature in the distance, while beyond them are the ruins of the old bridge which once spanned the Avon, but of which only the disconnected arches remain, and these are draped with Ivy and other foliage in a very pleasing manner, as may be seen by one of our illustrations. Over the ruined arches a beautiful glimpse of a far reaching bend of the river may be obtained, extending to the handsome bridge that took the place of the ruined one just alluded to. In the other direction the view extends over one of the finest specimens of park and sylvan scenery that can be conceived. Beneath are the venerable Cedars as fine as can be seen anywhere, and beyond the Avon winds its silvery stream through the rich green slopes of the park, interspersed by dense masses of foliage and rare tree growth, for which Warwickshire is so famous. The first thing that strikes the stranger is the almost entire absence of the modern style of gardening, and were it not for the geometrical parterre about 100 yards from the castle the place must present much the same appearance as it did a century ago. The surroundings of the castle impress one with their simple grandeur and repose, created exclusively by an undulated and well-diversified surface, noble tree growth, and

broad sweeps of lawn—elements possessing the highest value in garden scenery. The grounds are not marked by needless architectural embellishments—terraces, statuary, vases—which detract in a great degree from the effect of many of the finest residences. The absence, too, at Warwick of formal design or parallelism is conspicuous, yet one would expect to find both in such an old garden. It appears that the grounds were re-arranged about the middle of the last century by "Capability Brown," who created quite a reform in garden design about that period. He has certainly left traces of his bold conception and good judgment at Warwick, as he did at Blenheim and a few other places that were entrusted to him to operate upon, and the finest effects that he conceived are now perfected here, for most of the tree growth has attained its full size. One of the choicest examples of garden landscape scenery is the view extending from the old orangery down to the river, a distance of about a quarter of a

other deciduous trees stand out boldly by themselves from the greensward, and tell, as it were, their own tale unmingled in confused groups as is too often seen in the modern style of planting. Trees such as the Silver Maple may be seen in all their graceful beauty unencumbered by other trees or shrubs, and so with many other trees that drop their boughs naturally, while in contrast with these huge naked boles of the Larch, Scotch Fir, Acacia and Elm, may be seen everywhere in groups of half-a-dozen or so rising directly from the greensward, thus displaying their characteristic growth to advantage. The venerable Cedars of Lebanon that are to be met with in every part of the grounds are the glory of Warwick; than some of these, no finer specimens exist in the country. The largest are on the sloping banks of the river immediately under the castle walls; one in particular is a veritable forest in itself, having huge limbs of immense girth spreading out in all directions, some dropping to the water's

edge. These no doubt are among the first examples of the Lebanon Cedar that were planted in the country, and no doubt are contemporary with those at Goodwood, Pains Hill, Brethby Park, Linton, Syon, and some others. Unlike several places where this Cedar is largely represented, the trees here are not all of an age; on the contrary, there are many of younger growth that are growing on to take the place of the larger trees. It is a matter of regret that young Cedars of Lebanon are not more planted than they are instead of the numbers of other less tried Conifers. A noteworthy instance of the unsuitability of some of the popular modern Coniferæ is afforded in the grounds here, for there are several examples of



Warwick Castle, from the river.

mile. The surface is a gentle slope to the water's edge, and forms a wide vista of turf, bounded on either side by luxuriant tree growth in great variety and with varying tones, from the sombre hue of the Yew to the pale green of the deciduous Cypress, the whole representing a scene of rich sylvan beauty enhanced by the view of the Avon beyond here greatly widened. The first impression is that it is a lake, but on walking through the vista it is seen that the trees have been planted so as to obscure the bends of the river.

THE TREES are not remarkable as far as variety is concerned, and the paucity of modern exotic kinds is conspicuous, though the grand examples of the older trees amply compensate for this. The principal types are the Oak, Horse and Sweet Chestnut, the Plane, and False Acacia, all of which are represented by prodigious specimens, both isolated and in groups; and of Conifers there are the Cedar, Larch, Scotch Fir, and Yew, the latter forming a bold plantation round the ramparts of the fortress, occupying what formerly was a moat. The manner in which the noble tree growth is disposed about the dressed part of the grounds here is worthy of notice. The finest examples both of Cedars, Oaks, or

the Wellingtonia, Deodr, Atlas Cedar, and others that, after having attained as much as 20 ft. or 30 ft. in height, are gradually decaying from the top downwards from some unaccountable reason.

Within the castle walls there is not much to interest the horticultural visitor, but everyone must admire the fine breadth of well-kept lawn in the castle yard, giving it such an air of quiet beauty. Here and there about this yard are some venerable specimens of the Scotch Fir which represent in a striking degree the characteristic growth of the tree, the huge naked red boles and horizontally spreading heads seeming to blend harmoniously with the grey old towers of the castle. One of the most remarkable features here is the approach road, which is cut through a bed of solid red sandstone rock about 100 yards in length and varying in depth from 10 ft. to 30 ft. These rocky sides afford a foothold for myriads of Ferns and similar vegetation, while tangled festoons of brushwood form a canopy of foliage above through which the castle and its surroundings are seen.

The forcing and kitchen garden is not on such a large scale as one would imagine. There is a



snug walled-in kitchen garden well stocked with vegetables, fruits, and flowers. The houses are well built and sufficient in number to meet the demand made upon their resources both as regards fruits and plants. The decorative class of plants are those mostly grown, particularly those which supply an abundance of cut flowers during winter. The fruit houses are well stocked. In the vineries were excellent crops, among which we noted the varieties Canon Hall, Dr. Hogg, Gros Colmar, Lady Downes, Black Alicante, and that deliciously-flavoured Grape Grizzly Frontignan which had it a better appearance would have but few rivals.

In front of the conservatory or orangery which contains that famous work of sculptural art, the Warwick Vase, there is an elaborately designed flower garden kept very well, the whole gleaming with colour in summer, and forming a fitting foreground for the landscape beyond. W. GOLDRING.

## THE ROSE GARDEN.

### AUTUMN BLOOMING ROSES.

NEVER perhaps are Roses more dear to us than in autumn. Their deep rich colours are never so gorgeous as now, and the perfume never so exquisitely sweet. Passing through a quarter of Gloire de Dijon at this time of the year is indeed a treat. What a deep velvety shade, too, we have now in Charles LeFebvre, and what a beautiful clear pink in La France and Mademoiselle Eugénie Verdier! How the paleness of Mademoiselle Bonnaire, Madame Noman, and Souvenir de la Malmaison have given place to a pinky centre, enriching the loveliness of these charming varieties! How intensely bright and beautiful in form is that good old Rose Sénateur Vaisse! What a beautiful clear cherry red we get in two of my old favourites, Dupuy Jamain and Auguste Rigotard! and even Mademoiselle Annie Wood is more pleasing now than earlier. Tea-scented varieties, too, how beautiful they come! What a profusion of flowers! how delicious their scent! and how waxy and perfect! No flagging of the outer petals, as in the scorching days of July and August, but fine cupped Camellia-like shaped flowers.

Then we have some good old sorts which we have almost forgotten until they make us remember they are with us still. Amongst these are Souvenir de la Reine d'Angleterre, a Rose which seldom blooms until late in the autumn; Paul's Victoria, with its lovely tint of white and pink; François Fontaine, a really fine exhibition variety; Madame George Paul, one of the best for autumn purposes, producing quantities of fine well-shaped blooms.

But there are other and better known varieties—Roses which are good throughout the summer months, and which do not wait for autumn in order to display their beauty; they simply give us a second bloom richer in form and better in colour. Amongst the most valuable of this class are Marie Baumann, Alfred Colomb, Duke of Edinburgh, Sénateur Vaisse, Dupuy Jamain, Le Havre, Auguste Rigotard, General Jacqueminot, Baroness Rothschild, Ferdinand de Lesseps, Mademoiselle de Verdier, La France Lord Macaulay, Duc de Wellington, Beauty of Waltham, Paul Neron, Marie Finger, and Louis Van Houtte. Most of the Teas may be classed as such; amongst the best are Gloire de Dijon, Madame Berard, Madame Lambert, Catherine Mermet, Belle Lyonnaise, Devonensis, Celine Forestier (Noisette), and Niphetos.

Now, let me ask, seeing that autumn Roses are so truly lovely, why are all our Rose shows crowded into a few of the early weeks of the season? Could not Rose shows be made to pay, and be patronised later on, say in August and September? Of Roses these last four years there have been a plentiful supply during these months, and blooms but little inferior in form and size to those shown early in the year; indeed, in some seasons like the past two they have been superior. An experiment of

this kind has been tried by the National Rose Society at the late great horticultural gathering at Manchester with, I believe, marked success. Could not other societies encourage autumn showing with advantage?

But it may be asked, How are we to get Roses to bloom from June until the early autumn frosts cut them off? I answer, By a judicious selection of varieties; but then, retorts the enquirer, most of the Hybrid Perpetuals ought to furnish us with a good supply of bloom throughout the summer and autumn months. Granted, they will for the most part, but under particular treatment. What this treatment is I will endeavour to give on a future occasion. W. W. FRETtingham.

Beeston.

### ORIGIN OF MOSS ROSES.

It is now nearly three hundred years ago since the old Provence or Cabbage Rose was introduced; and that it, or its more recently raised representatives, should still find a place in our gardens is not to be wondered at, for all the varieties are deliciously fragrant, perfectly hardy, and mostly of moderate or dwarf growth. To thrive well they should be grown on their own roots, and they require rich soil and close pruning.

**The Moss Rose**, it is said, originated as a sport from the Provence Rose (*C. centifolia*); it would appear to have sported abroad. Mr. Cranston states that it was introduced from Holland in 1596, but as to its origin no satisfactory account has been given. Some years ago Mr. Henry Shailer, then of the Chapel Nursery, Battersea Fields, contributed to the *Gardener, Florist, and Agriculturist* an account of the first red Moss Rose. He states that it was first sent over with some plants of Orange trees from the Italian States to Mr. Wrench, then at Broom House, Fulham. This, according to Mr. Shailer, was about the year 1735. It remained in that family nearly twenty years without being much noticed or circulated, until a nurseryman named Grey, of the Fulham Nursery, now Messrs. Osborn & Sons, brought it into note.

**The White Moss**.—The first production of the white Moss Rose, which took place in the year 1788, was from a sucker or underground shoot. Mr. Shailer states, "My father, Henry Shailer, nurseryman, of Little Chelsea, an extensive grower of Moss Roses (a fact which is set forth in Faulkner's "History of Chelsea"), perceiving it to be a *lusus nature* from a stool of the red Moss, cut it off and budded it on the White Provence, or Rose La Blanche Unique. The buds flowered the following season a pale blush; he budded them again the following season, and it became much whiter; it was then figured in Andrews' "Rosary" under the name of Shailer's White Moss. He then sold it at five guineas per plant, a price at which he continued to sell it for three years; he then entered into a contract for its sale with Messrs. Lee and Kennedy, of Hammersmith, they taking as many plants as he could grow for three years at 20s. per plant, binding him not to sell to any one else under ten guineas per plant. After cutting down the shoots which produced the White Moss, it threw up two weak shoots from which he budded. They flowered the second season from the buds; that was the birth of the striped Moss Rose, a beautiful and delicate variety; but when grown strongly apt to go back to the original parent. The first production of the single Moss Rose, 1807, was a sport of Nature. My father sent some plants of Moss Roses down to a nurseryman of the name of Essex, at Colchester; on the receipt of a letter from that person I went with my father to see it when it was in bloom; I took some cuttings away with me to bud, and fetched the original plant away in the following autumn to our nursery at Little Chelsea; from there we sent out the first plants at five shillings each. On the first production of the old scarlet Moss Rose, which is a semidouble, it flowered on a plant given to his brother, Mr. F. Shailer, of Cook's Ground and Queen's Elm, Chelsea, 1808, nurseryman: the first production of the Moss De Meux was from a sport of Nature

from the old De Meux, in the neighbourhood of Bristol, but brought into a high state of perfection by the Messrs. Lee, of Hammersmith. In regard to the birth of the Sage-leaved Moss Rose, that I must claim myself—it was a sport of Nature. I discovered it on a Sunday afternoon in June, 1813. I sold the whole stock to Messrs. Lee. It is a delicate shell-like form and a beautiful blush, now nearly extinct. As to the first known production of Rose La Blanche Unique or White Provence, it was discovered by Mr. Daniel Grimwood, of Little Chelsea, nurseryman. He was in Norfolk in July, 1775, and when riding leisurely along the road he perceived a Rose of great whiteness in a mill garden. He alighted, and on close inspection discovered it to be a Provence Rose; he then paid a guinea to be allowed to cut a flower, and in cutting it he cut off three buds; he went to the first inn, packed it up, and sent it direct to my father, who was then his foreman, requesting him to bud it, which he did, and two of the buds grew. In the following autumn he went down to the same place, when, for five guineas, he brought the whole stock away; he then made an arrangement with my father to propagate it, allowing him five shillings per plant for three years, at the expiration of which time he sold it out at one guinea per plant, my father's share amounting to upwards of £300. Mr. Grimwood sent the owner of the mill a superb silver tankard, &c., to the amount of £60. Lastly, comes the birth of Shailer's Provence, or Rosa-gracilis, so named by Messrs. Lee; it was raised from the seeds of the Spineless or Virgin's Rose, sown by myself in 1799, and flowered in 1802. We raised numerous varieties from seed up to 1816, and generally sold them to Messrs. Lee, who sent them out under their own naming."

From this interesting account we learn that new Roses fetched much more money when sent out in those days than they do now. We also get information as to the origin of some of the choicer Roses of those days.

**Other Moss Roses**.—Mr. Cranston asserts that "several hundred varieties of the Moss Rose have been raised since the introduction of the original," and of these a dozen or so have been obtained in this country. The best now cultivated are Baron de Wassenae, deep rose, very large and double, and a good climbing Rose; Cristata, or Crested Provence, rosy pink, an interesting and beautiful Rose; Deuil de Paul Fontaine, purplish red; Old Moss, Du Luxembourg, purplish crimson, flowers large and full, a very useful pillar Rose; White Bath, paper white, very beautiful and distinct, one of the best Moss Roses in cultivation; White Perpetual, Félicité Bohain, Marie de Blois, large and full, an excellent Rose; Vandael, Eugène Guinnoiseau, reddish violet; Madame Edouard Ory, fine bright rose; Captain Ingram, dark velvety purple, full and well-formed flowers; Salet, clear rose; Madame William Paul, Souper et Notting, fine bright rose, very fragrant; Celina, velvety, purple and crimson; Angélique Quétier, Gloire de Mosseuses, pale rose, one of the largest and best of the Moss Roses; Eugène de Savoie, Reine Blanche; Comtesse de Murinais, pale flesh changing to white, considered to be one of the hardest of the white Moss Roses; Purpurea rubra; Lanei, dark brilliant rose, flowers large and full, and Etua. These Moss Roses can be divided into two groups—summer flowering and autumn flowering; and in ordering a collection from a nurseryman this should be borne in mind, as some varieties from each group will keep up the display for a considerable period. As they are all fragrant, their value in the garden is greatly enhanced thereby.

**Culture**.—The Moss Roses are mostly of delicate growth, but some are vigorous. Though some of them at least can be made to form good standards, as a rule they succeed best when grown upon low stocks, or otherwise upon their own roots: the latter mode is best suited to the old Moss, and it is in this form the market gardeners round London grow so many for cut purposes. All of them require rather high cultivation and close pruning, and, generally speaking, rather better treatment than ordinary kinds. Mr. Cranston,



to whom we are indebted for some of the foregoing information, goes on to say that "In wet or cold damp they do not thrive, a warm, dry soil being required, and this well supplied annually with manure. If at any time they appear to decline in health, they should be taken up and replanted into fresh loamy soil and cut hard back." It is recommended that they be pruned back short, especially the leading shoots, to within four or five buds of the base. Who does not gladly welcome the charming bud of a Moss Rose? R. D.

## THE FRUIT GARDEN.

### ORCHARD MANAGEMENT.

**The Apple.**—This king of hardy fruits has of late years been brought prominently before the public, owing to the accounts given of the immense shipments of Apple barrels from America, and the ready sale with which they meet in this country, a circumstance which shows that there is a demand for good fruit, if it can be sold at a price within the reach of the many. These American importations have wonderfully influenced our home growers, and, therefore, in Kent at least fruit culture has made rapid progress within these last few years, and, above all, the Apple. As an example of what may be done with it in the form of cordons, espaliers, pyramids or pot trees, I may mention Barham Court, Maidstone, where there is the most complete fruit garden I have ever seen. Here it is well shown that English grown fruit could compete successfully with the best examples of France, or even the Channel Islands. But it is to the orchard system that supplies our markets I shall more fully allude, that being the one most likely to meet the wants of the majority of cultivators, and the only one likely to stand against any amount of competition from abroad. This mode of culture is well carried out by Messrs. Skinner and Son, who count their produce from Apple trees alone by thousands of bushels. I may also refer to Mr. L. Killick, of Langley, who is making dwarf, bush, and pyramid trees a speciality, and who grows only the very best of sorts, both culinary and dessert. English grown Apples of good sorts can hold their own as regards quality with the produce of the most favoured climes. And it is only in disastrous seasons like those of 1879 and 1880 when the summer temperature falls below the average that they fail. Our largest tree-producing nurseries are taxed to their utmost to supply trees. The dark days of neglect and mismanagement of our orchards are nearly over, and people are beginning to be awakened to the fact that in the Apple we have a fruit capable of meeting our highest expectations, and one infinitely varied. Look at the beautiful varieties of Crab; how glorious they are in spring in all shades of blushing pink and white, and see them now bending under glowing wreaths of crimson fruit. Look, too, at a really good orchard on Grass, the best of

all ways for growing Apples in quantity, and say if you can find a fairer sight, either in flower or fruit. The culture, therefore, of so useful a fruit opens a wide field for research. Until recently orchards were starved at the root and pruning was barbarous mutilation; yet, in spite of mismanagement, the trees continued to produce fruit. Now we begin to see that a tree which produces an annual crop in weight almost equal to that of the tree itself—trunk and branches—must needs require food, or exhaustion and its attendant evils will be the result; therefore, we now find the manure cart busy in old orchards said to be worn out, and the result is that they quickly resume their wonted vigour, for an Apple tree on good soil, and carefully attended to at top and root, cannot be said to be worn out as long as branches enough are left to carry a crop.

**This season's crop.**—But to return to how home growers stand at present, I may safely say that it is many a long year since they had such a bountiful crop, and not only is it abundant, but the fruit is clear and of first-rate quality, and,

left and carefully tended, solely for supplying the demand that is yearly increasing for them. And I may mention that when grown on the turf they are generally shaken down, thereby reducing the cost of gathering.

**Selection.**—But for supplying the market, growers are selecting the very best of sorts proved to succeed in their soil, and elevation, and that will follow each other in succession from the earliest Keswick and Juneatings, to the latest varieties that are stored for winter and spring use. As regards selection, I should like to point out an error into which those who contemplate planting too frequently fall, viz., that of going to some noted autumn show of hardy fruit, and then carefully taking down the names of the prize winners, or such as figure most prominently, naturally thinking that they must have been grown out-of-doors, whereas most exhibitors have some of their choicest sorts in pots under glass, or on walls to get them up to the highest perfection of colour. The owners of such fruit would no more think of planting such varieties for producing a daily

supply than they would think of planting Muscat Grapes on open walls. I would also warn intending planters against purchasing trees stated to be adapted for all soils and situations. No, they should look about and see what succeeds in their own neighbourhood, and should go to the market and see which sorts command the best prices; the public will bid high for Ribston Pippins, Golden Pippins, or Margils, but will not go beyond the proper value for showy sorts that, owing to their looks get to the front on the exhibition table; moreover, at any good fruit tree nursery we can find what sorts are being most extensively propagated, and in selecting these it is evident we cannot well go far wrong.

**Apple farming,** as it may be called, on a large scale requires that the relations of landlord and tenant should be upon a firmer basis than they have been of late. Tenants will not incur the necessary out-lay to establish orchards for their successors to reap the harvest. There must be either a system by which the ownership of land can be acquired, or full compensation for improvements granted, not as a privilege, but as a right, before the land is turned to its proper account. We hear of land wanting tenants. Why to grow Apples alone sufficient to supply the country's wants would profitably occupy a good deal of it and of unemployed labourers as well. While we are waiting for statesmen bold enough to take the shackles off our home industries, both the owner, occupier, and labourer are suffering, and countries with free trade in land as well as in produce are reaping the benefit.

**Training.**—I will only briefly refer to this now. How many books have been written and hundreds of illustrations drawn to show the correct mode of training. Yet people tire of these and go back to the old-fashioned tree that spreads its head broad or high according to its habit, and having become satiated with pruning



Warwick Castle: Within the walls, showing Cesar's and Guy's Towers (see page 345).

moreover, tender sorts like King of the Pippins, Cox's Orange Pippin, and others that the late cold winters had almost killed, are not only bearing a fine crop, but the foliage is abundant, and young wood healthy, promising well for another year. The glorious spell of fine weather in early summer caused Apples to swell out free from spots or blemishes, and the late copious rains that proved disastrous to corn growers only helped to fill out to its fullest extent a crop that taxed the trees to their utmost to carry. Although prices have ruled low compared with years of scarcity, yet taken collectively the crop will be a remunerative one. Speaking of low prices, I may mention that some kinds of Apples grown about here specially for the jam manufactories, such as the many varieties of Goffs, although as sour and hard as Crabs, are yet preferred for boiling down to a pulp or jelly, and the trees are so extraordinarily prolific, that a moderate sized tree will produce from fifteen to twenty bushels, the average price for which is 2s. per bushel, carried from the tree by the buyers, and they pay well at that price. In fact, in many orchards where Goffs have been planted for grafting purposes, they are being



and training they go to the opposite extreme and adopt the extension system, and, as a rule, not only adopt it with all its advantages, but all its faults, for like all other things it may be overdone; a tree grown in a natural style does not, in my opinion, mean a tree left to Nature. No; we have grafted a good Apple upon a wilding, and must carefully tend it to keep it in good form. In succeeding chapters on how to best achieve that desirable end, I shall detail the practice that is found to answer best under various circumstances, for no one system will suit all soils and situations.

Linton, Maidstone.

JAMES GROOM.

#### KENTISH CHERRIES.

FULLER says in his "Kentish Worthies" that "Cherries were fetched out of Flanders, and first planted in this country by King Henry VIII." Probably it was the excellent sort known as the Flemish Cherry that was "fetched out of Flanders," which is, as Mr. Darwin remarks, "a very odd-looking fruit, much flattened at the summit and base, with the latter deeply furrowed and borne on a stout, very short footstalk." Cherries were brought to Kent by the Romans; and though some authors say they were lost in the Saxon period, and restored in the reign of Henry VIII., this appears to be an error. Kent has certainly always been famous for Cherries, and nothing can be more beautiful than a Cherry orchard in full blossom, with the masses of white clusters covering the trees, which look from a distance as if wreathed with snow. Cherry trees invariably have a great wealth of blossoms, which are exposed to the proverbial changes and chances of the fickle spring season. They come into blossom in Kent about the same time as the Blackthorn—from the 6th to the 25th of April—and they require suitable weather at the time of fecundation—neither too dry nor too wet, nor too much sun. "A cold blow suits Cherry bloom," say the rustics, and this coincides with experience, and the physiology of the process of fecundation. "Moisture," writes a friend, "is absolutely necessary for the prolongation of the pollen tube. If the sun is too powerful, the stigma of the pistil is apt to become scorched, and the natural moisture being lost, the pollen tube is undeveloped; on the other hand, should the pollen grain be exposed to wet from rain just as it becomes ripe, and before it reaches the stigma, the pollen tube will be developed in a situation where it can never reach its natural destination in the embryo sac." To illustrate this the Cherry trees were in full blossom about the 10th of April, in 1876, when the weather was very wet, with heavy rain and snow showers; the crop of Cherries was very short indeed. In the previous year the blossoms were in full beauty about the 22nd of April; though the weather was cold, it was dry, and a very large crop of Cherries was grown. Cherries are grown upon Grass land, principally in the eastern part of the county between Chatham and Canterbury.

**Orchards.**—There are a few of these near Maidstone, but they are becoming few and far between. The trees are planted at first upon cultivated ground, having between them Hops or fruit bushes, which are taken out after a few years, and Grass seeds are sown. The Cherry trees are set at a distance of 27 ft. to 33 ft. apart, which would give from forty to sixty trees per acre. In some cases the landlord finds the standard trees, and the tenant pays for the labour and finds the bushes, which soon come into bearing. The rent of Cherry orchards is about £8 per acre upon an average. Good managers never mow Grass under Cherry trees, but feed it with fatting sheep, and manure it with from twenty to thirty loads of London manure per acre. Cherries are "worked" on the "Gaskin" or wild Cherry stock, which is found in abundance in the woods. This wood is harder than that of the "Honey Red," and not so liable to gum. Pruning is done tenderly and carefully for the first two or three years; after that very little is requisite. A large grower writes, "I

am very reluctant to prune Cherry trees after the first year or two."

**Varieties.**—The chief sorts cultivated are the Adams' Crown Heart, the earliest sort, allied to the White Heart, but a better bearer; the Black Heart, a very old standard Cherry, the Elton, the Black Eagle, also an early sort; the May Duke, Turkey Heart, Frogmore, Early Bigarreau, Waterloo, also early; the Early Purple Gean, Bigarreau, a large, firm-fleshed, somewhat late and most saleable Cherry; the Morello, used for making Cherry brandy; the Kentish and the Flemish, both of which are admirable for cooking and bottling, having a fine sub-acid flavour, and a brilliant colour. Mr. Darwin remarks upon the first-named of these Cherries that "the stone adheres so firmly to the footstalk that it could be drawn out of the flesh; and this renders the fruit well fitted for drying." Nothing, it must be added, can be more grateful to convalescent patients than the flavour of dried "Kentish" Cherries. Mr. Webb, in his paper on "Fruit Cultivation," remarks, "It is odd that, although our great propagators have of late years added so many excellent and useful varieties to the stock of Apples, Pears, and Plums, yet with Cherries we have had but few additions."

**Picking** is principally done by women, who mount the tall ladders with agility, and get from 9d. to 1s. 3d. per sieve, containing each about 48 lbs. of fruit. A large proportion of the Cherries are sold upon the trees by public or private sale in June and July to fruit-buyers, who take all risks and further expenses upon themselves. Mr. Webb gives a table of prices made at sales by auction by certain well-known orchards. For instance, he states that one large orchard of eighty-eight acres averaged £19 19s. 6d. per acre for fourteen years; another, of three acres, has made £37 4s. per acre for thirteen years. From trustworthy information from another source as to seven typical orchards, it is shown that the fruit growing upon one of these realised by auction £27 14s. per acre in 1874, £24 per acre in 1875, and £41 2s. per acre in 1876; giving an average of £30 18s. 8d. per acre for the three years. In another case £43 per acre was obtained in 1874, £33 10s. in 1875, and £32 8s. in 1876; showing an average of £36 6s. per acre for three years. This, it must be remembered, is for the produce, clear of all expenses of picking, packing, carriage, and commission. The expenses up to the time of sale for rent, tithe, ordinary and extraordinary—for all fruit land pays an extraordinary tithe charge, varying from 6s. to 8s. per acre, in addition to the usual charge—rates, manuring, maintenance, pruning, amount to from £13 to £16 per acre, from which must be deducted the value of the Grass under the trees. For the last twenty-nine years the average price made in London for Cherries grown in Kent has been about 8s. 6d. per sieve. Deducting an average cost of 2s. 8d. per sieve from this price for all expenses after the fruit is grown, a balance of 5s. 10d. per sieve is shown. The highest prices made for Cherries during the period alluded to were in 1876 and 1879, and the lowest in 1875. And it is curious to note that, in spite of foreign competition, the average price per annum obtained for Kentish Cherries during the last ten years is nearly 1s. per sieve higher than the average of the preceding decade. All Cherries, except the Flemish, Kentish, and Morello Cherries, which are used for tarts, preserves, and liqueurs, are bought by fruiterers and costermongers for retailing and hawking for eating purposes, as they do not make good jam. C. WHITEHEAD, in *Royal Agricultural Society's Journal*.

**Muscat of Alexandria.**—This inarched on the Grizzly Frontignan seems to do well. I have it here worked in that way. The berries grow to a good size, and are much rounder than is common in the case of the Muscat—so much so, that some people ask what Grape it is, and when told, make the comment, it is very round for the Muscat. It sets freely in a temperature of 65° along with

Black Hamburgh, with which the house is principally stocked. If anyone has a Grizzly Frontignan and wishes to replace it, they cannot do better than inarch on it Muscat of Alexandria.—A. MACKIE.

**Planting Vines.**—As "T. B." (p. 311) has not planted Vines between the brickwork and hot-water pipes, they may safely close. No great mistake is made in fruit houses than placing hot-water pipes close to the wall or under the footpaths; one half of the heat is exhausted before it reaches the place where it is most wanted. Hot-water pipes should, be kept as well up as circumstances will allow, and distributed as equally as possible—an arrangement which equalises the heat and economises fuel; admitting air against the hot pipes before reaching the Vines is not required; air, in fact, should never be admitted at front till the temperature outside will allow it. Admitting cold air means extra heat in the pipes, dries the atmosphere, and makes it anything but comfortable for the tender shoots. If the heat in the pipes is well regulated, sufficient air will always creep inside in cold weather.—JAMES SMITH, *Waterdule*.

**Young fruit trees in Kent.**—I was through Messrs. Bunyard's nurseries on Monday last, and I find they sell out every fruit tree before it is fit for planting, or, rather, book the orders in advance. Thousands go to Worcestershire and other fruit-growing counties. Standards on Crab or free stocks.—They have fine examples of dwarf bushes quite loaded with lovely fruit. They grow whatever the demand is likely to be the greatest for. I have noted some excellent sorts to supersede our old kinds. One may guess what the growth of the maiden trees is like when I say that one cannot see over the tops of the maiden Apples and Pears, and that the Plums reach 9 ft. and 10 ft. high from the graft.—J. G.

#### NOTES AND QUERIES—FRUIT GARDEN.

**The fruit trees at Barham Court.**—We hear these are very fine this year—the dwarfs, the cordons, and tender Apples in pots have lately been quite beautiful with fine fruit.

**Apple Councillor.**—Could any reader of THE GARDEN oblige me with some information about an Apple named Councillor, which seems to be still grown, but which I cannot find in Scott's "Orchardist"? Is it worth planting?—F. R. MORRISON.

**The Goff Apple.**—A remarkably free bearing Apple, in demand for jam makers and "smashers," as they are called, and is sold by the ton at about £5. Truck-loads of it go to Dundee for mixing with Oranges for marmalade, as it is an acid fruit and very juicy.—J. G.

**Graham's Russet.**—In spring we admired the handsome large trees that this forms in Kent, and now some fruit of it comes from Linton, which is large, but it is a late kind and has still its growth to finish and quality to obtain. We learn from Mr. Groom that it is a great bearer.

**Mealy bug on Vines.** I was much interested on reading a letter, signed "O. P." in your issue of the 17th ult., relating to mealy bug on Vines. I have the pest to deal with on Vines that I have charge of, and I should very much like to know if the tar was applied over the eyes of the Vines as well as the other parts; also the exact proportion of tar used.—ANXIOUS ENQUIRER, *Manchester*.

**Naming Apples.**—Would you kindly name these specimens of Apples, sent me by a friend in Yorkshire, who wants to know their names? They seem to me to be sorts not worth growing. No. 1 is called locally "Codlin;" 2, "Carrodines;" 3, I am told, is a "Bogner."—F. R. M.

[Local Apples we cannot name. Of each Apple for naming several specimens of different sizes should be sent.]

**Stone's or Loddington Apple.**—This has been grown on the farm adjoining our garden for many years. According to my oldest men, it used to be called "Mapson's Seedling;" afterwards it became known in London markets as Stone's Apple, a tenant of that name being the only grower of it for years, until the farm was let to one of the Messrs. Skinner. Our workmen have nearly all got a tree of it in their gardens, and they never remember it failing to bear a crop. It is equally good this year, but the abundance of other kinds keeps the price low.—J. GROOM, *Linton*.



## NOTES FROM NEW ENGLAND.

THE WILD GARDEN.—I know of no more charming phase of gardening than that of beautifying the grounds outside the garden proper by the introduction to them of such handsome and pretty shrubs, vines, and herbs as are perfectly hardy and at home in such a place—plants that will permanently establish or naturalise themselves there without becoming weeds, maintain their own position, and keep up a succession of bloom from earliest spring, when the Snowdrops and Crocuses appear, till autumn when Golden Rods and fringed Gentian for a season bid us adieu. I have read with interest the recent notes in THE GARDEN on this subject, and only wonder how few plants out of the great army well qualified for the purpose your correspondents mention. But leaving to them the disposition of the natives of Europe, Asia, and Africa, let me introduce a few of America. You grow our Kalmias and Rhododendrons better than we have done, improve our Lobelias, beat us with our own Phloxes, hybridise our Sarracenias to our wonder and almost beyond our recognition, find room for many of our wild plants that get but little favour here, nurse our Calochortuses and other fickle Californians that we will scarcely bother with; therefore, we do not presume to teach, but merely suggest to you.

OPEN PLACES.—The Goat's Beard (*Spiræa Aruncus*) makes a large and handsome clump, and if the old flowers be cut early, neat at any time. Our Silphiums are strong but bright and handsome plants without the run-wild coarseness of the perennial Sunflowers. The Black Snakeroot (*Cimicifuga racemosa*) when in blossom in July is one of the handsomest of plants; from a large bunch of thrifty leaves arise a number of very long graceful white racemes often 6 ft. to 8 ft. high. The red and white Baneberry (*Actæa*) may naturalise themselves in front of some bushes or beside a boulder; the red one (*A. spicata* var. *rubra*) is the prettiest, and retains its bunches of glossy Cranberry-like fruit all summer long. The wild Senna (*Cassia marilandica*) will take care of itself by the wayside or wherever else it will get a footing. The Tick Trefoil (*Desmodium*) is rank, and showy, and persistent. Willow herbs (*Epilobium angustifolium*) may be planted off a little way in moist or dryish ground; it matters not for them; they grow, and spread, and bloom enough. Many of our Milkweeds, as *Asclepias incarnata*, *speciosa*, and *phytolaccoides*, will hold their own wherever set, and the orange-flowered species (*tuberosa*) on light or sandy land. The Spikenard (*Aralia racemosa*) as a fine foliated plant will make a comely bush. Dogbanes (*Apocynum*) bloom so long a time, they too may be admitted, but must be held in check else they know no bounds. We all know the utility of Yuccas. Many of our showiest Asters might be naturalised where they could run wild; they will not stay in clumps, but ramble everywhere. Shell-flowers

(*Chelone glabra*) may grow in masses in moist land, and the fragrant Golden Rod (*S. odora*) on grassy banks. Blazing Stars (*Liatris*) may grow on gravelly banks or dryish land; indeed, *Coreopsis* of sorts, *Eschscholtzias*, and Evening Primroses (*Oenothera*) may be allowed to self-sow themselves, and there run wild. *Euphorbia corollata*, if once established, will likely stay for ever there, it sends its roots so deeply into the earth; so does Torrey's *Solanum* (*Solanum Torreyi*) and both are free-blooming plants. In our meadows and hayfields *Rudbeckia hirta* is so gay in summer, that I should commend it for your railway banks and meadow lands where flowers are more desired than Grass. And what can be more lovely than Wood Lilies (*L. philadelphicum*) growing here, there, and everywhere among the Ferns and bushes on open spaces and dry land.

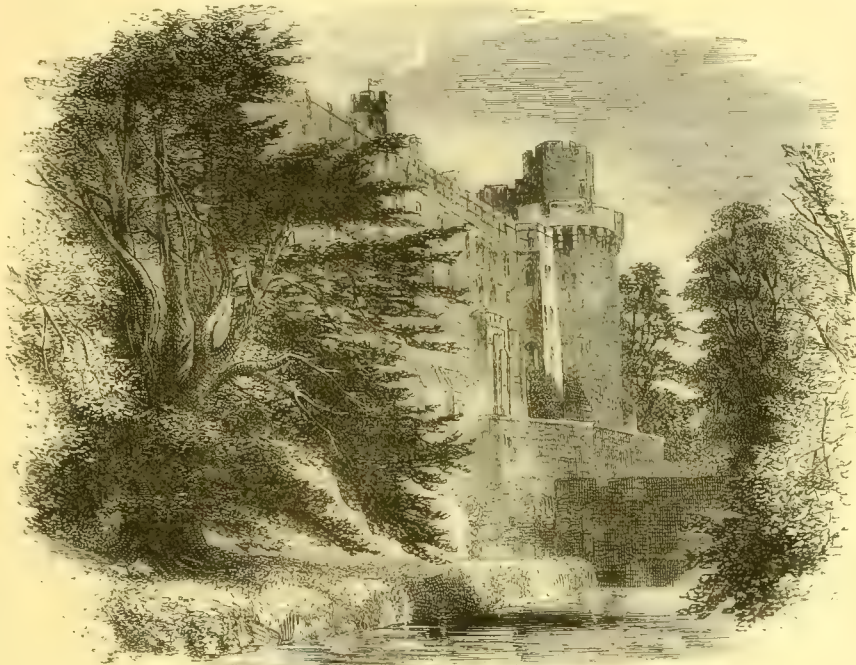
MOIST OR BOG-MEADOW LAND.—I must omit many of our prettiest plants, as Orchids, *Sabbatias*, *Pinguiculas*, and *Helonias*, as, I fear, uncared for, they would not maintain their independence. But what can be prettier than a

Creepers or Clematis may also be planted with it to spread out beyond it. Sweet Fern (*Comptonia asplenifolia*), wild Ceanothus (*Ceanothus americana*), Wax Myrtle (*Myrica cerifera*), Bearberry (*Arctostaphylos Uva-ursi*), and prostrate Juniper (*J. Sabina* var. *procumbens*) may be introduced wherever they can get a footing. Some good earth scattered elsewhere among the rocks, so as to settle here and there in little mats or beds, is just the home for Pennsylvanian Pinks (*Silene pennsylvanica*), Virginian Saxifrages (*Saxifraga virginica*), Moss Pinks (*Phlox subulata*), glaucous Corydalis (*Corydalis glauca*), Krigias (*Krigia* is a little yellow-flowered composite that grows in rocky places), *Hypericum*, and Canada Columbines (*Aquilegia canadensis*). A mossy surface should be encouraged; it gathers mould, retains the scattering seeds, binds the earth in sod-like fashion to the stones, and saves the roots from drying winds and sunshine. *Asplenium ebeneum*, and *Trichomanes*, and *Woodsia ilvensis* thrive on such dry rocks, but the *Phegopteris* prefer the richer

crevices, lower and more shaded seams. The Missouri *Opuntia* (*O. missouriensis*), the hardiest of Cactuses, is most at home where most exposed, but likes some soil to grow in, or a crevice into which its roots can deeply wander. Rafinesque's *Opuntia* (*O. Rafinesquina*), and the common *Opuntia* (*O. vulgaris*), and its varieties are also fit for such a place; if wet in winter almost kills them, before July has passed you would scarcely know they had been hurt. Some *Sedums*, as *Nevii* and *ternatum*, in mossy mats upon the shady side are well at home, and clumps of *Yuccas* near the base add much to the attraction.

VINES.—Old trees and stumps can be used as supports for Clematis, Pipe Vines (*Aristolochia Siphon*) and Trumpet Vines (*Tecomaradicans*); scraggy bushes can be covered with Moonseed (*Menospermum canadense*), *Bignonia capreolata* (Trumpet Honeysuckle), *Apios tuberosa*; and in damp ground like bushes may be clad with Man-of-the-Earth creeper (*Ipomæa pandurata*), Climbing Fumitory (*Lonicera sempervirens*), Climbing Hempweed (*Mikania scandens*), and Ground Nut (*Adlumia cirrhosa*). The Climbing Waxwork (*Celastrus scandens*) may hide a heap of stones or roots, some old fence or other unsightly object in an open place, and in the autumn when its orange pods and scarlet covered seeds are well displayed be like a burning bush. For almost any purpose of screenery or drapery for which Vines are used the Virginian Creeper is available.

WOOD PLANTS.—Your woods teem with pretty plants—Foxgloves, Primroses, and the like, but, notwithstanding that, they may be recuperated by additions from America. Many plants, as Bloodroot (*Sanguinaria canadensis*), that luxuriate in the margins of woods, would die in the dense interior where the little *Oxalis Acetosella* and Bunchberry (*Cornus canadensis*) feel at home. Under heavy tree growth on dry



Warwick Castle: Cedars by the river (see p. 345)

bold mass of our Turk's-cap Lilies (*Lilium superbum*) with stems 7 ft. to 9 ft. high, and twenty to forty blooms on a stem? In clumps, too, the yellow and red forms of the Canada Lily (*L. canadense*) are highly effective. Our Hibiscuses, white and pink, make gorgeous bushes in the autumn; colonies of the Cardinal flower (*Lobelia cardinalis*), spreading mats of Meadow Beauty (*Rhexia virginica*), masses of our blue Irises (*Iris versicolor*), a profusion of Violets, bunches of Meadow Rue (*Thalictrum dioicum*), clumps of Pitcher plants (*Sarracenia purpurea*), are all desirable and accessible. And to these, for variety's sake, to run among the Grass, we might admit Star Grass (*Hypoxis erecta*) Blue-eyed Grass (*Sisyrinchium*), Bluets (*Houstonia*), Squaw-weed (*Senecio aureus*), and others.

ROCKY PLACES.—On poor, naked, and unclad rocky ground, by blasting or otherwise, we can excavate a few holes, fill them with good soil, and plant therein some fragrant Sumach (*Rhus aromatica*), which, as soon as it can get a footing, will spread out for yards. Virginian



and hard land surface we cannot expect a flower garden; but even on such land if the overgrowth be not too thick, *Kalmia angustifolia*, some of the Blueberries (*Vaccinium*), and Huckleberries (*Gaylussacia*), and wild Indigo (*Baptisia tinctoria*) flourish. But if on the surface there be a thin layer of vegetable mould, a Mossy or Grassy sod, as it were, a multitude of plants can be colonised. Hepaticas, Trilliums, Bellworts (*Uvularias*), Indian Turnip (*Arisema triphylla*), Green Dragon (*Arisema Dracontium*), Twin-leaf (*Jeffersonia diphylla*), Mitrewort (*Mitella diphylla*), false Mitrewort (*Tiarella cordifolia*), Starflowers (*Trientalis americana*), false Solomon's Seal (*Smilacina bifolia*), false Spikenard (*Smilacina racemosa*), and many others, can be introduced in patches here and there beneath the bushes or between the trees, and all grow most readily. Wood Anemones (*Isopyrum biter-natum*), Rue Anemones (*Thalictrum anem-onoides*), and Starflowers may form a carpet anywhere apart or run together. In dry and open places the Arrow-leaved and Bird's-foot Violets may dot the sod, and where it is moist, *V. cucullata*, *blanda*, *lanceolata*, and others find a home. Beneath the trees, especially towards the margin of the wood, if no rank, Grassy plants prevail there, *Linnaea*, *Pyrola*, *Partridge Berry* (*Mitchella repens*), *Chiogetes*, *Winter Green* (*Gaultheria procumbens*), *Fringed Poly-gala* (*Polygala paucifolia*), *Dalibarda repens*, *Cow Berries* (*Vaccinium Vitis idæa*), and the like, together with their wood associates, the Phegopteris Ferns, may cover up the ground, and to these latter I would like to add our Club Mosses. An idea prevails that these are hard to get started to grow in the garden, but I find no trouble with them, and have five species growing here as thriftily as their counterparts are in the wood. In transplanting these, *Pyrolas*, *Fringed Polygalas*, *Chimophilas*, and many others, we should have them in sod-like mats, so that the underground stems or runners that run far with but little root, may be un-hurt, and instead of planting in ordinary soil use a compost of chopped Sphagnum Moss, leaf-mould, and a little rough peat. They want a spongy and not a close earthy soil. Dog's-tooth Violets (*Erythronium americanum*) may abound in moist places, and the Spring Beauty (*Claytonia virginica*) anywhere near the margin. Now, the above are not the *élite* of the North American flora, but common every-day every-where plants about whose constitutions there is nothing delicate. But where to get them in quantity and cheapness enough to justify their use may puzzle some of your readers, and for their sake I will say Woolson & Co., Passaic, N.Y.; Hallock, Son, & Thorpe, Queens, N.Y.; Thomas Meehan, Germantown, Pa.; Hoopes Brothers, West Chester, Pa.; Ed. Gillett, Southwick, Mass.; Pringle, Charlott, Vt.; and others. Yes, some of these people can supply our native plants by the piece, dozen, hundred, thousand, bushel, or barrel, and that, too, at prices so low that I cannot understand how they can afford it. W. FALCONER.

Cambridge Botanic Gardens, Mass.

#### WATERING IN AUTUMN.

THIS is an important operation. He who never allows his pot plants to become too dry or too wet, but always keeps them in a desirable medium, is sure to succeed; while on the other hand he who waters his plants carefully for a week, or it may be a month at a time, and then neglects them for a similar period, proceeding thus alternately, will never have any wholly satisfactory. It is not staving and cramming by turns that will secure good plants. What they need is constant attention. This is much easier given than many might think. It is

not necessary to be continually amongst plants with the watering-pot, but they should be looked over daily and all watered, and that thoroughly, that require it. Surface dribblings are injurious. The soil in the case of pot plants under such careless treatment gradually becomes drier and drier at the bottom until it will not absorb water at all, and the little that is given on the surface only runs down the sides.

Fruit tree borders under glass are also liable to suffer in the same way, and as autumn is coming on with its fogs and damp atmosphere, let me impress on those interested with watering to do it thoroughly. It is generally admitted that the less water that can be used during the short days with many things the better, and a thorough watering takes much less time in the end than giving an insufficient supply. In the former case water may not be required more than once or twice a week, but in the latter it will be wanted daily. A great deal of it, moreover, will run through the bottoms of the pots, and then an over-damp atmosphere will be the result. When the soil becomes so dry that water has no effect on it, the pot and its contents should be steeped in a bucketful of water for say half an hour. This will restore the soil to its usual state, but the roots will not recover so quickly. There is another kind of watering common in autumn which often does harm. The desire of many is to see their deciduous plants drop their leaves and ripen off early. In sunless autumns this does not take place naturally so early as in warm dry weather, and many try to assist the ripening by keeping the roots dry. A tree thus treated in the following spring shows a reluctance to start into growth, an unevenness in the bursting of the buds, and a general want of vigour after it has been started, all proving that the dryness at the root the previous autumn had killed many of the young fibres which would have remained active had they not been allowed to perish in dry soil. Nearly every one who writes on watering now says, "water sparingly," but this does not mean that the roots are to be subjected to a regular course of starvation through drought. Over dryness in winter must be avoided, but drying off at the root is a mistake, and the less it is practised the better.

CAMBRIAN.

## BOOKS.

### A BOOK ON BUILDING.\*

ALTHOUGH architecture is not exactly in our way, it is a pleasure to meet with a good and clear book, as this certainly is. On the art of architecture, as on that of gardening, a multitude of feeble creatures have written books, which are mere faint re-echoes of preceding or contemporary works, and it is refreshing to get hold of one coming from a man who says clearly what he has to say and thinks for himself. He throws much light on the various important questions connected with building, and anybody who takes an interest in the art would find it a useful book to read. We are not saying too much, we think, when we remark that the art of landscape gardening is scarcely more in want of regeneration than that of architecture, judging by the cruet-stand erections that one sees now-a-days, and Sir Edmund's remarks on the plans of important works being abandoned to competition seem to us singularly *appropos* to the equally unwise plan of leaving the design of an important public or private garden to competition.

**Architectural competitions.**—We had better begin, as a man or a committee having a building to erect must begin, by considering what steps to take in selecting an architect and plans. For this purpose it is generally assumed that there

are, not the proverbial three courses, but only two very opposite alternatives: one is to put the work at once into the hands of some architect who is recommended either by general reputation or by a friend, subject to your approval of his plans before you make a contract with a builder; and the other, which is generally adopted by committees, but very seldom indeed by persons who have only themselves to please, is to have an architectural competition, which committees and corporations and Governments flatter themselves or the public will produce the best design that can be got.

The primary object of these architectural competitions is really to select an architect, whose plans may be afterwards modified in any way that is agreed on, just as if he had been selected otherwise; and therefore we ought to consider the merits of that system first. I am afraid it must be ranked among the many things in which all the *à priori* reasons point one way and all experience the other. Those reasons are obvious and plausible enough. One would say that the choice of one out of many anonymous designs must prevent jobbing or selection by favour or influence: that it may obtain from some unknown man of genius a better design than would be got from any well known architect: thus in the famous Foreign Office competition in 1857 the first prize was awarded by the judges appointed by the Government to a pair of almost unknown architects, with what consequences will be seen presently. Then again it is said, employing an eminent architect commits you to his favourite style, whatever it may be, while seeing other designs might convince the judges that it is not the best for the purpose; and you must apparently have a better chance of getting the best plan by seeing many than by having to accept whatever a previously chosen architect may give you.

### The Law Courts and Foreign Office.

All this is so plausible, that it is no wonder that all sorts of public bodies are in the habit of accepting it as conclusive. But experience tells another tale, and it is not merely singular, but significant, as I said just now, that private persons, who have only themselves to please, never act upon it, any more than they select their clerks by competitive examination; and it is notorious that, however badly some people manage their own affairs, they do on the average manage them more carefully and economically than public bodies. Indeed such bodies, and by a strange anomaly, elected ones especially, are proverbially extravagant in great things and stingy in small ones, though here again one would expect just the contrary. The fact is that selection from a number of anonymous designs is generally a mere delusion. The style of all the best architects, and of their drawings, is so well known that they might as well put their names to them. And we may be sure that any architect who has a friend among the judges takes good care that the friend knows which is his design. Although a pair of comparatively unknown architects got the Foreign Office prize in 1857 from a set of inexperienced judges, it soon came to be understood that the prize was all they were to get, and the award was generally considered a mistake. A parliamentary committee sat upon it, and the result was that the work was entrusted to Sir Gilbert Scott by the Government. And then, to complete the story, that Government went out and Lord Palmerston came in, and after promising the House of Commons to do nothing in the matter without their approval, as soon as the session was over he told the architect that he would cancel his appointment if he did not change the style from that of which he was the acknowledged master to another in which he had never built at all, and so that competition went in every way for nothing. And so did another and still greater one, viz., that for the long-expected Law Courts, which arose from the offer of the society of Lincoln's Inn to build new Courts of Equity in 1859 for a guarantee of interest on a sum which will probably be exceeded by the salaries of the architect and the clerk of the works before this job is done. There we had all the parade of a great Royal

\* "A Book on Building," by Sir Edmund Beckett, Bart. London: Crosby, Lockwood & Co., 7, Stationer's Hall Court, Ludgate Hill.



Commission, and the publication of a blue book of elaborate conditions and instructions, and an exhibition of the designs in a building erected for the purpose, and the appointment of a sub-committee to choose the best design, of persons with as much architectural experience as those who awarded the Foreign Office prize, and then a decision of the Crown and its law officers that these great lawyers (as two of the sub-committee were) had exceeded their powers by recommending two architects instead of one, because they preferred the architecture of one and the internal arrangements of the other. And so at last the architect was again appointed by the First Commissioner of Works, and, by an odd coincidence, the very same (Lord J. Manners) who had appointed the architect for the Foreign Office ten years before, as if there had been no competition.

### Unfair to Competitors.

It is also to be remarked that the commission had intimated early in the business that satisfactory internal arrangements would be more regarded than external appearance; so that in this respect the selection was a breach of promise to the competitors. I say this without the slightest preference for the design of the one who was aggrieved in this way, but merely as an illustration of the unsatisfactory working of competitions. Nor is the case improved by the fact that even the revised plans of the successful competitor were received generally by public critics with such a chorus of disapproval as no other selected design ever was before; which is now amply justified by the result. Barry's—or rather Pugin's—design for the Houses of Parliament was received with almost universal approval, though the internal arrangements and the extravagant cost afterwards produced the anti-Gothic reaction which lost us Sir G. Scott's fine Gothic design for the Foreign Office, as just now mentioned.

Though theoretically a competition is expected to give a choice between great and small architects, the practical effect of it is often exactly the contrary, and in the worst possible way: viz., to exclude the great ones altogether, except from very great works; and after these experiences they are justly growing shy even of them, and will not incur the trouble and expense of preparing a vast quantity of drawings for the small chance of being employed, even if they get the first prize. Nor will they work down to the kind of taste which they know they have to expect in municipal committees and bodies of that kind, who are the fondest of architectural competitions. I can only account for the badness of all the Law Courts designs by supposing that the excitement of a competition throws even the best architects off their balance. Those for the Albert Memorial were equally bad, or worse. In a discussion on the "Hope of Architecture" at the Royal Institute of Architects in December, 1874, I said that any architect would make me a very different design if I employed him directly from what he would send in for any competition. The president, Sir Gilbert Scott, most significantly interjected, "We are obliged."

### Committees.

Even if the taste of committees were better than it generally is, there is another difficulty which very few people are aware of, and that is their inability to judge without experience how large the building and its parts will look; that is, with reference to the human body, which is the ultimate scale by which it will be tested. Indeed architects sometimes deceive themselves in that way. I asked one who sent me some plans for a church which I had to judge of, containing pillars divided into as many sections vertical and horizontal as would have done for a cathedral, if he had any idea how high they would be in reality, and he was evidently *bona fide* surprised when I showed him that the capitals would just reach his shoulder. Not long ago I had a design for a wooden screen for an internal porch sent me, which looked well enough on paper, and had been approved by other people, who had never thought of trying the actual dimensions of the parts. The

result was that I knocked out exactly half the divisions, or reduced the parts to half their number. The mistake in this case was the more inexcusable, because the architect was proposing to add this thing in the modern babyhouse style to which he was accustomed to a church of mine in which everything is larger than usual in churches of that size.

**Fallacies of drawings.**—But though these mistakes are often made from mere ignorance, the getting up of competition drawings with an appearance of imposing size is by no means the result of ignorance. It is managed by various pictorial devices. One of the commonest is displaying in the foreground a number of fine ladies and gentlemen on horse and on foot, looking very small compared with the building. The pictures are drawn from a too near point of view, which magnifies the height and disguises all the proportions. If my friend with the many-shafted and banded pillars had drawn a congregation in his church, we may be sure he would have kept their heads far below the caps of those pillars which would really have been hidden by their shoulders, and I am equally sure that it would not have been found out by one judge in a thousand. It is no wonder that ordinary people should be ignorant of all this when so many architects have yet to learn that cutting up a building into little bits, which are perceived to be insignificant as soon as you come near them, immediately gives the impression of what I called the babyhouse style to the whole, instead of deceiving the eye into the belief that it is large because of the multitude of parts, as it does in a drawing. Not that I defend the opposite error of making the parts gigantic and too few, and so diminishing their due effect, of which St. Peter's at Rome and the Victoria tower of the Houses of Parliament are notorious examples; though it is true that that error has a kind of grandeur in it, while the other is a miserable attempt at imposition which invariably fails in stone, though it too often succeeds on paper. The original design of that tower (doubtless by Pugin), with many more windows and divisions, was infinitely better; and so says Mr. Fergusson.

**Depth of shadows.**—Another, and in fact the commonest of all the fallacies of architectural competition pictures is that of showing a false depth of shadows in all the recesses in the walls, and so giving an appearance of thickness and massiveness to the whole, which those who make the pictures thereby show that they know the building ought to have, though they must know equally well that it has not, according to the working drawings, of which again ordinary judges are no judges, and naturally assume the pictorial view to be a true one.

### Position of Houses.

It is a common and too true remark that the great majority of large houses are wrongly placed, either in position or in posture (to use a distinction of modern ecclesiastical law) or in both. In many cases it is impossible to guess what caused them to be placed as they are, when a few hundred yards or a twist of the plan would have given them a fine view, or a better aspect, or a high and dry site instead of a low and damp one. There is a story that one of the grandest houses in Shropshire was left to the architect to plant as well as to build, who put it, as they often do, to be looked at rather than looked from—looking north along a sunless valley in a large park with plenty of fine sites and large views; and that the owner came to see it once after it had advanced too far to stop it, and was so disgusted that he never came again. Many others are made to look up hill instead of down; or upon woods so near that the house seems fenced in; or with inconvenient approaches when easy ones might have been got; and, in short, as if nobody had condescended to spend five minutes in seriously considering where people are to spend their lives and a vast sum of money for the purpose.

**Hollows.**—In old times the monks were under the impression that low places were warm and sheltered; whereas they are in fact the coldest

and the hottest and the dampest, and the air in them the most stagnant and unhealthy even when there are no visible signs of damp. Flowers are earlier cut off by frost in valleys than on the hills, and the thermometer often falls much lower. I have just by accident read in "White's Selborne," that in December, 1784, the thermometer fell to zero there in the valley, and that he sent up the hill expecting to hear that it was lower still, and was surprised to find it 17°, and from 10° to 18° higher generally through the frost. I remember hearing of the same difference between very high hills and a valley in Yorkshire at Christmas, 1860, when the thermometer was at zero in the valleys. The closeness and dampness and stagnation of the air in valleys speak for themselves. You often walk down a hill into a mist in summer evenings almost as sensibly as if it were a pond. Rooms upstairs are notoriously drier and warmer at nights than ground-floor rooms, and you can keep the windows open hours later in the evening. Great plains are sometimes healthy, but the bottom of a valley is nearly always the worst place to build in, though it is true that from difference of soil or other circumstances some valleys are healthier than some higher grounds.

### Ivy and Trees.

Some years ago archdeacons used to go about the world charging against Ivy, as making churches and parsonages damp. I believe they have since learnt better; at any rate it is now well known that nothing tends so much to keep walls dry as Ivy, especially west ones against which the rain beats hardest. I have heard of west rooms which never could be kept dry until they were covered with Ivy. It is also cool in summer and warm in winter. But you must take care that the Ivy does not get into holes or cracks in your walls, or it will split them to pieces in time. It is remarkable that trees near a house produce just the contrary effect to Ivy on it, and equally remarkable how stupid the owners of houses are up on this point, especially when they do not live there; refusing to let trees be cut which only injure the house and its inhabitants by keeping it continually damp, sometimes dripping on the roof, and always keeping off the sun and air, besides exhaling damp in all damp weather. I see this also was noticed so long ago as in "White's Selborne," and the proper explanation of it given, viz., that trees condense or turn into water the moisture of the air which is otherwise insensible. He also says that they "perspire largely" (which is not quite so clear) and check evaporation, which is certain, so that the ground under woods is nearly always moist; "no wonder therefore that they contribute so much to pools and streams;" and he might have added, that small streams and even rivers are gradually drying up all over this country and many others from the continual destruction of trees.

But even this very mild piece of natural science is beyond the comprehension of no small number of owners of country houses to which the trees have become an absolute and dangerous nuisance, however ornamental they may be from a distance, if houses were made to look at, not to live in. Non-resident owners seem to have a kind of idiotic notion that it is making too great a concession to their tenants to let them give light and air and dryness to the house by cutting down a tree. People of that kind are beyond argument, if they cannot see for themselves that they are injuring their own property under the fancy that they are preserving it, or keeping it picturesque, or secluded, or something or other which is of no value to them, who do not live there, and a nuisance to those who do. I remember a vicarage being built pleasantly near to a fine tree, as it was thought, and then the owner found his study and the bedroom over it incurably damp and cold. I told him that he always would until he cut down the tree which ought to have been kept farther off; at last he gave in and cut it down, and then his rooms became comfortable. I stayed several summers in another house where the library, which ought to be the warmest from its position, always wants a fire three or four weeks earlier than the corre-



sponding east room, and papers in the library become damp and soft after a very little rain, from the very same cause of having been built too near some large trees on the south-west. It is difficult to give any rule for distance, because it depends on the size of the trees, but no man can have any difficulty in finding out whether the house he lives in is affected by their proximity or not. In planting a house near trees, or trees near a house, too many people forget that the trees will grow, unless they are already dying, and that a large tree casts a very long shadow, and that a number of them shed a damp influence still farther. The owners of country houses with lodges generally condemn their lodgekeepers to live in houses steeped in damp and often cut off from the sun by large trees overhanging them.

### Garden Walls.

In most old gardens and other walled places on sloping ground the walls are built in courses parallel to the ground, not in horizontal courses with the tops broken up into steps as is the fashion now. The steps look very ugly and make the walls weak, and have no advantage whatever, and some inconvenience when the trees reach the top of the walls. I believe the fashion of making steps arose from its being less trouble to build by the plumb level than by the eye or measuring from the ground, and perhaps also from that passion for irregularities and ups and downs which infests modern architecture. When there are buttresses, as in high garden walls, there is no difficulty in building the buttresses themselves upright, though the courses in them are not quite horizontal. I know from experience that buttresses on the outside of the wall are of no use if the wall is much exposed to the west wind outside. But if they are put inside, the wall cannot be blown down without being lifted up so as to turn on the feet of the buttresses, which would require enormously more force. Some gardeners dislike them inside, but there is no real objection to them if put at proper distances for the trees, and other gardeners rather like them as protection against a sweeping wind inside. Garden walls should have a coping to protect the trees from wet of 3 in. or 4 in. projection, the coping being sloped backwards to throw off the rain that way. The best coping for such or any brick walls, is the heavy blue lumps with rounded corners which they call bull noses, about 15" x 4" x 7" which the railway companies introduced for the edges of their platforms. They should be set in cement with sand, as mortar soon works out. The common thin flag coping always gets loose after some years.

### ELEMENTS OF AGRICULTURAL CHEMISTRY AND GEOLOGY.\*

THIS is a book that had a very good reputation in its time, but its time has partly passed; the whole nomenclature of chemistry has changed since its first publication, and although it was virtually re-written by Dr. Cameron in 1877, it is now somewhat behind its time. A few years ago it was the best book in the market, and Dr. Cameron introduced into it a great number of modern scientific terms, but left older phrases still standing, and the result is somewhat of confusion in the minds of the untrained reader. The fact is, certain works on chemistry, like many works on botany, are lost upon the general public, and we question if they interest many beyond the writer. To make these books of any use to the general public or the agriculturist, a different sort of nomenclature must be adopted and a more common-sense method. Cumbrous tables and chemical formulæ mixed up with such a purely practical and common-sense a matter as farming are out of place. We were glad to see in the little work of Mr. Warrington on the chemistry of the farm that purely technical phraseology is much less employed, and the substances are very commonly spoken of by the trade or usual

names, and not by the laboratory names. We are glad to see that this progress on the part of Mr. Warrington is in the direction of common sense and the understandable, while more abreast of the times as regards its chemistry and the experiments actually carried out by the Germans. The present work has more analysis and more detail in many respects, but not so much as might at first sight appear when comparing the respective number of pages, particularly as the present book has a hundred pages devoted to general chemistry and geology. The difference between this edition of Johnstone and Cameron (the 12th) and the one we reviewed two years ago is an appendix of twelve pages on recent research in Aberdeenshire and on Gilbert and Lawe's experimental farm.

## THE GARDEN FLORA.

### PLATE CCIV.—CATTLEYA MENDELLI SUPERBISSIMA.

THE magnificent Orchid from which our plate was drawn we found in flower last June in Baron Schroeder's gardens at The Dell, Egham, where there is one of the choicest collections in the neighbourhood of London. It need scarcely be said that *C. M. superbissima* far surpasses all the other varieties of Mendell's *Cattleya* both as regards the large size of the blossoms and their beautiful, yet delicate colour. The unusually large concave lip, exquisitely crisped and crimped at the margins where it is a lovely rich amethyst, and the delicate blush tint of the broad sepals render the flowers extremely beautiful, and being borne three and sometimes four together on a stalk, the effect is unusually striking. All the varieties of *C. Mendelli*, one of the most variable of all the *Cattleyas*, are very beautiful and command high prices, but when we come to look for such exceptionally fine forms as this we find them very scarce indeed, and existing only in a few of the richest collections. Mr. Anderson, the well-known Orchid grower at Meadowbank, near Glasgow, sends us the following interesting particulars respecting *C. M. superbissima*, which it will be seen he now calls *pulcherrima*:

"There is no more popular *Cattleya* in cultivation than *Mendelli*, originally introduced from Columbia, in South America. It was generally supposed to belong to the Triane and Warszewicz section, but on expanding its flowers it proved, if not specially distinct, at least sufficiently so to be named in honour of Mr. Sam. Mendell, a famous collector, or rather owner, of Orchids at Manchester. Like all species that come to us in thousands, this showed many varieties, and that which is figured is the most beautiful of all, hence its name—*C. Mendelli superbissima* or *pulcherrima*. It has so far eclipsed all its compeers that the Royal Horticultural Society awarded it, when exhibited, a first class certificate. Although I sent one of the plants to Messrs. Veitch under the name of *Cattleya Mendelli superbissima*, I afterwards decided to call it *pulcherrima*. The great beauty of the flower is in the purity of its sepals and petals, their great breadth and substance, and the particularly large and fine labellum, which is about as near perfect in outline as a *Cattleya Mossiae* can be, and of a fine, striking, deep-shaded Peach blossom hue. It has, moreover, the quality of being a free grower, strong, bearing pseudo-bulbs much larger than most of its fellows, and adorned with leaves of corresponding size, which when in vigorous health are rich and glossy. No one who sees it can readily forget it. Some time ago I saw a small piece of it in flower at Woolton Wood, and it shone out above all its compeers."

CULTURE.—In Baron Schroeder's garden this *Cattleya* succeeds well under the same treatment

as that given to the majority of *Cattleyas*, viz., an intermediate temperature, a little warmer during the period of growth than when the plants are at rest. When in flower the atmosphere is kept pleasantly cool and dry. Mr. Ballantine, the baron's gardener, grows most of his *Cattleyas* and *Lælias* in pots—at least such as are not too large; if so, they are grown in square baskets, not suspended, but placed on the stages on supports, so as to bring the plants as near the light as practicable. The *Cattleya* house at The Dell contains some wonderfully fine examples of both *Cattleyas* and *Lælias*, representing all the finest and rarest kinds in cultivation.

**Camassia Leichtlini.**—Allow me to state that, though I distributed this plant, the honour of having introduced it is not due to myself, but to the Royal Botanic Garden, Edinburgh, then under the curatorship of my much regretted friend, Mr. Jas. McNab. Honour to whom honour is due. —MAX LEITCHLIN, *Baden-Baden*.

**Karaka Nut of New Zealand.**—"F. W. B.," under "Notes from Dublin," in a recent issue, enquires for information about this plant. It is *Corynocarpus levigatus*. The fruit is eatable, but the kernels contain a peculiar poisonous alkaloid called Karakine. Further information under the generic heading will be found in the "Treasury of Botany," where it is said that the seeds are used in time of scarcity. To get rid of the poison they are steamed for twenty-four hours, and are then buried in the ground or soaked in water for some days.—R. I. L.

—*Corynocarpus levigatus* is an Anacardiaceous tree, the fruits of which we described as being about the size of a Plum, and of sweetish taste. The seeds are farinaceous, and are used as food in times of scarcity. They are, however, considered poisonous before being steeped in salt water.—J. R. JACKSON, *Acorn*.

**Protecting trees from rabbits (p. 281).**—Try "bushing" the young trees with Heather or some similar material, such as young underwood or the trimmings of Fir plantations. If the plantation is on an extensive scale a less expensive plan would be to paint the stems with some distasteful composition or mixture, although not so effectual as "bushing." An application of Davidson's composition wards off the attacks of rabbits for one season tolerably well; it may be procured through any nurseryman. If the adjoining wood be full of rabbits, I fear nothing short of wiring the plants in or "bushing" every tree will prevent them from getting barked, or even their tops eaten off during a rather long spell of frost and snow.—G. B.

—This is a case in which the old maxim, that "prevention is better than cure," holds good. Dressing the stems of trees with numerous compounds may be of some service, and encasing each tree stem in furze may do for a time, but the best plan is to prevent the rabbits from coming into contact with the trees, and for that purpose an impervious fence, such as wire makes, is the best thing to have. Even this should have its lower side buried a few inches into the soil, and be very firmly fixed. Of course rabbits may be killed with freedom, but such an extreme course may be objectionable.—A. D.

**Gardeners' Notice.**—In answer to the question of "W. S." as to what "notice to quit" a head gardener is entitled to, I would say that the very point seems to have been settled in the case (never over-ruled, as far as I know) of "Nowlan v. Ablett," 2 Cr. M. and R., 54. It was there held that a head gardener, at £100 a year, who resided in a detached house belonging to his master within his master's domain, and had the privilege of taking in apprentices, and had five under gardeners employed for his assistance in the garden, was entitled to only one calendar month's notice or warning.—TEMPER.

\* "Elements of Agricultural Chemistry and Geology," by the late Prof. J. F. W. Johnston, F.R.S., &c., and Charles A. Cameron, M.D., F.R.C.S.I., &c., &c. London and Edinburgh: William Blackwood and Sons.











## THE GIUSTI GARDEN, VERONA.

EVERYONE allows that one of the greatest pleasures connected with travelling is the retrospect. Among the happy memories of foreign wanderings, the many little *contretemps* which have inevitably occurred—the slow trains, unclean inns, unpleasant fellow travellers—find no place. One commonly recollects only what has been agreeable, and among many delightful things never to be forgotten are the gardens we have enjoyed. Who can forget the groves of Palms, the vast spaces planted with semi-tropical trees and shrubs, shading

Great store of flowers, the honour of the field,  
That to the sense do fragrant odours yield,

which help to render the Riviera so delightful a residence during the cold months? I envy the traveller who leaves England on some trying day in winter or early spring when

The rocking winds are piping loud,

the swift train bearing him to a Paradise beyond the Maritime Alps. Still more do I envy the same traveller who has found his way to Rome some time in April or May. Of course he conscientiously does his duty in the morning by visiting the churches, picture galleries, and other marvels of the Eternal City; but towards the afternoon a delightful feeling of leisure comes over him—he is free to wander in the ancient streets, where the homely dwelling of to-day has been built close to some stately palace of antiquity, where the temple dedicated to a forgotten god stands by the side of the mediæval church. Perhaps passing through the Ostian gate, he visits that most beautiful of all cemeteries, the English graveyard—once seen, always to be remembered—where marble tombstones and crosses mark graves rendered fragrant by beds of Violets, white and blue; or it may be in a lighter mood he seeks some one of the beautiful villas which are so liberally thrown open most afternoons. Here he may wander at will in alleys of Bay trees, with their spikes of sweet yellow flowers, fit abodes for the ancient gods whose statues preside over them; or he may pace some terrace, shaded with noble trees, where on the one side you look down on a crowd of towers and palaces, while on the other the view is bounded by the Alban and Sabine hills. Among celebrated Italian gardens that of the Palazzo Giusti, at Verona, is not the least famous. The first time I made acquaintance with it was as I looked over some sketches of the fair city by a well-known artist; the drawing gave, however, but a faint idea of its real beauty. Turning out of a narrow, little-frequented street, you pass through the court of a mediæval house, and soon find yourself in a vast garden. It is traversed by a broad walk, girded by gigantic Cypresses. On each side are beds, which in spring and summer are gay with flowers. These seem to brighten a scene which these dark-hued trees might otherwise render too sombre. At the end of a long walk a narrower path begins to ascend; terrace rises above terrace; from each you catch a lovely view, till at last by a winding stair you reach the summit of a considerable height, almost the highest point in Verona. Below, like a fair picture, bathed in evening's glow, lies the lovely city. Do not try to number its countless towers and campaniles as they stand out against the soft blue hills. The darker spots amid the mass of buildings are the remains of Roman architecture—the Amphitheatre and the Porta dei Borsari. That blue thread is the Adige, spanned by curious bridges and dark with many water-mills. From time to time you catch the sound of distant bells. You descend by a different path, more winding than the last, and curiously over-grown with trailing shrubs, Honey-

suckles, Jessamine, and climbing Roses, all in full flower. Some of the Cypresses, which are the most striking features of the garden, are of great age. The gardener, who, on parting, presents the visitor with a neat little bouquet (of Pinks or Roses), says some of them are 500 years old; but the Italian imagination is fervid, and disdains to be accurate in dates. Goethe visited this charming spot, and thus writes of it in his "Italienische Reise": "The Giustigarden is beautifully situated, and contains monstrous Cypresses, pointing like spikes into the air. A tree whose branches, the oldest as well as the youngest, are striving to reach heaven. A tree which will last its three hundred years is well worthy of veneration. Judging from the time when this garden was laid out, these trees have already attained that venerable age."

N.

## GARDEN IN THE HOUSE.

**Ferns and Ivy in dwelling rooms.**—These make excellent indoor decorations. In a villa where there is no glasshouses upon which to depend the rooms and windows are always gay with flowers and beautifully draped with foliage. One window I noticed was festooned with Ivy, growing in a rustic basket supported on the head of a stone figure, and though the basket did not contain more than a quart of soil, yet the Ivy was over 20 yd. in length, and had been five years without replanting. Ferns in the windows and recesses were all that could be desired, and even in unused fire-places they were healthy and vigorous. The secret of success in this instance is an earnest solicitude for the wants of the plants, which always repay loving care by flourishing even under the most adverse circumstances. How often do we find plants refuse to do well even with the best of appliances; and why? The owner, or it may be some one who looks after them, has no real interest in them. One has only to look over the nearest hedge or through some half-open door to see if the plants and their owners are in happy accord; when they are, what beautiful effects may be produced, even with such simple materials as the Wood Ivy, common hardy Ferns, a few annuals, and hardy bulbs or roots. With even these an ordinary garden may be made into a paradise. —J. G. L.

## TABLE DECORATION.

THE March stand for holding flowers for this purpose is complained of by "A. D." (p. 292), and certainly it has been too long in use. There is, however, really no need for either it or any other. Our stands have been shelved for years; we find cut flowers arranged as if growing much more appreciated, and thus managed they do not obstruct the view over the table in any direction. If tall plants are employed they should be slender and graceful, and rise from a bed of Maiden-hair Fern or Lycopod, in which any rare flowers may be plunged. We generally employ a groundwork of coloured silk or satin for the centre of the table, leaving only a margin of white cloth for the plates and such silver or glass as is absolutely necessary for the convenience of dining, and where the junction of groundwork and cloth takes place about 15 in. from the edge of the table a bordering of foliage and flowers is placed, only one variety being used that will harmonise well with the groundwork—as, for instance, Wood Primroses, or Banksian Roses, on a crimson ground. Groups of the same are extemporised on plateau tins to suit the size of table, and so arranged that they look as if springing from a bed of their own foliage, or the greenest Lycopods or Mosses. Trailing plants, such as Hops, may be supported on arches or lie carelessly on the cloth. Decorations in Corn, fruit, or autumn-tinted leaves may be appropriately used now, but let all try at all events on a small scale to break away from stereotyped patterns. One original design is worth any quan-

tity of repetition, and in few branches of gardening is there more abundant room for improvement and the exercise of taste than in arranging cut flowers for the dinner table. J. G.

Linton.

## PLANT LABELS.

WILL you allow me a little space in which to reply to the Rev. H. Ewbank (p. 229) whose criticisms are not only quite fair, but advanced in a style that is commendable. I do not understand him to mean that I am prejudiced against other labels when he says I am devoted to zinc ones, as I candidly confess I am, and if my plants could speak they, too, would confess that zinc had stuck to them in all weathers as no other labels had before. I have not, however, tried the zinc labels pushed into the ground in the ordinary way, and only then would Mr. Ewbank's remarks apply when he says "wooden labels are certainly lifted out of their places by frost, and zinc labels cut the ground so sharply they are even less to be trusted." As I before stated, I use them suspended on galvanised wire supports, also slipped into a grip-slide, which latter method holds the label horizontally. I can well imagine that the wooden label with black ground and white letters, so highly commended by Mr. Ewbank, will be most serviceable in the sunny climate and clear atmosphere of Ryde, but I fear it would not do here, 3 miles from Leeds, and within 1 mile of factories and a large forge. Just imagine a shower of "blacks" on such narrow grooved lines. During the recent foggy weather imagination was not needed; new white tallies which had only been in use a few days had the appearance of having been dipped in soot and water. Moreover, I have tried the black-ground labels, a few having come to me along with some plants; they were not on supports; they had the merit of being inconspicuous. Alas! too much so. I had to seek them, and when found, they were read with much difficulty. Doubtless these would fare worse than if they had been on supports, as they would be subject to splashes. I fear, however, such a label would have frequently to be washed, a practice often adopted here with cut-flowers. This may have been a condition overlooked by Mr. Ewbank, though his remarks most fittingly apply when he says, "what is suitable for one set of conditions may very likely not be suitable for another."

Mr. Wilson (p. 302) rightly supposes me to mean paraffin oil, and not the pure or wax-like substance, when I object to the use of paraffin. My little experience of the pure paraffin has taught me that it coats very thickly, but I have not used iron labels, and I thank Mr. Wilson for the meaning which his letter conveys, but which I failed to gather from the report of the committee.

Kirkstall.

J. WOOD.

—I write a line to acknowledge Mr. Wilson's notice of my little protégé, and to say that the village carpenter who has made thousands of labels for me during the last few years is ready to do as much for others. Anyone who wishes to know the price of the Isle of Wight label (by which I mean a composite label with iron wire supports) can obtain all particulars by sending a stamped envelope to Mr. Leonard Blow, Arundel Road, St. John's, Ryde.—H. EWBANK.

**The Tomato as an insecticide.**—It has often been asserted that aphides have such a strong aversion to the Tomato that the mere suspension of a few bunches of this esculent on Peach trees, or indeed on anything infested by them, would in some cases suffice to clear it of them in a few days. In others the effect has not been so satisfactory. It is, however, interesting to learn that a French nurseryman is making practical use of the Tomato as an insecticide. By infusing the leaves at the rate of about 1 lb. to ten quarts of water, adding thereto twenty quarts more water, he obtains an efficient insecticide. By planting Tomatoes amongst his Melons he keeps away the aphides which attack them.—J. C.



## THE INDOOR GARDEN.

## ASPARAGUS PLUMOSUS.

THIS useful plant has attracted much attention lately, and I venture to say that when once its value in a cut state, together with its free-flowering nature, becomes generally known, it will be as extensively cultivated as the invaluable *Adiantum cuneatum*. I have had sprays of this *Asparagus* keep in water for over three weeks, neither gas nor fire having the slightest effect on them. Here we grow several fine pieces of it, our people preferring it before *Adiantum* for indoor decoration, and as the free nature of the plant admits of its being almost stripped of its fronds without appearing to suffer, there is no difficulty in supplying the demand, "Cambrian" in his interesting note on the variety *nanus* in *THE GARDEN* (p. 294) asks for a little information as to the requirements of this plant, and having grown it for some years without any trouble, I freely offer the following for his and others' guidance in managing this beautiful plant.

**Culture.**—Being a native of the Cape as well as further northwards—as far as Natal, this species is undoubtedly a greenhouse plant, and thrives well in a house where *Pelargoniums*, &c., are grown. Here we have two plants planted out in a cool conservatory, as well as several good plants in pots in another cool house. Those planted out are in a compost of loam and peat with a little brick rubble; below 1 ft. of this there is a good drainage of broken bricks, &c. During summer, when these plants grow like weeds, they are assisted with a little weak manure water about once a week; during winter no water is given. Those in pots are in a similar compost to that described above, and these, as well as those planted out, are kept to supply the house with cut fronds. In addition to these we grow about a dozen small plants in  $\frac{4}{5}$ -in. pots for table work, and to those who have not seen this plant thus employed, I recommend it as one of the most telling, the graceful deep green fronds and elegant habit of the plant rendering it, in my opinion, the very best among table plants.

**The propagation** of this species is as easily managed as its cultivation, seeds which are frequently produced on our oldest plant, germinating as freely as the garden *Asparagus*, and growing into useful little table plants in about 12 months. Last year, however, our plant did not seed, and desiring an addition to our stock, I shook out one of the large pot specimens, washed the soil from the roots, and cut up the stool into as many pieces as I could find eyes. These were potted in a light soil and plunged on a strong bottom heat; and although I expected some of them to start, I was not in hopes of so agreeable a surprise as I had when every bit at once started, and in a short time were asking for a shift. Of course, it will be understood by all acquainted with the nature of the genus to which this plant belongs that there is no known method by which cuttings may be rooted. Seeds and division, therefore, are what must be relied on for the increase of this desirable plant, and as the former are by no means rarely ripened and always germinate, and the latter a method so easily managed in this case, there need be no lasting want for such a useful plant. With regard to the varieties of this species of *Asparagus*, I am inclined to believe that the variations in habit and shape of fronds are due to differences of treatment, and are not by any means to be looked on as permanent characters. I do not make such an assertion without having first proved its truth, for I have raised a plant similar to the *A. tenuissimus* that was certificated a short time ago, from seeds produced by *A. plumosus*, and this supposed variety called *A. plumosus nanus* is not at all different from the young plants raised from eyes, and which are now about 3 ft. high. In the succulent house at Kew there is a plant of this under the name of *A. consanguineus*; can anyone inform us whether this or *A. plumosus* is the correct name for our plant?

## WINTER FLOWERING PLANTS

FROM the beginning of October until the end of January is the period when we most need a supply of flowers, and those who grow and require quantities of them during that time will admit that this is the worst part of the whole year to keep up a constant, varied, and choice stock. It is late in the season now to speak of the general cultivation of anything likely to produce a display this winter, but much may yet be done with many things partly grown, and where these are deficient a good quantity of

**Bulbs** may yet be added to the list. Of bulbs to flower freely in autumn there is a scarcity, but to come in after the new year and onwards there are plenty. One of the best for November, December, and January is the Roman Hyacinth. Until January we have been more successful with this than any other. It may either be grown to make a display in pots or for cutting. Five bulbs in a 6-in. pot make a pretty display, or they may be placed singly in 3-in. pots, and for cutting only quantities of them may be grown together in boxes. There is no difficulty in getting them into flower, and every one, no matter how inexperienced, may succeed in their culture. Other early Hyacinths, which may be had at Christmas by a little more attention, are Grand Vainqueur, Pelissier, M<sup>de</sup>. Talleyrand, Grand Védette, Bouquet Tendre, Panorama, and La Tour d'Auvergne. Some of these are bright in colour, but some might probably be grown more for scent than show, and one or two varieties of the Scarlet Tulips may be grown for their brightness, and in this respect no kind is superior to the Duc Van Thol class. As regards Narcissi, their odour is their principal recommendation, and the Double Roman and the Paper White are easily managed, very early sorts. Crocuses we have never been able to get in bloom before the days began to lengthen; indeed, their culture for early winter decoration need not be attempted. Those bulbs which have been named for early flowering should be procured at once and potted; a mixture of loam and leaf-soil or half-decayed manure is suitable for all kinds of bulbs. It is necessary that they should be placed in the dark some weeks before forcing. When placed under a thick covering of ashes, Cocoa-nut fibre, or sawdust, they soon show signs of growth. In bringing them on to bloom they should have a position near the light and a temperature about 60°.

**Chrysanthemums** are always useful late in autumn and early in winter. They are easily propagated in spring, and sure bloomers in autumn. A few good sorts which would flower freely in January, February, and March would be great acquisitions. Some are kept dwarf and bushy, and others are allowed to run up long and lanky. Of the two the dwarfs are the most useful, and the only kinds we grow now. At present all Chrysanthemum pots will be well filled with roots, and the bloom buds just showing. They should occupy the most sunny position obtainable, as it is of the utmost importance that the wood should be well developed and hard, and great care should be taken that they never suffer from want of water at the root. Manure water may now be freely given. The middle of October or later is early enough to remove them from the open air under cover, and the house in which they are placed should be cool and unshaded. By many they are considered not ornamental enough to be put in the greenhouse or conservatory before they begin to bloom, and until then a cool Peach house or similar place will suit them. Some of our Chrysanthemums are placed in a slightly heated house, and others in a house in which there is no heat, and by means of the two places we always manage to have blooms from the beginning of November until a little way in January. When in flower they are always kept very moist at the root, but the atmosphere, especially where there is no heat, is always kept as dry as possible, as the flowers suffer from damp, especially those of the Japanese kinds. February is the month when most of the Chrysanthemum cuttings are put in, but tops rooted in July, and grown on in 3-in. or 4-in. pots, make

pretty little plants for Christmas blooming; in fact, for small vases or dwarf edging plants they are much more useful than the others.

**Salvias** are another grand class of winter flowering plants. They are as easily rooted, grown, and bloomed as Chrysanthemums, and are just the plants for those who have no great amount of heat at command in winter. They grow quickly, and bear stopping freely. They also speedily fill their pots with roots, and where large plants are wanted plenty of pot room must be given; 8-in. pots are the largest we use, and we have small plants furnished with three or four flowering shoots in thumb pots. It is from the point of each shoot that the bloom comes, and the more points produced by frequent stopping the better. Stopping may be practised until September, and the points taken off may be rooted until then. They like a rich soil. In summer they may be grown out-of-doors, and about this time they should be placed in a cool house or frame well exposed to the sun. Here the shoots will lengthen, and from November onwards abundance of flowers will be produced. Further on when plants show signs of becoming exhausted they may be placed in a little more heat, their food increased, and a succession of bloom will be the result.

**Chinese Primulas.**—These should always be grown in quantity for winter flowering. Some strains are very much superior to others, and care should be taken to secure the best. Useful plants may be grown in 4-in. pots, and the largest in 6-in. ones. At the present time the earliest are just coming into bloom. A little soot water now will improve them greatly; strong liquid manure must not be given. Many grow their Primulas in the shade in summer. Ours are grown in the sun, and those which have been previously in the shade should be put in a sunny position at once to harden them for the winter. Primulas and other soft-wooded plants have a tendency to decay in damp weather or in moist positions in winter, and those grown in the shade are always worst in this respect. It is surprising how much better plants grown in the sun will stand the severities of winter. Primulas do not bear strong heat well, and they do not force readily, but all forward plants in light, airy positions now will bloom fast enough without forcing. From the end of September onwards Primulas require to be watered with care.

**Abutilons** are another grand class of winter blooming plants. These, although figured in *THE GARDEN*, and well spoken of in many ways, are not yet so extensively cultivated as they should be. We are annually increasing our stock, and have never too many. They are easily cultivated in summer, and bloom with great certainty in winter. Until the end of September a cold frame is a suitable place for them, and after that any kind of greenhouse. Their beautiful bell-shaped flowers are produced in numbers at the point of every shoot, and until they are allowed to flower they should be constantly stopped in order to make them branching and bushy. From now onwards they may be said to come naturally into bloom, and they will continue to do so the whole winter through. For this purpose, however, it is important that they be well ripened, and if this has not already been accomplished it should be set about at once. During long periods of cold dull weather a little fire heat assists them to open more freely, and liquid manure is beneficial when the pots are full of roots. From even a small collection flowers may be had almost every day in the year, and their shape and colours enable them to be used in the most choice arrangements.

**Bouvardias** may be classed amongst the choicest winter flowers. They, too, are easily grown, but not so much so as some things; young healthy plants of them are more satisfactory than old ones. Early propagation and frequent stopping will secure dwarf bushy plants for winter use. A cold frame fully exposed to the sun is their proper summer quarters. Now they may have a little more warmth, but a very "little," as strong heat now will hurry them over, and they will be weak and straggling long before they come into flower.



From a frame we shift ours into a cool house to which no artificial heat is applied until it is wanted to keep out frost. Those we want to bloom in October and November are showing quantities of buds now, and later ones are still being pinched. Cutting the flowers induces fresh growth, and consequently more blossom. Cleanliness is a great matter in the case of Bouvardias, and to this a sharp eye should be kept.

**Poinsettias** differ widely from anything we have yet named, but they should be included in all lists of early winter flowers. They are showy, and can be used in many ways with good effect. A cold frame is the best place for them in summer; in this they remain dwarf and healthy, but they require a little heat in winter, especially after November. Then the heat of a stove or forcing pit induces their flowers to open perfectly. We never keep them by themselves, but in the company of other things. Bottom heat before flowering is sometimes recommended for them, but this we never give, and without it we get excellent blooms at Christmas. No one should be without Poinsettias in winter, and those who use them for the first time will, I imagine, always take care to keep up a good stock of them.

**Celosias** are likewise excellent winter flowers. Unlike many, they are not produced from cuttings, but may be readily obtained from seed. This for the winter plants need not be sown before July, and from then until now the young plants may be grown on in frames. After this they should have a little more heat, such as is generally afforded by one of those useful odd houses set apart to bring flowers forward for the conservatory. As the shoots grow they are always inclined to bloom at the points, and if this is allowed to take place they will not become very bushy, but by picking the blooms off as they appear shoots and leaves will be made, and the flowers may be allowed to form after the plants have got to a good size. The flowers may have been kept off until now, but after this they should be allowed to grow, and during November and December they will make a pleasing display, their feathery plumes mixing in and contrast well with the other flowers already named. Small plants in 6-in. pots are generally the best after this time, or two or three may be put into a larger-sized pot.

**Heaths** of the *hyemalis* and *gracilis* types are useful and much used in early winter. Plants of them grown on from year to year in private gardens are seldom so satisfactory as those little ones sold so plentifully in autumn by nurserymen. Indeed, it is chiefly in the shape of small plants that these are most useful, and it is difficult to get them in this state excepting from those who propagate and rear them. Heaths remain a remarkably long time in bloom, and plants which may be showing flower bud prominently now will be masses of blossom at Christmas or longer. They like a cool atmosphere, abundance of water at the root, and no shade.

**Deutzias** can seldom be had in good condition until spring is approaching, but when they do come they are most useful. Only plants which have made good strong sucker-like growth and well matured need be forced early. A close, warm, moist place is most conducive to their early free growth and flowering.

**Spiræas** may be brought on in the same way, and the earlier they can be had the better, as no flowers are more lovely in winter. Foreign-grown roots are generally well matured, but those which are kept in the same pots year after year in our own gardens are well worth attention. Spiræas are very fond of water, and this must be given them unsparingly.

**Camellias** in many instances form a staple flower in winter. When they can be had out in October and kept on until April nothing is more prized. Winter is their natural blooming time, and where their summer culture has been properly attended to their flowering should be a certainty. They do not withstand forcing so well as many things. In fact, they will bear leading, but not

driving, and the buds may be induced to develop more freely if abundance of water is given to the roots at the present time, syringing overhead in fine days, and exposing them well to the light.

**Mignonette** in pots, which has been grown with the intention of supplying flowers in winter, will be useful, and if fairly well established, little difficulty will be experienced in getting it when wanted. A greenhouse temperature suits it perfectly, and weak manure water is generally a great help to it. It also needs fresh air as often as the weather is favourable, and any attempt at shutting it up in a close, fusty place will prove fatal to it.

Other plants which may be grown for winter flowering are *Gesneras*, *Epiphyllums*, *Plumbagos*, *Libonias*, *Habrothamnus*, &c. It may be stated in reference to all the foregoing that small, clean, healthy plants will always prove most satisfactory, and be for the most part better appreciated than larger ones.

CAMBRIAN.

**Defoliating Pelargoniums.**—In reference to the remarks on this subject (p. 264), I consider that the gardener was right in removing the leaves from the plants; therefore on that point I do not agree with "W. W." The after management was the cause of the mischief—the cold and damp, and, I suspect, overpotting. I have invariably for the last fifteen years or more adopted the following plan with satisfactory results: I lift the plants carefully and cut away all the large leaves, just retaining the small ones, and shorten all straggling shoots. The plants are then placed in pots just large enough to pack in their roots and a little soil, and then placed in heat—if possible plunged—to re-establish themselves, which they will do in about a month or six weeks, commencing to grow and flower again freely for a length of time, after which they may be placed in a cooler house, so that success depends on these two points—small pots and heat for a fresh start, and the failures are reduced to a minimum.—E. BARTON, *Bush Hill, Cork.*

**Winter-blooming plants for a cool house.**—I have a flower bed 6 ft. wide at the foot of a south wall of the house, over which (and the path) I think of erecting a temporary glass structure (unheated) from November 1 to April, after which it must be removed, as it would interfere with the look-on of the garden during the summer. Can anyone kindly give me a list of plants and shrubs suitable both for the wall and bed that would bloom between November 1 and April 1? also ornamental foliage plants and shrubs that would be benefited by such protection. There would be direct communication with the house, and as I wish to make a winter promenade and garden, any further information, such as suitable plants for hanging baskets, &c., would be gratefully received.—F. C. B.

#### GREVILLEAS.

THE genus *Grevillea* is exclusively Australian, where, especially on the south-west side its members form a considerable portion of the vegetation. Australia is the head-quarters of the rich Order Proteaceæ, which a quarter of a century ago was very popular in gardens in this country, both on account of the grace and neatness of the foliage, and beauty and singularity of the flowers of many of the species. Since that time, however, a great change has taken place in horticultural taste, and the magnificent *Banksias*, *Proteas*, *Hakeas*, *Lomatias*, and many of the *Grevilleas* have along with many other once popular Australian plants given place to those of freer growth and better display. Several of the Fern-leaved *Lomatias* are still to be found in some gardens, and the genus *Grevillea*, of which over 150 species are found in Australia, is still to be found represented by about half-a-dozen kinds, on the usefulness and cultural requirements of which I propose to say a word or two. For general decorative work, whether it be on the dinner table, in the garden, or even the cottager's

window, there are few plants that surpass the well-known

**G. robusta**, a fact which is abundantly testified to by the large numbers of this plant that are sent weekly to Covent Garden Market. Possessing as this plant does graceful Fern-like foliage, and a habit which is neither too thin nor yet too dense for the table or window stand, together with a hardy, robust nature, which enables it to bear a considerable amount of rough treatment, too much cannot be said in its favour for the uses above mentioned. And especially is this true with regard to its value as a plant for the hall-stand or cottage window, for which latter purpose the demand is ever on the increase, for I have known this plant to do well for over two years in a cottager's window facing north, where it grew freely and kept well through the winter. It is remarkable that although this plant grows into a large tree in Australia, where in fact it is one of the tallest, yet the leaves produced on plants in small pots in this country are quite half as large again as any seen in Australia.

For the propagation of this species, quantities of seeds are yearly imported, as it seldom thrives satisfactorily when propagated from cuttings. These seeds should be sown late in autumn, or early in spring, in light sandy soil, and placed on a strong bottom heat where they will soon germinate, when they should be potted into small pots, and kept in a warm moist house. As soon as these pots are filled with roots the plants should be shifted into 5-in. pots, for which shift a rich loamy soil may be used. This should not be pressed too firmly, as the roots delight in an open soil. A warm shady position, such as is to be found in a forcing house or vinery, will now be found to suit them, and frequent syringing over head will be of the greatest benefit, keeping them clean and free from insects. In about six months from the time of germinating nice useful plants should be formed which may be hardened off and placed in a cool frame or outside. I have not heard of this plant ever having stood out of doors during the winter in this country, yet, judging from its hardy nature, there seems no reason why it should not do so in the warm southern districts. The flowers of this species are not very ornamental, being of a dingy brown colour and small. They are produced on the old ripened wood. About Moreton Bay this plant is known among the Pine cutters as the Silk Oak, from the soft silvery pubescence on the under side of the leaves. In some of the colonies, notably in Mauritius and the neighbouring islands, this species is extensively grown for its timber, which is excessively hard and close grained.

**G. rosmarinifolia** is, as the name implies, similar in foliage to the Rosemary. It forms a handsome shrub, whether grown in a pot or planted out. It is quite hardy in the south of this country, and in Ireland, and is therefore of great value as an ornamental flowering shrub. It grows very freely, and will, if liberally treated, soon form a compact bush of about 6 ft. in height. In pots it is equally effective, and is frequently met with in some of the gardens about London. The flowers of this species are borne in slightly drooping heads, produced in great profusion at the ends of the short lateral shoots. They are of a bright purple colour, tipped with yellowish green.

**G. lavandulacea**, sometimes known as *G. rosea*, is not unlike the last mentioned species, with which it is frequently confounded. The leaves in this species are less rigid, and the flowers paler than in the Rosemary-leaved kind; the flowers, too, in *G. lavandulacea* are borne in terminal racemes.

**G. ericifolia** is a dwarf needle-leaved kind of very slender habit. The flowers are of a bright red colour, and are freely produced on the ends of the numerous twiggy branches, from which they hang in a very graceful manner. It is a very pretty pot plant, and deserves much greater favour than it seems to enjoy at present, from the fact of its flowering in the winter and early spring.

**G. elegans** is a shrubby, round-leaved species, with flowers resembling those of *G. rosmarinifolia*.

**G. Thellemanniana** (*G. Priessi*) is of rather recent introduction to gardens, and is one of the



most beautiful greenhouse flowering plants we possess. It grows to a height of 5 ft., is very graceful in habit, and a free grower. The leaves are finely and deeply divided, and are not unlike those of the old *Ipomœa Quamoclit*. The flowers are freely produced in dense heads, which hang from the ends of the branches by long hair-like stalks, and are of a brilliant rose colour, tipped with yellowish green. The long curving styles of these flowers add considerably to their beauty.

With the exception of *G. robusta*, the whole of the above are freely propagated from cuttings, which should be selected from the lower ripened shoots of an old plant, as these are less likely to fall victims to damp than the younger sappier pieces. Spring is the best time for putting in these cuttings, a sandy peat soil, bell-glasses, and a slight bottom heat being what they require. As soon as rooted they may be potted into small pots in a mixture of sand and peat—one part of the former to three of the latter—and kept in an intermediate temperature until ready to pot again, when they may be shifted into larger pots and treated to a mixture of loam and peat, equal parts, with a little leaf mould and sand added. A cooler temperature will now be found suitable for them, and in the summer they should be placed in cool frames or outside in a slightly shaded position. When well established they may be grown along with *Heaths* and *Epacris*. Careful use of the watering-pot is necessary if success with these harder-wooded kinds is aimed at, and especially is this to be said with regard to *G. Thellemanniana*, which along with many other beautiful hard-wooded plants has the bad character of suddenly dying even when apparently in the best of health to death. The little extra care, however, which these plants demand is amply rewarded by their fine appearance at almost all seasons of the year. B.

***Calceolaria violacea*.**—This is hardy in Ireland if protected with turf mould or ashes during the winter months. It is distinct in port and flower, and was formerly cultivated in gardens as a greenhouse plant under the name of *C. Jovelliana*. Its delicate lilac, helmet-shaped flowers are freely produced during April or May, and are delicately dotted with purple within. It is readily propagated from cuttings of the young wood, and well merits a place in the cool greenhouse in localities where it cannot well be cultivated at the foot of a warm wall in the open air. The annexed illustration represents a twig and flower of the natural size.—F. W. B.

## SEASONABLE WORK.

### FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

CHOICE should now be made of the most suitable plants for use in the flower garden next year, and a correct estimate formed of the different quantities required. Room under glass, otherwise needlessly wasted, may thus be saved. To carry out this economy of space a few *Alternantheras*, *Coleus*, *Iresines*, and similar tender subjects should ere this have been propagated to keep for stock, and if this has not been done it is high time to take up some plants from the beds where they can be spared, and to have them potted and at once placed in heat so as to get them established as quickly as possible that they may be carried through the winter with safety. *Lobelias*, too, which grow so irregularly from seed, should be treated in the same way without heat, as by making selections of these and working up from them the necessary quantity of cuttings in the spring, uniformity of lines may be secured. Although too late now to think of propagating *Pelargoniums* and the general run of bedding plants, it is the best of all seasons to set to work with *Calceolarias*, which are now well furnished with plenty of young succulent shoots, and these, taken off, and handled, and cared for properly, cannot fail to strike. The way to manage *Calceolarias* is to prepare a pit or frame that has

been used for Melons or Cucumbers by digging over and levelling the soil, and then covering the top with a half inch or so of clean, sharp sand, into which the cuttings may be dibbled at about 2 in. apart, when they should be watered through a fine rose, and kept quite close till they callus. In herbaceous borders the chief things requiring attention will be the *Antirrhinums* and *Pentstemons*, which, though considered hardy, get sadly cut up in winters like the last, and therefore where any specially good kinds are grown, and it is wished to preserve them, no time should be lost in putting in cuttings, which strike well in pots in cold frames, and it is a good plan to dig up and winter the year-old plants or seedlings under the same kind of protection and plant out again in the spring. Treated in this way, they flower early, and continue on the whole summer through, and there is nothing finer or more valuable than their

In the stove where small plants of *Crotons*, *Dracenas*, *Dieffenbachias*, &c., are in demand, any that have grown too tall and naked should be at once cut down, as if delayed they break out both slowly and weakly, and the cuttings take long to root. Such cuttings do best singly in 2-in. or 3-in. pots, filled about one-third full of crocks, over which is placed the soil, consisting of sand, loam, and peat, in equal parts, with a layer of sand on the top, all being pressed moderately firm. They will succeed best if the base rests on the crocks, and if no more leaves are taken off than is absolutely necessary to facilitate insertion. After being watered place them in a close case in the stove and remove the lights for a little while each morning to dry up any superabundant moisture, but not to the extent of causing shrivelling. This is a good time for putting in cuttings of such evergreen shrubs as are now in many places used for



*Calceolaria violacea*.

spikes for cutting. To give herbaceous beds and borders a neat appearance many hurry away the stems of the plants, which is a great mistake, as both stems and leaves are required till they die away naturally, and to remove them before has a serious weakening tendency, and more especially is this so in the case of *Lilies*, which have bulbs to develop and ripen. *Gladioli*, too, for the same reason should be left in the ground for some time yet, and when lifted the tops ought to be preserved fresh as long as possible that the crowns may not shrivel. To prevent this, it is a good plan to bury them in pots of sand, with their names attached, in which way they go gradually to rest, and can be preserved safe and sound through the winter.

### PROPAGATING.

**Bedding plants**, with the exception of the later ones, will all be rooted; therefore, the principal attention now required will be to guard against damp, especially among those last put in.

decoration during winter. A frame will be the best place for the more delicate kinds such as *Euonymus*, the smaller growing sorts of *Box*, *Osmanthus*, variegated *Ivies*, &c., and if a good layer of sandy soil be placed therein in which to insert the cuttings, they may be put in moderately thick. The lights should be kept close and shaded during bright sunshine. Thus treated many of them will root before winter, and if gone over early in the spring, and the tops just pinched, they will then break before being planted out, which should be done about the beginning of April, and the result will be good sturdy little plants by the end of the summer. Where it is intended to put such cuttings in the open ground, care must be taken that the wood is well ripened, and at least 4 in. should be inserted in the soil, as if the cuttings are either of too soft a growth or put in too shallow, they are apt to shrivel up during drying winds. In the case of deciduous kinds it is best to wait till the leaves fall.—T.



# PLANT HOUSES. T. BAINES, SOUTHGATE.

**Amaryllises.**—These will bloom in succession over a period of many months, but to do this a considerable number are required, and the time of making growth in the case of those that are kept back for the latest flowering will necessarily be later than that of those which are to bloom earlier; consequently all that have not fully matured their foliage must not be allowed to get dry at the roots. Where these and other bulbous plants are forced to rest before their growth is fully completed, the bulbs do not increase in size, and their power to produce offsets and bloom strongly is much reduced; in fact, the successful cultivation of this class of plants depends on their growth being fully completed, and on their foliage in all cases being kept free from insects. The evergreen kinds especially are often injured by being allowed to become infested with red spider and thrips when the plants are submitted to drier treatment in autumn than that to which they were subjected earlier in the season.

**Crinum and Pancratiums.**—The demand for these sweet-scented flowers for cutting is much on the increase. Their season of blooming is greatly dependent on the time they make growth. As usually managed they flower in the latter part of summer, but where there is a sufficient quantity of bulbs at command it is desirable to arrange for a succession of bloom. They like abundance of light whilst growing; their foliage is, however, somewhat impatient of too much direct exposure to the sun in the middle of summer, but after this time all that can be given them will be an advantage. There is a large number of both *Crinum* and *Pancratiums* in cultivation, the white flowered species being much the most useful; of the latter *P. fragrans* and *P. rotatum* are the best I have tried. Some growers do not succeed in blooming the latter so well as the former; it needs a lower temperature than *P. fragrans*.

**Griffinias.**—Where blue flowers of a lasting character are required there are none that give such a long succession through the last months of the year as these South American bulbs. They increase slowly by offsets, but they can be raised from seeds, the fleshy masses of which vegetate when laid on the surface of a pot or pan of sandy peat or loam. Where they have had as much warmth as is needful to promote free growth, strong examples will now be throwing up their bloom stems; they should be kept in a night temperature of 55°, which will be sufficient to open the flowers well, and give a longer succession than when subjected to more heat.

**Nepenthes.**—These plants if allowed to grow too tall without cutting back do not produce pitchers so well developed and handsome as when they are periodically headed down. When managed so as to make free growth they should be cut back in this way about every two years. The present is a good time for so treating them, and where anything like a good stove heat is kept up in winter, cuttings made of the tops are in a more suitable condition for striking than at other seasons. The plants may be headed back to within 1 ft. of the crown, leaving all the leaves entire below where severed, but cutting out the eyes on the upper part of the stems thus left, an operation which causes the plants to break stronger. The cuttings should consist of two joints, with at least one-third of the topmost leaf left to each, making a clean cut of the lower joint. A mixture of one half sand and peat, added to an equal portion of fine broken crocks, will answer well for them. With this material fill some 6-in. or 7-in. pots, inserting the cuttings five or six in each, covering them with a bell-glass, and keeping them warm and moist. Thus treated a good portion of the cuttings will root during the winter, when they can be potted off singly. See that both young stock and specimen plants are kept free from thrips, which secrete themselves on the undersides of the leaves. They may, however, always be kept down by getting water well under the leaves with the syringe. Any one who has a stove that is

kept at a temperature of not less than 65° at night during winter may grow these plants well if they are kept free from insects and care is taken that the soil in which their roots are placed is always wet.

**Greenhouse.**—*Cinerarias* intended to succeed those coming in earliest should at once be moved into their blooming pots. There is no greater mistake in the cultivation of these plants than to let their roots get much matted in the little pots before repotting, as they never move so freely afterwards. Good loam with a little leaf mould, rotten manure, and sand, is what they like. See that they are quite free from aphides and thrips. They will be better in cold frames; but placed on a bottom of damp coal ashes, *Primulas*, to bloom early, should immediately be put in their flowering pots, and those that have been raised from later sowings and since pricked out in pans or boxes ought to be potted. These like the soil a little stronger than *Cinerarias*; the soft, fat yellow loam obtainable in Kent and some other parts of the kingdom grows them admirably. Keep them close to the glass.

## ORCHIDS.

J. DOUGLAS, LOXFORD HALL.

**East India house.**—The plants in this house should now be as much exposed to the sun as possible, and where the house is span-roofed with the end to the south, shading will not be much required, and should only be used during warm, bright weather, for an hour or two at mid-day. Particular attention should be given to watering, which ought to be applied with a syringe, taking care that none of it goes on the leaves. It is best to water in the early part of the day, with water that has been standing in pots all night near the hot-water pipes. *Saccolabiums* and *Phalaenopsis* should be surface dressed if they require it. These and similar species have so far been freely supplied with water, and the *Sphagnum* has grown up in some cases so much as to cover the centre of the *Phalaenopsis*; this ought to be removed, replacing it with some fresh *Sphagnum*, which has been well washed in clean water before using it. It will not grow much after this time, as in the course of a month it must be allowed to become rather dry before watering it. In surface dressing all decaying matter ought to be removed. *Aerides nobile*, a good form of *suavissimum*, is now in flower. It is not only a useful species for flowering late, but also exceedingly handsome. We have *Cattleya superba* in flower now, and very beautiful it is, and distinct in colour from that of most other *Cattleyas*; few, too, require less attention. It should be tied to stumps of *Tree Ferns* about 1 ft. long, when it will annually make good flowering growths if kept near the glass in the warmest house. *Dendrobium formosum*, not yet out of bloom, ought to be grown in baskets and suspended near the roof. Many of the *Cypripediums* also flower at this season. We have a large specimen of *C. Stonei* throwing up three good spikes, and the flowers are just open. *C. Harrisianum* also flowers at this season, and the pretty singular-looking *C. Dominianum* is not yet over, while chance blooms may still be found of the pretty *C. niveum*. All these may be looked over, and if any of them would be improved by a little fresh material being added to the surface it may be done. The temperature of this house need not exceed 70° at night. Our house falls in cold nights to 65°, but we do not care to have it lower than this until the season is further advanced, when it may fall between 65° and 60°, but not lower. Trap slugs, snails, and woodlice, watch for them at night to prevent them eating any flower-spikes coming up, or the succulent roots of *Saccolabiums*, &c. The eaten roots sometimes rot and do much injury. We have not yet got rid of thrips, but the instant they appear the plant infested with them is either washed with a sponge or dipped entirely in a solution of tobacco and soap. The yellow aphid is also troublesome to destroy; the instant a plant is touched, one of their number acts apparently as leader, and the

whole of them troop after it down the stem and hide in the *Sphagnum* at its base, from which they re-ascend at their leisure.

**Cattleya house.**—If *Odontoglossum Phalaenopsis* has been kept in the cool house until now, it should be removed to this house and placed in a position quite near the glass; a good plan is to place the pots containing the plants in teak baskets and hang them up to the rafters. Our plants have been placed on shelves, where they have succeeded much better than they did when further removed from the glass on the stage along with *Cattleyas*. *Odontoglossum vexillarium* requires much the same treatment. We removed our plants from the cool house the week before last, and placed them near the glass; before doing so, the surface of the compost was made fresh by the addition of living *Sphagnum* and good fibrous peat. Where the *Sphagnum* grows so luxuriantly as to cover the pseudo-bulbs, we sometimes press it down with the fingers, and at others remove it, supplying its place with that which has been freshly gathered. *Oncidium crispum* and *O. varicosum* are now throwing up their flower-spikes; the tender growths of the former when about 2 in. or 3 in. in length are frequently eaten over; and they can only be saved by watching at night with lamp-light for the depredators. Both of these species seem to succeed best if planted in upright baskets, or rather cylinders of teak. I have grown them successfully in this way with a length of *Tree Fern* split into quarters and placed in the interior of the basket. The roots run into and take firm hold of the *Tree Fern*, the loose nature of which retains water, but not in sufficient quantity to injure the roots. *Oncidium Marshallianum* may soon be showing the points of the flower-spikes from the base of the pseudo-bulbs, and ought to be looked over every night. The very showy *Odontoglossum grande* makes a beautiful display at this season in the *Cattleya* house. Some grow there in the cool house, but there I have found the bulbs had a tendency to rot when their growth was nearly completed. This they do not in the drier and warmer atmosphere of the *Cattleya* house.

**Cool house.**—*Masdevallias*, &c., should now be potted without delay, and surface dressed if required. All flower-spikes coming up, too, must be preserved from depredators. The earliest spikes of *Oncidium macranthum* will now be showing, and should also be carefully guarded, but they will not reach the flowering stage until June. *Odontoglossum bicornense* is a distinct and useful species, and one which does well in the coolest house. It is now in flower and lasts in beauty a long time. *Laelia autumnalis*, a good cool house species, is now showing its flower-spikes; the best varieties of this *Laelia* are truly valuable plants, and form quite a distinct feature in the cool house.

## FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Orchard houses.**—By this time pot trees of all kinds that have been kept under glass will be clear of fruit, and the latest batch will be fit for potting. A few years ago no one thought of disturbing the roots of a deciduous fruit tree until it had cast all its leaves, but it is now generally admitted that the best results follow potting immediately after the fruit is gathered. The after-treatment is, of course, different, as trees which are potted before they go to rest require the shelter of an orchard house where they can be syringed occasionally until the wood is ripe, when the best place they can occupy is a sheltered situation out-of-doors. Here they should be placed, not too close together, with the pots fully exposed to the atmosphere until bad weather threatens, when they may be well packed with dry fern to secure the pots and roots from frost through the winter. Shelter from rain is quite unnecessary, as pot trees suffer more from drought than they do from moisture. In course of time trees become too large for the house, and require shortening back considerably. When this is the case autumn is the best time to use the knife



and the pruning should always succeed the reducing and re-potting. Trees of ordinary size, which have been kept properly pinched throughout the summer, require very little pruning, and on no account should the shoots be shortened back until the triple buds can be distinguished. If maiden trees for potting have not been selected no time should be lost in looking them out, as first comers generally take the best, but it is not always advisable to take the strongest unless the wood is thoroughly ripe and the young shoots are evenly balanced.

**Strawberries.**—Plants of the different kinds selected for early forcing having filled their pots, which are generally small and full of roots, some little care will be needed in their management, particularly in the way of watering, as an excess of water may start the most prominent crowns, and the want of it might seriously injure the roots by causing the balls to shrink, and letting them separate from the sides of the pots. Later plants in larger pots are less liable to suffer in this way, but with these judicious watering until the time arrives for storing away will form a very important item. The best time to water is early morning, when every plant should be examined and supplied for the day without wetting the crown or foliage, particularly when diluted liquid is used as a stimulant. Let all plants be kept quite clear of weeds and runners, and give an abundance of space between the pots to let in light and warmth, which will facilitate the ripening of the roots as well as the crowns. In many places great difficulty has been experienced in getting healthy runners for early potting, and on this account the plants will have been making vigorous growth throughout the past month, but, notwithstanding the lateness of the season, the same ripening process must be gone through by elevating the pots on dwarf walls, planks, or shutters until the weather breaks in November. Worms, if possible, find their way into the pots, and soon do considerable mischief by running through the rich, heavy compost and clogging the drainage. Experienced growers go upon the principle that prevention is better than cure, but when they do find their way into the pots no time should be lost in getting them dislodged by watering with lime water before the plants are stored away for the winter.

**Pines.**—Plants which have well filled their pots with roots, if intended for starting early in January, will now require a drier atmosphere with liberal ventilation whenever the weather is favourable. As days decrease in length, and more fire-heat is needed, the minimum temperature may range about 68°, with a rise of 10° to 15° in the daytime, but no fixed rule must be adhered to, as the weather at this season is very changeable, and it is best to keep below rather than above these figures when the plants are going to rest. The most important point in the successful management of tender kinds like the Queen when resting is the bottom-heat, which should range from 80° to 85° for the next three months, and if this can be secured by keeping them plunged to the rims of the pots in dry tan or leaves, there is little danger of the roots going wrong or the fruit coming up prematurely. Plants intended to make growth before they start in the spring should still have every encouragement, particularly when favourable weather prevails, by maintaining a temperature ranging from 70° at night to 80° by day, and 85° to 90° at the roots. Give atmospheric moisture by syringing all available surfaces, including that of the bed, when the day temperature begins to rise, and again when the house is closed, but guard against syringing over head, particularly in dark heavy houses or close pits. By this time the potting for the season should be complete, but where stock is likely to run short a few of the strongest suckers which have well filled their pots with roots may be shifted into medium sized fruiting pots and plunged in a sharp bottom-heat with their heads near the glass in a light span-roofed pit if at command. In a favourable position with due attention to surface heat the plants may be kept in good growth for the

next six weeks, and slowly moving through the remainder of the winter. Collect all fruiting plants together in a house by themselves where they can receive treatment most favourable to the swelling or ripening of the fruit, as anything approaching a close stagnant atmosphere through the last stage prevents the Pines from keeping after they are cut.

#### ORCHARD AND MARKET FRUITS. J. GROOM, LINTON PARK.

**Apples.**—Gathering and packing for market are now the chief operations in market gardens. For soft kinds of Apples, such as Keswick, Lord Suffield, and Cellini, the price is so low (from 2s. to 2s. 6d. per sieve), that it does not leave much for the grower after paying all expenses, and for this reason, the Goff Apple, a hard sour fruit, sold by the ton or about 2s. per sieve, and sent away in bags, or carried from the trees in large quantities by the buyers for the jam factories, is much more in favour with growers, and I find that at the fruit tree nurseries the demand for a better class of Apples for planting is likely to be very great, especially for such as are well coloured, which always command a good price. Worcestershire Pearmain is likely to become a leading market kind, and Mr. Gladstone, a very early Apple, cannot be propagated fast enough to meet the demand. All kinds of Apples that will keep for some time are likely to pay for storing. We are now gathering Stone's or Loddington Seedling, on which there is a splendid crop, almost every fruit being fit for exhibition. This sort has never been known to fail, but it does not over-crop itself like some sorts, and produces no small fruits. It does best grafted on a strong-growing, free stock, as it turns into bearing too soon to make a fine tree of itself, but grafted, it makes short, stubby growths that are not easily moved by the wind, and although so large an Apple it is not liable to get blown off.

**Pears.**—Amongst these such sorts as Ashdown Park and Louise Bonne of Jersey are now being sent to market. They are not so generally abundant as Apples, and are realising fair prices. Fertility (Rivers) is now fit for gathering, and is likely to be a leading market kind. I have not seen so good a crop of Marie Louise for years on standards as we have this season. They are more russeted than on walls, and generally of better flavour. On bushes or pyramids the fruit is quite equal to that on walls in ordinary seasons, and on espaliers Pitmaston Duchess is remarkable for its large size and beautiful clear skin; the majority of our fruit of this will weigh  $\frac{3}{4}$  lb. each.

**Plums.**—The season for these is nearly over, but Pond's Seedling is extraordinarily fine, and comes in well after Victorias. Belle de Septembre is a most useful sort for late market work, as is also Wydale, a very late Plum, very prolific, and only just colouring. Damson trees are being cleared of their enormous crop—one of the most remunerative of the year. The demand for trees of Farleigh Prolific is enormous.

**Walnuts** are a good crop; in fact, better than for many years, and Nuts and Filberts generally are above the average of past years. The price for these has remained good, and the quality is generally first rate. The season for planting is now close at hand, and where any quantity is to be got out, the land should be in a forward state of preparation for their reception; after the heavy rains, it should be in first class condition for planting next month.

**Bush fruits.**—Among these the best I can recommend are Black Currants, and the best sorts are Lee's Prolific, Black Naples, and Baldwin's. Where the land is moist they are a most remunerative crop; on light or stony soils the Victoria or Scotch Red Currant will be the best intermediate crop to plant.

#### KITCHEN GARDEN.

R. GILBERT, BURGHEY.

PUTTING Potatoes aside for a moment, I know of no vegetable so useful as the Onion, and in this

locality 1881 will be remembered as the worst Onion year on record; except in a few instances where proper precautions were taken against that great enemy the Onion grub the crop is a complete failure. Our land used for Onions is generally that on which Celery has been grown; being well manured, it is dug immediately after the crop is cleared. After digging we spread on the surface a coating of gas-lime, letting it lie until the day the seed is sown. I go over the land with a cultivator and well bury the lime. After being well trodden down I draw the drills and sow the seed. Under this treatment I am not troubled with the Onion grub. Proceed on all occasions when dry to earth up Celery and Leeks, planting vacant ground with Cabbage and Lettuce. Lifting Potatoes will be the order of the day if this fine weather lasts. Kitchen garden walks should now be thoroughly cleaned for the winter. Hoeing between autumn-sown Spinach, young beds of late Cabbage and Lettuce will not only kill the weeds, but benefit the plants.

#### ERRORS IN PLANT NOMENCLATURE.

INCORRECT names and errors in spelling are unfortunately too frequent at plant exhibitions, and the notes from "A. R." (p. 214) and "J. S. T." (p. 281), calling attention to this not unimportant subject, suggest the necessity of some arrangement by which such misleading errors may be prevented. Certainly at our exhibitions, if anywhere, correctness in plant nomenclature should be one of the first considerations with the secretary and those who act with him, and perhaps the judges in the respective sections might undertake to give attention to this matter; or if the duties of those gentlemen are already too heavy to admit of their devoting much time to it, might there not be some competent person employed whose duty it would be to see that all names were properly spelt, and as near as possible correct. Of course it is not to be expected that in a show of such magnitude as that held at Manchester the strictest vigilance and attention on the part of the officers would prevent errors from showing themselves, and, taking into consideration the immense amount of work which has to be hurried through in as short a time as possible before the public are admitted, such matters as these can be afforded but little time. But although great care should be exercised by the judges, &c., in this respect, the responsibility in all such matters rests with the exhibitors, whose duty, as well as to whose credit, it is to spare no pains in labelling their exhibits correctly, neatly, and in a legible hand. Were this better understood such deplorable blundering as that noticed by "A. R." would be of rare occurrence, and which reference to a good nursery catalogue or shilling manual would have prevented.

Although there were errors of this kind at Manchester, yet "J. S. T.," in his endeavour to make out his case, may not unjustly be accused of hypercriticism in pointing to what was apparently only a printer's error in the name *Delabechia*, and what he gives as another instance of incorrect spelling was in truth a blunder of his own, the name of *Erica Ubría superba*, under which the plant he mentions was shown (not "uhna superba," as he read it), being quite correct, as he will find if he refers to the figure under that name in Andrews' work on Heaths. The second name, *E. Ewerana superba*, was subsequently given by Aiton to the same plant, under which name it is figured in Loddiges' "Cabinet." Mistakes of this kind, resulting from the two names being used, are not unlikely, and I have known the same species grown and sold by nurserymen under the two names as distinct kinds. Apropos to this I may mention a blunder I heard committed at Manchester by a gardener, who, along with his employer, was inspecting the plants. The *Dracæna* sent out for the first time last year as *D. Lindeni* was exhibited as a new plant by a London nurseryman, under the name *Aletris fragrans aureo-variegata*, and by several exhibitors under the original name. Meeting with the *Aletris*, the gentleman asked if it was the same



as D. Lindenii. "Like it, very like it," replied the wary gardener, "but evidently new, from the name." And so it was forthwith noted as a desideratum. This name would probably gain the nurseryman an order, but may I ask, why Aletris? The plant in question is certainly a *Dracena*, and, I am inclined to believe, only a variegated form of the old *D. fragrans*, which, indeed, was once included in the genus *Aletris*, along with the *Funkias*, *Veltheimias*, *Blandfordias*, &c., but which has long ago been removed to the genus *Dracena*, by which name it is now generally known. *Dela-bechia* and *Brachychiton* are new names for the Bottle Tree of Australia (*Sterculia rupestris*), under which name I have known the plant some years in botanical collections, and which, according to botanical authority, is the name by which the plant should still be known. Another old plant, exhibited under a new and most erratic name, was that shown as a new plant and named *Zamia Watzeri*. Now the genus *Zamia* is confined to the New World, and differs in leaf characters from the plant above mentioned, which is undoubtedly an *Encephalartos*, and probably *E. horridus* var. *trispinosus*, a native of South Africa. Of course people interested in Cycads would, on seeing the plants, recognise the error at once, but those who visited the show are few in comparison with those who had to be content with a newspaper report, and anyone ordering the plant under the belief that it was new would feel some little mortification on receiving the old *Encephalartos* as a new *Zamia*. Another old Cycad under a new name was that shown as *Zamia crassifolia*, which was the handsome old *Encephalartos brachyphyllus*. Later on, however, I noticed that this error had been corrected. Again, the beautiful and well-known *Calamus ciliaris* was shown as *C. spinosus*. Amongst *Crotons* and *Nepenthes*, too, I noticed several incorrect names, but I do not think I need point out further instances of such misleading errors, which I have already admitted are more or less unavoidable, but which it is desirable in the interests of horticulture that something should be done to prevent or correct before the public are admitted. B.

#### CURIOSITIES OF SEED-TESTING.

IN making tests of seeds the fact must not be lost sight of that the finest-looking seeds, and those which show the greatest proportion of living germs, may not be the most desirable for the field or garden. Much depends on the variety—the choicest strains of some kinds producing seeds of inferior appearance and vitality. I have made some progress toward ascertaining the best methods and the most favourable temperature for germinating seeds of Wheat and the Cucurbitaceæ or Vine family. To aid in finding the best method I used some seeds which were fresh, well grown, carefully harvested, and not subjected to severe trials or exposure of drought and moisture, heat or cold. These reliable seeds were tested, side by side with others whose history was not certainly known. In the different modes of testing good fresh seeds varied much less in the per cent. which germinated than did those which possessed little vitality. In two trials only a few days apart, at about the same temperature, by one person, in the same room, with the same apparatus used in a similar manner, the same quantity of the same lot of unknown Wheat was tested with the following results: In both trials, ten lots of 100 kernels each were placed in saucers of damp sand. Of the first, 81, 82, 84, 85, 85, 87, 89, 89, 90, 96 germinated, an average of 86.8 per cent.; of the second, 56, 75, 75, 76, 77, 78, 78, 79, 82, 89 germinated, an average of 76.5 per cent. Here is a difference in the results of 10.3 per cent., for which I cannot account. In August, on different days, many lots of fresh, hand-picked, hand-shelled red Wheat were tested in several ways at temperatures varying from 75° to 136° Fahr. Excepting one kernel, in one of several lots at two different times, the average was 100 per cent. of germinating seeds. In open ground, 1000 of these seeds gave an average of 94.9 per cent. Side by

side with the above, the unknown Wheat varied from 39 to 86.8 per cent. in germination. Red Wheat germinated more slowly than white Wheat. Some experiments were made to ascertain whether seeds well dried after once or twice germinating would germinate again. In the case of Wheat, the plumule lived and continued the growth, if any growth was made, but the roots always died when well dried. If any growth was made a second or third time, new roots started out. Of fifty kernels of unknown white Wheat once germinated a little and dried, 96 per cent. germinated; twice dried, 88 per cent. Of fifty kernels once germinated till the plumule became  $\frac{1}{2}$  in. long, and the roots 1 in. or 2 in., then dried, 82 per cent. germinated; twice sprouted and twice dried, 48 per cent. Of fifty kernels once germinated till the plumule became 1 in. long and the roots 1 in. to 2 in., then dried, 38 per cent. germinated; twice sprouted and twice dried, 14 per cent. again germinated. Some tests with new Wheat now under way show still more favourable results than the foregoing. Seeds of Squashes known as Turban, Boston Marrow, Hubbard or Marblehead, and the common field Pumpkin, tested in several ways at a temperature of 80° or lower showed results which were very variable and unsatisfactory. Tested in a temperature of 100° to 136° Fahr., the results were more uniform and the per cent. of germinating seeds much higher. Seeds of Water Melons and Cucumbers varied but little whether tested at 70° or 136° Fahr.—PROFESSOR PEEL, in *New York Tribune*.

#### PROPAGATING.

**Acanthopanax quinquefolia variegata.**—This pretty variegated greenhouse shrub, the leaves of which are blotched and mottled with creamy-white, is best increased in August when the wood is partly ripe by means of cuttings inserted singly into small pots filled with peat and loam and made very sandy. Place them under hand or bell-glasses on a cool bottom in the propagating house, give a little air occasionally, especially after watering them, they will emit roots freely in eight or ten weeks. This plant may also be readily increased from roots; pieces cut up  $1\frac{1}{2}$  in. long, and covered over to the depth of  $\frac{3}{4}$  in., and placed on a gentle bottom heat, will soon throw up growth above the soil; when they get two pairs of leaves they may be potted off.

**Antennaria tomentosa.**—This is easily increased by division at any time of the year, but autumn is the best if a large quantity of plants of one size be required. They may be divided into small tufts, potted into 3-in. pots in September, and placed in a cold frame. Give a good watering, and keep the lights on for a few days. When sufficiently established they may be removed to their winter quarters.

**Arundo Donax variegata.**—This stately and highly ornamental plant is best increased in spring. Get the stock plants in about the middle of February in a temperature of 55°. When they commence to push up young growth, turn them out and take off all the side shoots. Pot them singly and plunge the pots half-way up in Cocoa-nut refuse, or any other material that will answer the purpose, on a nice bottom-heat in the propagating house. Water very sparingly till they have commenced to make new roots, which they will do in about 3 weeks, when they may be removed to another part of the house and gradually hardened off.

**Andropogon Schoenanthus** (Lemon Grass).—This beautiful sweet-scented Grass is easily increased if treated in the following manner: Select a plant with two or more shoots; cut them off all but one about 2 in. from the bottom, when it will produce a number of young shoots. These may be separated from the parent plant with a few pieces of young roots adhering to them. Put several into one pot or singly one in a  $2\frac{1}{2}$  in. pot, plunge them in a brisk bottom heat and

sprinkle them over-head two or three times a day. As soon as they are rooted, which will be in about three weeks, they may be repotted and grown on in a warm moist greenhouse.

**Chrysanthemums.**—All the varieties, both large-flowering, Pompones, and Japanese, are easily increased. If wanted for exhibition or conservatory decoration, the following year cuttings should be made of the shoots that come up from the bottom in November or December. Choose the strongest, making the cuttings about 3 in. long; remove the bottom leaf, cut just below the joint, and put them in singly in small  $2\frac{1}{2}$ -in. pots. Loam, leaf-mould, and rotten manure with a little sand, form the best compost for them. Tighten them well in and give them a good watering. Place them in a cold frame that can be kept close, covering it at night to protect them from frost, or they may be placed in the greenhouse. After the first week a little air may be given them. They will emit roots in three or four weeks, and may be shifted into a size larger pot. After flowering, if a quantity of plants are required, place in the greenhouse those from which the cuttings are to be got in a temperature of 55°, when they will push out cuttings. These can either be made of tops or single eyes. Prepare the cutting pots as for soft-wooded plants, and insert the cuttings all round the pot; give a sprinkling of water, and place them in the cutting-box on a gentle bottom-heat. They will root in about a week.

**Combretum purpureum.**—This is rather a difficult plant to increase; the best way is grafting it on pieces of root about  $1\frac{1}{2}$  in. long, and to get them strong enough they must be taken from a plant planted out and growing strongly. Cut the scions from wood about three-parts ripened, cut the piece of root so that the scion fits exactly—side grafting is best—and tie the two round with matting. Pot them singly in small pots, and plunge them on a brisk bottom heat in a case or under a hand-glass in the propagating house. Water must be given with great caution, as they require to be kept close, otherwise the scion will damp off before it becomes united to the stock. A little air may be given every morning, and when water is required it is better to remove any that really want it, and give them a little through a very small-spouted watering-pot. If the root and scion are both in good order, they will unite in about two months and commence to grow. They must by no means be removed too quickly, but gradually hardened off till they are able to stand out altogether. They may be propagated in this way at any time of the year, but the best month is June. The *Combretum* may also be increased from cuttings taken off when the wood is soft and young; take them with six leaves, and remove the two lower ones, leaving a joint. Put six or eight into a 3-in. pot filled with peat and sand, half of each, insert the cuttings firmly, water well, and plunge them in a good bottom heat in the cutting box. They will require very little air, and must be shaded from the sun. In about six weeks they will have formed a large callus, when they may be shaken out and potted in  $2\frac{1}{2}$ -in. pots without any crocks at the bottom, and again plunged till they are rooted. As they begin to grow take them up and see if the roots are coming through the bottom of the pot. Sometimes they will stand six or eight months, and often not more than half will make plants.

**Dahlias.**—The best way of increasing these is to get the roots that were taken up in autumn or pot roots in February. Put them on a gentle bottom-heat either in the propagating house or on a bed made up with fermenting material, covering over the tubers with sifted soil, and just leaving the crowns exposed. Keep them slightly moist by sprinkling them over twice a day. As soon as the young growths are from  $2\frac{1}{2}$  in. to 3 in. long, take them off near the crown. Prepare some finely sifted soil, consisting of loam, well-rotted manure, and sand well mixed together. Insert the cuttings in this; one sort may be put in a pot but I prefer one cutting in a  $2\frac{1}{2}$ -in. pot. If any of the shoots are too coarse and strong or pippy, cut them off; they are of no use, and they keep the



plants from throwing out a quantity of good cuttings. They are best placed in a moderately warm manure bed, kept sprinkled every morning, and shaded from sunlight. See that the frame is not too steamy, a matter which may be prevented by tilting the lights at the back with a small piece of wood. They will be rooted and ready to take out in about a fortnight, and may then be gradually inured to the open air. H.

## TREES AND SHRUBS.

### THE SYRIAN HIBISCUS.

(H. SYRIACUS.)

WHEN we consider that this hardy and truly handsome shrub was introduced from Syria in Parkinson's time, *i.e.*, in the first quarter of the sixteenth century, one would think that it would be plentiful everywhere; but quite the contrary is the case, notwithstanding the fact that it produces its blossoms late in autumn, when few other shrubs are in flower. To those who are acquainted with this Hibiscus, it might be mentioned that it is a deciduous shrub of rather upright growth, attaining a height of from 5 ft. to 9 ft. The character of the leaves and flowers is well shown in the accompanying illustration. In the type the flowers are a reddish purple, but it is such a variable species in respect to colour, that there are at least half-a-dozen really distinct varieties of it in cultivation. Of these the names of the best are *purpureus*, rich purple; *variegatus*, purple mottled with a lighter hue; *ruber*, red; *albus*, white; *totus albus*, pure white without the inner zone of red at the base of the corolla; *Celesté*, a beautiful variety with intensely rich blue flowers. These two last are new varieties, as yet but little known. Then there are the double white and double purple kinds, as well as one with variegated foliage, which is effective in a shrubbery during summer. All the varieties are perfectly hardy in our climate, and will thrive in almost any position or in any soil that is not too wet, but it flourishes best in an open position, not too bleak, and in deep rich sandy soil. In gardens in which *H. syriacus* exists it is now in great beauty, notably in the Duke of Wellington's garden at Strathfieldsaye, where, in the shrubberies, there are grand specimens of several of the varieties. They may be employed in many ways in the adornment of a garden or pleasure grounds. As isolated specimens on a lawn they have a fine effect if placed so as to appear to be a component part of the surroundings; planted in groups so as the colours may harmonise, they are equally striking, but perhaps the best way is to plant them so as to be embowered by evergreen foliage, which not only sets off the flowers to advantage, but modifies the bare appearance of the leafless twigs in winter. W. G.

### PINES IN ARIZONA.

**Pinus arizonica.**—Of this Mr. Lemmon, who has recently been exploring in Arizona, says: "Among the remarkable varieties there is time to mention only one Pine. In 1875 Dr. Rothrock, of the Wheeler survey, discovered on the Santa Rita Mountains a Pine tree having a strong resemblance to the common yellow Pine of California (*Pinus ponderosa*), but having its leaves in fascicles of five each, instead of three each, the number in the typical species. Coupling this character with others, derived from the smallness of the cone, &c., Rothrock judged the two to be distinct and gave it the name of *Pinus arizonica*, though admitting that his 'data were very meagre.' Last autumn Dr. Engelmann himself, with Professor Sargent, visited the Santa Ritas, and both became satisfied that the Pine was indeed distinct, and entitled to be ranked as a new species. Now in

the large enclosed forest of the Santa Catalina Mountains we find Pine trees of the appearance and description given for the *Pinus arizonica*, including the long, slender leaves, in bundles of five; but unfortunately for the fate of the new species, some of the leaves are in fascicles of all numbers from two to seven. On examination of this forest for several days, every variety of character distinguishing this polymorphous species was noted; the same as in the Sierra of California, with the added features of many-leaved fascicles and very small cones; so we are compelled to believe that the so-called *Pinus arizonica* is only a form, or rather a sport of the *Pinus ponderosa*, so variable in its forms in California as to have received there four or five names from the lumbermen, but all specifically

variety of a certain white Pine found on the Sierra Madre Mountains, Mexico, but of late declared by the highest authority (Dr. Engelmann) to be a distinct species. This Pine resembles the common Sugar Pine of California, but the cones are not half so long, and even when young the scales are strongly reflected, suggesting the doctor's new name for the species, *Pinus reflexa*. It is frequently met with in the deer park referred to, also on a similar plateau on Mount Graham, and is reported also from several other ranges."

**Abies carolinensis.**—A new Hemlock Spruce has been discovered in the Carolina Mountains, and described under the above name by Dr. Engelmann in the *Botanical Gazette*. Mr. William Canby, who has been south this summer,



The Syrian Hibiscus.

connected by intermediate forms. Of course, we must not deny that the *Pinus arizonica* may exist in the Santa Rita Mountains, a range some fifty miles southward of the Santa Catalina; but certainly the presumption is against it, and the facts presented, we think, show the wonderful transformation powers of isolation and climatic conditions to which this species has been subjected for ages, almost rendering it a distinct species. Fascicles of these Pine leaves of different numbers and various lengths have been sent, accompanied by the gist of the above notes, to Dr. Engelmann, Prof. Sargent, Dr. Parry, and to the California Academy of Sciences, from whom we may expect decisive reports."

**Pinus reflexa.**—Mr. Lemmon, in a note to the *Arizona Journal*, says: "This large and valuable Pine tree, until lately, was considered a

has also collected specimens. It is remarkable that large trees like these should so long have escaped the botanists who have been over the field.

**Olearia Haasti** was favourably noticed the other day as a good hardy white-flowered shrub. It may interest many to learn that it is also a most excellent sea-side shrub. I had occasion to plant a very much exposed garden last autumn and tried a good many things. I was the more induced to do this because the situation was mild generally, though exposed to wind at times. The usual sea-side shrubs, *Euonymus*, *Escallonia*, *Sweet Bay*, *Evergreen Oak*, *Veronica*, &c., were severely punished in the early winter to the extent of having all their leaves blown clean off them, the effect of which was that they all died to the ground, and



even Austrian Pines were rendered quite leafless. Moreover, to show the severity of this unusual gale, the leaves were blown off the Ivy on the wall, and Daisies, Pansies, Primroses, and similar plants were completely obliterated, but through all this the *Olearia* triumphed without losing a leaf, and has grown well and flowered finely.—T. SMITH, *Nerby*.

**Wellingtonia in fruit.**—I have a *Wellingtonia* raised from seed in the year '57, and now bearing a large number of cones on its west and south sides. May I reasonably hope that these will ripen? and if so, at what time should they be gathered and sown? or shall I leave them on the tree till they fall? The seed which produced my tree was brought from California, and the gardener who grew it here is now dead, or I need not have asked what its treatment should be, but shall be grateful for any information on that subject. A much older *Wellingtonia* here has never borne any cones, so mine are considered a rarity by all those who have seen them.—C. L.

**Ilex crenata.**—This and its variegated variety are two pretty dwarf shrubs, the former bearing pointed leaves of about  $\frac{1}{2}$  in. in length and of a dark green hue, while the latter has leaves variously mottled and marbled with yellow. Forming a compact bush of from 1 ft. to 2 ft. high, this Holly is well adapted for pot culture, or for the winter furnishing of flower beds. In the neighbourhood of London the late severe winters have in no way injured it.—ALPHA.

**Clematis graveolens.**—A very distinct species, bearing flowers of about 2 in. in diameter, of a yellow colour, slightly tinged with green; though not so showy as many of its congeners, it is nevertheless notable from the unusual hue of its blossoms. A small plant of it is at present in flower among the collection of *Clematis* in the dell near the flagstaff at Kew; it seems to be of a medium habit of growth, but it is too small and too recently planted to speak in reference to this with certainty. It was introduced from Tartary in 1845, but seems to be but little known.—H. P.

**Rhododendron Aucklandi and Lagerstromia indica.**—It may be interesting to know that *R. Aucklandi* is quite hardy in the Isle of Wight; it blossomed most beautifully in Sir W. Hutt's garden last spring. I think it has been six or seven years in coming to maturity, but it is now a possession of the highest value. Whereas *R. Nuttalli* could not bear up against the ordeal of last winter, *R. Aucklandi* did not seem to mind it at all, and its majestic loveliness was attractive in the highest degree. I have grown *Lagerstromia indica* on the open border for several years. It lives on with great ease, but from some cause or other it has not flowered with me.—H. EWANK, *St. John's, Ryde*.

**New Weeping Dogwood.**—This is illustrated in Mr. Meehan's new catalogue. It is a variety of *Cornus florida*, itself one of the most beautiful of shrubs. It is admired especially for its large white floral bracts, which are succeeded by red berries as brilliant as those of the Holly, while in the fall the deep red foliage is very effective. A weeping variety of such a good bush would alone be a valuable addition to our lists, even though it had to be grafted on tall stems, as other weeping plants are. But this beautiful plant has one advantage in which it stands alone among weeping trees; while every branch is heavily pendulous, the leader ascends straight as an arrow, and makes a plant which charms every one by its beauty, so unusual in weeping trees.

**The English Flower Garden.**—A principal object in the introductory part of this work, which will be illustrated, will be to show the various styles of flower gardens, and that it is not an art of one or few phases. If any of our readers can assist us in the aim to make it suggestive we should be greatly obliged. We desire sketches or photographs of interesting types or phases of flower gardening, old or new, or would send and

have them sketched if we knew of objects of sufficient interest.

## NOTES OF THE WEEK.

**CAREX PENDULA VARIEGATA.**—Again the indefatigable Mr. Wm. Elliot has been looking round among the woods and native plants for a pretty variegated subject, and he sends us a very striking form of the above plant with a bold broad band of gold running through the centres of its large leaves. If constant it will prove a valuable hardy plant, but all depends on the constancy and the effect of the plant as a whole.

**LILIUM NEILGHERRENSE.**—This beautiful Lily has been successfully grown this season in the Hale Farm Nurseries, Tottenham, where several plants of it are now finely in flower. It somewhat resembles its commoner relative *L. longiflorum*, but the growth is taller, the leaves narrower and more copious, and the flower more of a creamy white than a pure white. The Tottenham plants are grown in pots in an unheated glasshouse, which evidently suits it well. As to its hardiness, we have had no experience, but we doubt if it is perfectly so. Still, it is well worthy of culture as a greenhouse plant.

**PLANTS IN FLOWER AT YORK.**—The following are among the finest of the plants now in flower in Messrs. Backhouse's nurseries at York, viz.: *Tritoma Burchelli*, a brilliant form of the Flame Flower; *Gladiolus purpureo-auratus*, with sulphur yellow and purple flowers; *Gentiana gelida*, one of the finest of all the *Gentians*; *Dianthus Seguieri*, remarkable for the profusion of its large rosy purple blossoms which it produces; and *Lilium tigrinum splendens*, by far the best of the Tiger Lilies, and distinct from all the rest.

**BALSAMS.**—Messrs. Carter send us a large collection of these from some twelve thousand specimens in pots which they are growing for seed, and they are of very good quality. The Balsam is one of the plants that one does not often see grown thoroughly well, but this year, in the neighbourhood of the south of London, we observed a very handsome bed of Balsams planted in the open air. They seem to be a little more sturdy and persistent in their blossoms than they usually are indoors.

**THE GIANT OX-EYE DAISY.**—One of the boldest open air flowers of the week is *Pyrethrum uliginosum*, or *serotinum* as it is sometimes called, a good clump of which could not fail to be admired even by those who have no sympathy with hardy flowers. It is a most useful plant, bold in habit, extremely floriferous, and highly attractive in whatever position it is placed. It is valuable, too, for cutting from the flowers, having a particularly fine appearance in vases, especially under artificial light. Another similar flower is *Leucanthemum (Chrysanthemum) maximum*, but it is poorer in habit than the other kind.

**HAMAMELIS VIRGINICA.**—This shrub is just now an interesting object from the branches being thickly studded with clusters of its singular shaped yellow flowers, which remain on during the winter unless the frost is more than ordinarily severe. The fact of its flowering at a time when it has scarcely a rival among shrubs and its distinct appearance point it out as a plant that might with advantage be oftener seen than it is, for although introduced 150 years ago, it is seldom seen in gardens. It is now in flower near King William's Temple at Kew.—H. P.

**HEATHS AT CLAPTON.**—No one can form an adequate idea of the enormous extent to which Heath culture is carried on unless they have seen the nurseries of Messrs. Hugh Low & Co., at Clapton. Here the various kinds of Heaths may be seen by the acre all in the open air and in luxuriant health, so different from the half-starved plants often seen in private gardens. To give some idea of the numbers by which some kinds are represented we may mention that of *Erica hyemalis*, one of the most popular of Heaths,

there are some 60,000 plants, and others are in proportionately large quantities. It is the practice in this nursery to allow the plants to remain in the open as long as possible in order to more effectually ripen them. The brilliant *E. cerinthoides*, with its vermilion blossoms, is a fine sight, as are also some of the purple-flowered kinds. Other kinds of plants are grown in similarly large quantities; for instance, of *Cyclamens* there are some 40,000, all strong plants, in cold frames at present, and thousands of *Bouvardias* and other popular plants.

**CASSIA CORYMBOSA.**—This yellow flowered shrub comes to us from Farnborough Grange. Mr. Crook says the blooms are from a plant in the open air planted out in spring. It has acquired large proportions, and bloomed most profusely. It is to be regretted that this showy and useful plant is not oftener met with thus treated.

**CHEIRANTHUS MARSHALLI IN AUTUMN.**—Very fresh and good blooms of this come from the gardens at Farnborough Grange, where it is said the plants have flowered continually since spring, which is unusual.

**DWARF PHLOXES.**—We are pleased to see a very good bloom of these from Farnborough Grange. Their season is the spring, but freely grown in fresh soil, in the case of young plants, they may bloom in autumn.

**LARGE AND SMALL WHITE PLANTAIN LILIES.**—The largest flowered of all the *Funkias (F. grandiflora)*, with its long pure white and deliciously scented blossoms is beautiful now in many parks and gardens, though unfortunately it is too tender to be quite satisfactory. Not so, however, the small white-flowered kind known under the names of *F. speciosa* and *spatulata alba*, but more correctly *F. lancifolia albiflora*. This is perfectly hardy, and never fails to produce an abundant crop of flowers in autumn when most of its compeers are past their best. The flowers are pure white and well suited for cutting. It is in great beauty at the Hale Farm Nursery, Tottenham.

**HESPERALOE YUCCAEFOLIA.**—This new North American Liliaceous plant has been popularly called the red-flowered Yucca, but since we have seen it in flower the term seems so inappropriate, that it is not worth while perpetuating it. It might more aptly be called the Yucca-leaved Aloe, for its foliage resembles that of some species of *Yucca* in a striking degree, while the flowers and the way in which they are produced at once suggest some of the Aloes. It is now in flower in the Hale Farm Nursery, Tottenham, and has been so for a long time past. It is a finer plant than we anticipated from seeing the dried specimens sent us by Mr. Saul, of Washington, and will, if it proves hardy, be a desirable addition. The Tottenham plant is a small one, the tuft of erect channelled leaves with their filiferous margins being only about 1 ft. high, but the raceme of flowers which springs from its centre is upwards of 4 ft. in height, furnished thickly on the upper half with orange-red flowers nearly 1 in. in length.

**SINGLE DAHLIAS AT TOTTENHAM.**—Lately we have heard a good deal about single Dahlias, and we have seen large quantities of them, but not till we saw the vast collection in the Hale Farm Nurseries, Tottenham, had we an adequate idea of their extreme loveliness. In this nursery they are not only seen in large quantities, but in great variety, for Mr. Ware has made it a special study to collect from every available source, so that the collection represents every kind in commerce, besides large numbers of new sorts raised in the nursery; consequently, all the good, bad, and indifferent varieties are gathered together. The glory of the collection is, of course, the new white kind called *White Queen*, a sort in every respect superior to any other white kind we had hitherto seen. The habit of the plant is compact and extremely floriferous, and the flowers, which well overtop the foliage, are very effective. The petals, or more correctly florets, are broad, rounded, quite flat, and overlap, so as to form a symmetrical flower of great substance, quite different from some of the other white sorts grown in the collection which are flimsy and star-shaped. Among the coloured



kinds the finest we noted were Perfecta, a flower of firm texture and of a brilliant rich crimson; Beauty of Cambridge, a variety raised in the Cambridge Botanic Garden, a very fine flower of a bright, velvety scarlet, very floriferous, and good in growth; Thalia, a newly-named seedling, of a brilliant amethyst hue, very distinct in colour; Duke of Teck, a deep carmine; and Dark-ness, a deep maroon, the darkest of all. The finest yellow is Yellow Queen, a beautifully-formed flower of a clear rich yellow. Other good yellows are lutea, lutea grandiflora, and aurea. The now well-known Paragon is, of course, represented largely, both in its original dress with the marginal band of carmine on the maroon petals, and also in the maroon and carmine forms. These are but a few of the named sorts grown, and very few indeed compared with the immense quantity grown, which takes a long time to inspect thoroughly. We cannot do better than advise those interested in this beautiful class of plants to visit this nursery during the next fortnight, when they will be able to see such a display of single Dahlias as probably can nowhere else be seen.

**BOUVARDIA TRIPHYLLA.**—Among the vast quantities of Bouvardias grown at the Clapton Nurseries, this pretty little species is represented, though on a smaller scale than the majority of the other kinds. The brilliant vermilion hue of its small clusters of blossoms and its distinct habit of growth render it conspicuous among the others, though Mr. Casey prefers its relative *B. leiantha*, which he says is superior in every respect, the plant being better as regards habit of growth, brighter in colour, and altogether more suitable as a decorative plant. This, too, is largely represented. The new double variety is of course occupying attention, and no doubt before long will be largely distributed.

**HYPERICUM PATULUM.**—Among late flowering plants this Himalayan shrub is one of the most valuable. It is dwarf in growth and bears a profusion of golden-yellow cup-shaped blossoms 1 in. or more across all along the gracefully arching branches. It is quite hardy in the heavy soil of the Tottenham Nursery; hence it might be inferred that it is so elsewhere in the southern and midland counties. *H. oblongifolium* is a species similar to it, but a larger growing shrub and not so floriferous.

**CAMPANULA GARGANICA.**—Of all the late flowering kinds of Hairbell this dwarf species is the best. In several gardens about London, and particularly in Mr. Ware's nursery at Tottenham, it is now in great beauty—better, in fact, than it has been all the year. It is especially adapted for planting in large masses on the rock garden. The typical form of the Campanula seems to be a much better plant than that called *hirsuta*, a variety with downy leaves and paler flowers.

**THE QUAMOCLIT (*Q. coccinea*).**—That this most charming plant should be so little grown in gardens can only be accounted for by the supposition that it is not known. For the adornment of a stove or greenhouse not a prettier plant exists, and it is quite distinct from the ordinary run of tropical plants. It is a slender twining plant, with delicately graceful foliage, cut up in a comb-like manner; the flowers are some 2 in. or 3 in. long, with a narrow tube and a spreading limb of the most intensely rich carmine. The flowers are produced numerously all along the slender stems, and when seen turning round a pillar or along a slight support of any kind the effect is charming. In one of the stoves at the Clapton Nursery there is a fine plant in flower which attracts the attention of everyone.

**SINGLE DAHLIAS.**—As the single Dahlia is the favourite flower of the day, and justly so, too, I shall be happy to show mine to any one who cares to call and see them. They are grown on a vacant piece of building land at No. 200, Cromwell Road, South Kensington (Earl's Court Station is the nearest), and they can be seen on Monday, October 3, and two following days between nine and five o'clock.—W. H. CULLINGFORD.

**ANTIRRHINUM HENDERSONI.** Snapdragons are now doing their part in garden decoration, and this is one of the types which is most desirable among the spotted and variegated kinds. They all, however, make us long to see more of the pure distinct "self" colours represented in this family.

**DIEFFENBACHIA MEMORIA CORSI.**—This new hybrid Dieffenbachia, mentioned in *THE GARDEN* (p. 332), was obtained in the Giardino Corsi Salviati-Sesto Fiorentino, near Florence, and was dedicated to the memory of his father by the proprietor, the Marquis Corsi Salviati. I mention this that you may know its real origin. The plant is indeed unusually beautiful.—DELLA VALLE D'CASANOVA, Pellanza.

**NEW GENTIANWORT (*Tachadenus carinatus*).**—This is a recent introduction to the Gentian family from Madagascar. It is a sub-shrubby plant of bushy dwarf growth, and small bright green shining leaves with prominent veins on their underneath surfaces. The flowers are produced from the axils of the leaves; they have a narrow tube about 1½ in. long which suddenly expands into a broad corolla about 1 in. across. The colour is a bright violet-purple, which is set off by the bright green of the foliage. It is a pleasing addition to stove plants, and one that is easy to cultivate. It is now in flower at the Royal Exotic Nursery, Chelsea.

**LINDENIA NIVALIS.**—This is a handsome evergreen shrub from Guatemala, belonging to the Bouvardia family, which has lately re-appeared in cultivation after being almost forgotten for some years. The plant has a dense, twiggy growth, the deep green leaves being arranged in clusters towards the tips of the branches; the corolla is 1 in. across, pure white, salver shaped, with a narrow tube some 3 in. in length. When several flowers are expanded on the plant it has a pretty and distinct appearance. It is now in flower in Messrs. Veitch's nursery at Chelsea.

**THUNBERGIA FRAGRANS.**—In one of the houses at the Royal Exotic Nursery, Chelsea, this lovely old twining plant adorns the roof in a charming manner, bearing its pure white blossoms so profusely that the whole plant is a wreath of chaste beauty. The specific name of *fragrans* appears in this case to be a misnomer, for not a trace of perfume can be detected, at least in the daytime. Such a lovely plant as this ought to be more frequently met with in private gardens, especially as it is readily obtainable and of simple culture.

**ANTHURUM ANDREANUM.**—Probably the finest display that has ever been made with this superb new Aroid in cultivation may now be seen in Mr. Bull's nursery, at Chelsea, where there are upwards of 100 plants in flower arranged in one group in a stove. Nothing approaching the splendour of this display have we seen for a long time. Among this large quantity of flowering plants there is of course a striking diversity with regard to the size of the flower-spikes; some of these measure 5 in. or 6 in. in the greatest diameter, the nearest approach to the original dried specimens that we have yet seen. This plant will not be such a shy flowerer as many suppose. In Mr. Bull's collection there are comparatively small plants, bearing three and four flowers each. Its requirements are evidently well understood in this nursery, for the health and vigour of the whole collection is remarkable.

**THE WHITE WEIGELA (*W. hortensis nivea*).**—No flower can well surpass the chaste beauty of this variety of the common garden Weigela, from which, however, it differs in other respects than in bearing white instead of rosy flowers. The habit of growth is different, being more vigorous, dwarfer, and inclined to be prostrate in a small state, and the leaves are broader, more wrinkled, and of a paler green. The flowers are pure white, produced in long, loose clusters above the foliage, with which it forms a charming contrast. There is another white flowered variety named *candida*, which is, however, inferior to *nivea*, as the flowers are smaller as well as the foliage. It is, moreover,

readily distinguished by its more erect habit of growth. Both these are well worthy of culture; large masses of them are in flower side by side at Messrs. Veitch's, Coombe Wood Nursery, so that they can be readily compared. Other distinct varieties of Weigela also in flower are *Loomansii aurea*, with bright golden foliage and pink flowers; *Carminea*, deep carmine; and *Van Houttei*, the deepest crimson tinted form of all. These are all beautiful shrubs, especially valuable as autumn flowering plants.

**NEW APHELANDRA (*A. punctata*).**—This new species we saw the other day in flower for the first time in the nursery of Mr. Bull, Chelsea, who recently introduced it to cultivation from South America. It is a handsome plant, possessing a combination of beautiful foliage and strikingly ornamental flowers. The plants in flower are some 15 in. high, with stout erect stems bearing broadly lance-shaped leaves, having a broad silvery band through the centre, while the remainder of the leaf is a clear emerald green freckled copiously with silvery dots. The flowers terminate the stem in a spike cluster some 4 in. or 5 in. in length. The flowers are about 1½ in. long, tubular and curved, of a bright canary colour, proceeding from shell-like bracts arranged in an imbricate manner, and of the same colour as the blossoms. It is a distinct and pretty plant, and one that will hold its own among other species of the genus, showy and brilliant though they are in their flowers.

**GLOBBA COCCINEA.**—This new Gingerwort must eventually become an important garden plant, on account of its showiness, combined with its perpetual flowering property. It is a neat habited plant, growing some 2 ft. high, having slender arching stems that spring from all sides of the crown, so as to give the outline of the tuft a symmetrical appearance. Each stem is terminated by a dense cluster of vivid scarlet bracts and curiously-shaped yellow flowers, much resembling those of *Mantisia saltatoria*, popularly called Opera Girls. The contrast of the yellow flowers with the scarlet bracts is most striking. The flowers are useful for cutting, as they continue a long time in perfection, while, as regards grace and beauty, well-grown specimen plants will compare with any occupant of the stove. A large number of plants are now in great beauty in the nursery of Messrs. Veitch, who introduced it some time ago from some of the eastern Tropics.

A NEW SHRUB belonging to the *Verbena* family, under the name of *Caryopteris incana*, is a very pretty object in Messrs. Veitch's, Coombe Wood Nursery. The largest plants there are loose bushes about 3 ft. high, having slender twiggy branches. The leaves are 1½ in. long, pointedly ovate, coarsely toothed, covered with a white down on the under surface and deep green on the upper. The flowers are small, of a pretty lavender colour, and are aggregated in dense terminal clusters from 2 in. to 4 in. in length. The flowers have protruding stamens, which give the cluster a feathery appearance. If it should prove hardy its value will be greatly enhanced.

**Provincial show of the Royal Horticultural Society at Preston in 1878.**—Most of your readers will remember that at the above show the council awarded me the gold Lindley medal for my group of plants. I could not, however, obtain it, and ultimately, acting on the advice of counsel, I commenced an action against the society, in the Chancery Division of the High Court, to compel them to deliver it. Few will credit the fact that the Royal Horticultural Society would have recourse to the dishonourable subterfuge of pleading in their statement of defence that it was illegal under the terms of their charter for them to award medals, &c., at any place other than at South Kensington. This purely technical defence—they had, of course, none other—was enough. I had to discontinue my action, and I have recently paid £10 3s. 2d., the society's taxed costs—my own in addition. I abstain from comment.—T. M. SHUTTLEWORTH, *Preston*.



## THE KITCHEN GARDEN.

## POTATOES AT THE CRYSTAL PALACE.

ALTHOUGH the recent Potato exhibition did not serve to introduce any special novelty with unusual prominence, it certainly did present a kind that has but lately been put into commerce, in stronger force than it has yet fallen to the lot of any other Potato so recently introduced to be so represented. This was the Vicar of Laleham, a large, handsome, flat, purple round, and which was in all the competitions open to it more largely shown than any other. All exhibitors agreed in pronouncing it the finest Potato of the year, and, but little subject to disease. Schoolmaster was in strong force, and next to the Vicar of Laleham the most largely shown, but it also had a class to itself, in which some 30 dishes were staged. Next in order came Beauty of Hebron, Magnum Bonum, Grampian, International, Covent Garden Perfection, and Woodstock Kidney, Beauty of Kent, and Radstock Beauty, all good kinds. The leading coloured kidney was Trophy, but this American sort though beautiful is about the worst of this family ever introduced. Beauty of Hebron and American purple are amongst the best. The season has largely favoured American sorts, as they have enjoyed the unusual heat. In a year or two we shall have in such kinds as Mr. Fenn's new red kidney, certificated at Chiswick; Messrs. Lee & Son's Defiance kidney, a long, handsome, pale purple kind; and Mr. Bresee, sorts that will put these inferior table kinds, such as Trophy, entirely in the background. Amongst recently introduced white rounds Bedford Prolific and Reading Hero were well shown and good, although differing much in habit and character. The new Filbasket promises to take a good position. Mr. Fenn's pretty red round, so very fittingly named by him Berkshire Rose, was the only new coloured round introduced worthy of notice. This kind will be a formidable rival to Red Emperor, as it is handsome, and is also a heavy cropper. The seedling varieties shown, though in some cases promising, all labour under the disadvantages that they do not show their best qualities till they have been several years cultivated.

Amongst the most prominent white kidneys were Cosmopolitan (Dean), with a rough netted skin, and one which has been certificated at Chiswick; Kentish Invicta (Lott & Hart), a white form of Beauty of Hebron; Magnet, a handsome Lapstone-looking kind (Ross); and Lye's Prolific (Lye), having long, smooth, handsome tubers. These appeared to be the most distinct and promising. Amongst white rounds, Mr. Clarke, the raiser of Magnum Bonum, had Pride of the Market, a handsome Victoria-like kind. Mr. Dean had the Lord Mayor, a fine Regent-shaped tuber that has been certificated at Chiswick. Mr. Fenn had several of his fine Anglo-American rounds, one of which was selected for the prize in the class. These were the chief distinctive kinds. It was noticeable that coloured kinds were but poorly represented in the seedling classes, the partiality for white skins shown by the public no doubt putting some check upon the production of coloured sorts. It was not possible to avoid noticing the netted appearance of the skins of all English-grown tubers. Those shown by the Scotch growers were nearly the only exceptions to this rule. With the roughness of skin this season is also noticeable a very distinctive improvement in the table quality of all kinds, and thus we find how much many sorts of Potatoes are contingent upon seasons for the development of good flavour and mealiness. The soil is one vast laboratory in which Nature creates her products, and if there be more than usual heat there will be in the Potato tuber at least more of nutritious properties than can be found when heat is lacking. Rough skins always mark some kinds more or less, but still more so is this distinction observable in various soils, and knowing that the rough skin means, as a rule, plenty of starch, we understand that the production of this important element in the tuber has much to do with soils and their constituents. Still, as the Scotch-grown Potatoes show bright-

ness and smoothness of skin, it is not at all in antagonism to good table quality and high flavour.  
A. D.

**Forced French Beans at Arundel.**

On a recent visit to these princely gardens I noticed a large quantity of French Beans, four in a pot, growing outside. The variety was Fulmer's Forcing Bean. Every plant was quite a little specimen in itself, so dwarf and stocky. Mr. Wilson assured me that by starting them outside, he got a pot full of roots instead of a pot full of soil without roots. They are then moved to the back shelves of the Pine stoves, where they commence blooming and bearing at once. The plan appeared to me a step in the right direction.—R. GILBERT.

**Among the Peas.**—I am sorry that I cannot oblige the Messrs. Carter with a pod or a tracing of the Pea of which I want the name, as it has ceased bearing, probably from over-exertion, but the straw is still to be had in lengths of 10 ft.; 10 ft. is not an uncommon length for some varieties of Peas this year. Champion of England and British Queen in the same soil are nearer 15 ft., and still growing and flowering profusely, with no trace of mildew. I don't remember a season so free of it. The soil is clayey, with a sandy bottom, and it got an ordinary manuring. Rain it has had in plenty, and with very little sunshine, which may have been the cause of the Peas drawing up so much. The packet was sealed on the top of the string that tied it. I will get the true Telephone next year.—R. M. L.

## GARDEN DESTROYERS.

## GARDEN PESTS AND THEIR ERADICATION.

THIS is another contribution towards the literature treating of insects which are interesting to gardeners either as friends or foes. It is in the form of a pamphlet, and is one of the series of practical handbooks published at the *Bazaar Exchange and Mart Office*; the name of the author is not given, it is very fairly illustrated; many of the woodcuts are the same as those in Boisduval's "Essai sur l'Entomologie Horticole," but some of those which are not are very inferior. Figure 1, the Rose aphid; figure 18, the crane fly; and figures 45, 46, and 47, humble and hive bees, are almost comic. There is no index, which is a great omission, but the articles are arranged alphabetically according to the popular names of the insects. A short description and account of each insect is given with recipes, &c., for destroying them or warding off their attacks. These descriptions, &c., are fairly correct, but there are many mistakes; for instance, on p. 19, alluding to the caterpillars of the Cabbage butterfly, it is stated that they have sixteen pairs of legs, whereas they have only eight. The common froghopper is *Aphrophora spumaria*, not *Aphophora*. The author does not seem to know by what name to call it. In the letter-press it is spoken of as *Aphophora*, under the figure as *Cercopis*, and on p. 54 as *Cycada*, which should be spelled *cicada*. Here it is also mentioned that one of the best means of destroying it when attacking plants in pots and in its larval state is to immerse the pots in water for twenty-four hours. As the larvæ live on the stems and leaves of the plants it is difficult to imagine how this treatment can affect them. In the paragraphs on the Gooseberry and Plum sawflies the perfect insects are spoken of as moths. The mealy bug is said to belong to the Order Heteroptera or different winged insects, this a mistake, it belongs to the Order Homoptera, or similar winged insects. Several misspellings of names occur *Phyllobius* for *Phyllobius*, *Cheimtobia* for *Cheimatobia*, *Pygæ* for *Pygæra*, *cineta* for *cincta*, *rosarium* for *rosarum*, and some others.

After the description of the recipes under the head of the Apple mussel scale, the author says, "We personally object to the use of any oil, as it at times kills the trees." In a subsequent paragraph on the Pear tree oysterscale, which is a very similar insect, it is stated that, "The old remedy for this formidable evil was a scrubbing brush and sharp

sand or strong suds, but a much more simple and sure cure is train oil; this at once smothers and kills, so that the white and brown scale comes off of itself, and the bark that had become hard and useless grows soft and pliable, and is once more fitted for its vital functions in a proper and satisfactory manner." How can these very opposite statements be reconciled together? Surely there cannot be so very much difference between Apple and Pear trees that a certain treatment will kill one and regenerate the other. The author advocates the use of very strong poisons, such as arsenic, cyanide of potassium, and nux vomica as insecticides, and very rightly lays great stress on their dangerous qualities, but we can hardly think such drugs should be used for this purpose. It is very difficult for anyone working in a garden to keep their hands quite free from cuts and scratches, and unless the greatest care is taken when using even the diluted poison, some will get on the hands and may be absorbed into the system, causing very serious results. We can recommend this work to our readers, who will find it a useful and cheap, if unscientific, little book on garden pests.—G.

**Cockroaches.**—I am infested by an army of cockroaches; they came in the coke I use for the greenhouse stove. I have tried three or four of the advertised beetle powders, also beetle traps, &c., but without seeming to diminish their numbers. Can any of your contributors assist me, or give me any information how I can eradicate them?—W. A. S.

**Ants' nests.**—A friend of mine who has been much troubled lately with ants' nests in his grass fields, which are on a sandy soil, destroys them in the following manner: he opens the nests with a spade, and pours in a mixture of pearlash and liquid manure of about the consistency of thick cream. One application is sufficient. He first tried pearlash and water, but was obliged to use it twice before the ants were destroyed. I should recommend any one who is troubled with ants in greenhouses, &c., to try the effect of pouring some of this mixture into their nests. It would, of course, have to be made more fluid, and I imagine if used boiling would be more effective.—G. S. S.

**Ornamental Asparagus.**—While justly praising *A. plumosus*, we must not forget that there are other equally handsome species. The beautiful pendant *A. decumbens* should be more largely grown. It is just beginning to grow now, and during the winter will be lovely for hanging baskets or drooping over the front of a stage or shelf. The climbing *A. falcatus* is evergreen, robust, and handsome. There are many more species, but these form a trio equally fine in their way and as diverse as can be.—T. SMITH.

**Use for Yucca filamentosa.**—This *Yucca* grows spontaneously in many parts of South America, where its leaves are employed as a tying material. This year having used the last of some inferior twine, I tried the *Yucca* leaves for tying Grape Vines, and found them superior to anything ever used except wire.—M. B. P.

**Ancient Greek plants.**—Do you know of any book published in England or abroad in which the plants and flowers known to the ancient Greeks are identified?—R. W.

**Names of Plants.**—*M. C. F.*—1, *Lysimachia vulgaris*; 2, *Linaria reticulata*; 3, *Oxalis floribunda*.—*Anon.*—1, *Physostegia imbricata*; 2, *Chelone obliqua*.—*W. W.*—1, *Cotoneaster bacillaris*; 2, *Atriplex Halimus*.—*A. K.*—*Sternbergia lutea*.—*H. M.*—The dwarf is *Potentilla nitida*; the other apparently *Valeriana celtica*.—*H. B.*—If you will send us a specimen in flower, we will endeavour to name the plant.—*J. D.*—1, *Olearia Fosteri*; 3, *Begonia Knowsleyana* (garden hybrid).—*S. R.*—*Elsholtzia cristata*.—*R. Smith.*—*Bignonia radicans*.—*J. C. Talbot.*—*Impatiens glandulifera*.—*Cheshire.*—1, cannot name *Oxalis* without flowers; 2, *Helianthus levigatus* with rough leaves; 3, *Nephrodium molle*; 4, apparently *Asplenium bulbiferum*.—*E. Molyneux.*—1, *Astrantia major*; 2, *Pyrethrum parthenifolium* fl.-pl. —*A. F. H.*—1, send when in flower; 2, *Asplenium fraxinifolium*; 3, *Aspidium mooretideum*; 4, *Pteris longifolia*.—*H. Wells.*—*Crinum Caryoi*.

**Names of fruit.**—*T. B.*—1, unknown; 2, Fearn's Pippin. Gather them when the pips become brown, or when the stalk parts freely from the tree.—*W. N.* (New ark).—Pronounced by a very good judge to be the Haze but we doubt it.—*H. Wells.*—Apples. Please send your specimens again.

**Addresses.**—*R. W.*—Messrs. Vilmorin's address is—Quai de la Mégisserie, à Paris; that of Herr Max Leicht—Baden-Baden.



## THE ENGLISH FLOWER GARDEN.

**Aster** (*Michaelmas Daisy, Starwort*).—When we speak of Asters, we are apt to associate the name with the annual kinds popularly known as China Asters, and are thus led to overlook the rightful owners of the name—those hardy flowers, literally stars of the earth, which shine out all the brighter, owing to the time of the year during which they are in perfection. When our gardens are nearly devoid of bright colour, and when hardy flowers, of nearly all kinds, are at their lowest ebb, Michaelmas Daisies will bloom bravely during the last days of autumn. They are not quite so showy as Chrysanthemums at a distance, but when closely examined, they are more beautiful, their slender-rayed flowers possessing all the soft and delicate tints between white, rose, and purple, while the bright yellow disc gives them an additional charm. Nearly all the species, of which there are at least two or three hundred in books, are natives of North America, and are perfectly hardy in this country, thriving in any soil or climate, and requiring little attention. Their freedom of growth indeed is almost a fault, and they destroy other plants near them if care be not taken as to placing them properly. The worst kinds are generally the best growers. Scores of species have no merit whatever for garden borders and would speedily overrun them.

**SELECTION.**—Three distinct types of Aster may be readily distinguished by their habit of growth; first, there is the alpine or dwarf-growing kinds, from 6 in. to 3 ft. in height, such as *A. alpinus*; then the tall-growing kinds, varying in height from 3 ft. to 7 ft. in height; and lastly, those with spreading slender stems, such as *turbinellus* and *patens*. A representative selection should include some of each of these sections; therefore, of the dwarf kinds, we would recommend *A. alpinus*, a handsome sort, about 9 in. high, which produces large purple-blue flowers during summer. *A. Amellus* is also one of the most beautiful of hardy perennials; it grows about 2 ft. high, and produces a profusion of bright purple blossoms. There is also a white-flowered variety of it, named *bessarabicus*, which is even much finer than the type, but a little taller in growth. *A. longifolius* var. *formosus* is an extremely fine plant, remarkable for the profusion with which its heads of deep rosy pink flowers are produced on stems about 2 ft. high. The Pyrenean Starwort (*A. pyrenæus*), though not so showy as the last, is a desirable early autumn-flowering plant; it grows about 2 ft. high, and bears large heads of lilac-blue flowers. *A. Reevesi* is a pretty little variety, with slender stems laden in early autumn with tiny white flowers. *A. cordifolius*, *A. Lindleyanus*, and the *Galatella* section, *A. dracunculoides*, *linifolius*, may be added to the dwarf-growing kinds, as well as *A. sericeus*, a remarkably distinct and pretty kind, and *versicolor*, a dwarf sort, with flowers an inch across, changing as they grow older from white to mauve.

The kinds with a spreading habit of growth are extremely graceful, and ought to be in every garden, as the slender sprays are specially useful as cut flowers, in which state they last a long time in perfection. There are not many, the best being *A. turbinellus*, with large mauve flowers; *A. patens*, with a similar spreading growth, but smaller flowers; *A. laxus*, a fine species, with pale purplish flowers produced freely early in autumn. The tallest growing kinds are very numerous, and most of them possess a striking similarity in habit of growth and flowers. The most distinct are the largest kinds—*A. Novæ-Angliæ* and its varieties *roseus*, *pulchellus*, and *A. Novi-Belgii*; somewhat smaller are *A. Chapmani*, *A. Drummondii*, *A. puni-*

*ceus*, and *A. Shorti*, all about 5 ft. high; they should be included in a selection as well as some which bear doubtful names, such as *A. purpuratus*, *A. amethystinus*, *A. elegantissimus*, *A. multiflorus*, which may be found in trade lists, and not omitting the elegant *A. ericoides*.

**CULTURE.**—As regards their culture it is simple enough; they like a good soil, but do not refuse to grow in any kind. The question to be considered is rather how the plants should be placed. The dwarf kinds are excellent for the rougher parts of the rock garden or the front rows of a mixed border, and the taller and more vigorous sorts do well for naturalising, and many are valuable as cut flowers. In fact, so beautiful are these Starworts in the autumn, that wherever in gardens there may be no place for them in the general scheme of garden decoration, many will find it worth their while to grow the best kinds for the sake of their cut flowers alone. They add a new grace to the autumn days, but the better kinds are well worthy of a place in the finest gardens, and will do admirably with groups of the later flowering perennials such as the Flame flowers (*Tritoma*), the tall late Anemones, and the Cardinal flowers (*Lobelia*). But selection must be rigidly kept in view, and any stiff ugly mode of staking the plants avoided. Good culture and early thinning of the shoots will make this easier. The plants should not be left too long in the same position lest the tufts get weak and too thick. The following are the best kinds so far as there is any knowledge of the names of a genus so large and so confusing. All are easily increased by division of the root or by seed.

**A. alpinus** (*Blue Mountain Daisy*).—A pubescent dwarf kind, the single blue heads of which scattered over the Grass in high alpine meadows look like blue Daisies. In gardens it grows larger, and forms vigorous leafy tufts from 6 in. to 10 in. high. Flowers early; nearly 2 in. across. There is a white variety. Mixed borders and rough rock gardens; it is occasionally used as a bedding plant on the Continent. An interesting subject for naturalisation in an upland meadow. Division and seed like all the kinds.

**A. Amellus** (*Italian Starwort*).—A very handsome kind, 1½ ft. to 2½ ft. high. Flowers in late summer and autumn, being many, showy, blue. The variety *bessarabicus* very much resembles the species. A good border plant, and also fitted for the wild garden; in copses and by hedgerows. An excellent plant for cutting from.

**A. cordifolius** (*Drooping Starwort*).—A tall and graceful kind, with stems often zig-zag below, and inflorescence gracefully drooping; 3 ft. to 4 ft. high. There is some doubt as to the name of this kind, but under it at Kew some years ago there was a very graceful plant grown. In the Botanic Gardens in the Regent's Park the same plant bore the name *elegans*. It is valuable for its soft racemes of nearly white or pale lilac flowers, that hang soft as snow-laden branchlets. Beds of the finer autumn plants and borders.

**A. grandiflorus** (*Christmas Starwort*).—A peculiarly handsome species, with somewhat stiff and wiry stems, and with little of the vigour or coarseness of the other kinds; 2½ ft. to 3 ft. high; flowering in November and December; purplish, large. Except on warm soils and in favourable situations, this plant should be trained against a low south wall. One of the latest-blooming kinds, this Daisy is well adapted for lifting and flowering in pots in the conservatory. Its large flowers, showy, supply a colour wanting in Chrysanthemums, and well-grown plants of it would group well with a collection of Chrysanthemums, scarlet *Salvias*, and the like.

**A. lævis** (*Smooth Starwort*).—A variable and elegant kind, smooth throughout, growing

about 3 ft. high. Flowers in autumn with yellow centre, in a large, close panicle; bluish lilac. Borders, naturalisation, and margins of shrubberies, in any soil.

**A. laxus** (*Loose Starwort*).—A very fine and pleasing species, with rather slender stems upwards of 3 ft. to 4 ft. high. Flowers early in autumn; pale purplish blue, about 1 in. across, in loose irregular clusters. Borders and groups, or for naturalisation in copses and shrubberies.

**A. longifolius** (*Rosy Starwort*).—A very handsome species, somewhat dwarf, producing masses of good rosy lilac flowers. It is said to vary much in a wild state, but the kind usually grown in gardens is compact in habit and not over 2 ft. high. It is an admirable border plant also fitted for beds or groups of the finer autumn hardy flowers.

**A. Novæ-Angliæ** (*New England Starwort*).—A very tall and robust perennial species, 5 ft. to 8 ft. high, with violet-purple flowers, appearing late in autumn. Among the tallest plants at the back parts of the mixed border, in warm soils and positions. It grows anywhere, but in cold soils and positions often blooms only in time to be destroyed by frosts. Naturalised in sunny sheltered positions in woods and copses, it would probably be seen to greater perfection than in a garden, and it would form a good covert. It is seldom satisfactory in a garden, and takes up much room for a late and uncertain bloom. The var. *pulchellus* is said to be the best of all the late-blooming bluish-purple kinds. It forms strong tufts from 4 ft. to 5 ft. in height, with deep blue, orange-eyed flowers, which form a dense head. There is a deep rose-coloured variety, which is of more value as a garden plant. Division.

**A. Novi-Belgii** (*New York Starwort*).—Another tall and vigorous perennial of the same character and value as the preceding, though the colour of the flower is blue. Position, soil, &c., the same as recommended for *A. Novæ-Angliæ*.

**A. ptarmicoides**.—A very distinct species, growing about 15 in. high, and bearing a profusion of rather small pure white flowers, similar to those of *Achillea Ptarmica*. It flowers a fortnight or so before the majority of the other kinds.

**A. pyrenæus** (*Pyrenean Starwort*).—A large, stout, handsome, and early autumn-flowering kind, 2 ft. to 3 ft. high, with large, lilac blue flowers, with yellow disc. A Pyrenean plant, remarkable for its blooming earlier than the finer American kinds; it may therefore have a peculiar value in some cases. Borders, fringes of shrubberies, and naturalisation on banks, copses, &c., in any soil.

**A. Shorti** (*Short's Starwort*).—A very pretty species, with a slender, spreading, nearly smooth stem, 2 ft. to 4 ft. high. Flowers in autumn; purplish-blue, about 1 in. across, numerous, in long panicles. Borders and groups of late flowering perennials.

**A. turbinellus** (*Mauve Starwort*).—A free showy kind, 2 ft. to 3 ft. high. Flowers late in summer and in autumn; delicate mauve, produced in panicles. Borders, with groups of handsomer autumn-flowering perennials, and naturalisation. Grows freely anywhere, but is worthy of good soil.

**A. versicolor** (*Changing Starwort*).—A compact growing species, sometimes confused with *A. discolor*, though as garden plants at least they are different. Flowers in summer; showy, white at first, changing into pink or purple. Said to have been found in North America, but not recorded by recent American botanists. Borders in sandy loam, or beds of the finer perennials.



No. 516. SATURDAY, OCT. 8, 1887 Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—Shakespeare.

### SINGLE COMBINATIONS FOR COTTAGE GARDENS.

In the early months of the year, when gardens were laden with the delicious smell of the Wallflower, nothing that I saw was anything near so pretty as a bed of good dark Wallflowers dotted with plants of the common Honesty—the silk plant of our grandmothers. One of the simplest and most beautiful combinations of the summer, all the grand geometrical and mosaic gardening notwithstanding, was a simple border of Virginian Stock and Sweet William. The Sweet William, which was a first-rate strain, had been planted at intervals of about 1½ ft. apart, and the annuals sown broadcast amongst it. Nothing could be finer. A day or two ago the writer saw in the "town of Quakers" a cottage front covered with masses of creepers in the most charming manner imaginable. On one side of a window was a mass of Ivy, from which hung graceful festoons of Clematis Jackmani. On the other side of the window a plant of Virginian Creeper lit up the scenery with its glorious autumnal tints. Above all this, at the top of the house, rambléd a white Jessamine. All these plants seemed to be well cared for, but nowhere could one trace anything like formality; every plant seemed to luxuriate and flourish without overstepping the grounds of proper restraint. A narrow border in the front of the cottage was filled with Ferns and Japanese Anemones.

OLD MORTALITY.

### THREE BEAUTIFUL CALCEOLARIAS.

THE bedding Calceolaria has held such sway in gardens that other kinds are seldom seen or even heard of except it be in botanical collections; yet some few of them are as desirable plants as one could wish to possess, particularly those that are most attractive at this season when the most should be made of every plant in flower. In Mr. Joad's richly-stored garden at Oakfield, Wimbledon Park, three species of Calceolaria are now in great beauty. They are *C. Pavoni*, a large and robust growing plant with ample wrinkled foliage and a profusion of large pale yellow flowers; *C. fuchsifolia*, smaller in growth, and with deep green foliage, in size and shape so strikingly resembling a *Fuchsia* as to be easily mistaken for one when not in flower; and *C. bicolor*, a beautiful species with large clusters of yellow and white flowers. *C. Pavoni* succeeds best in the open air planted against a wall, where it grows some 4 ft. high and forms an extremely handsome bush. In this position it thrives better than under glass, and all that is necessary is either to lift the plant at the beginning of winter or protect the roots in some manner. The other two are flowering profusely in cool houses both planted out in good free soil. *C. bicolor* is the most remarkable plant in the garden, being literally covered for 4 ft. or 5 ft. with its showy yellow and white blossoms. It is trained to the rafter of the house, a mode of treatment to which the slender habit of the plant readily adapts itself. These Calceolarias have been in flower more or less profusely since midsummer, and will continue in blossom till far into winter. Such beautiful and useful plants as these are certainly ought to be better known, and if known and cultivated as they should be, no doubt steps would be taken with a view of improving them and so render them even more valuable. Already Mr. Burbidge, of the Dublin College Garden, has turned his attention to them, and has raised an interesting and beautiful hybrid between *C. fuchsifolia* and *C. Pavoni*, known in commerce as *C.*

*Burbidgei*. It combines in a striking manner the peculiar characteristics of its parents, borrowing from one the fine vigorous growth and large flowers, and from the other a brighter colour and the neater habit and peculiarity of foliage.—W. G.

### EXCHANGING DUPLICATE PLANTS.

I AM glad to see THE GARDEN alphabetical catalogue of hardy perennial and alpine plants, &c., advertised at half its former price, viz., for sixpence. It will be found most useful by every amateur who wishes in the first place to have a complete catalogue of the plants he possesses, and in the next a handy list which he can enclose to a brother florist for the purpose of mutual interchange of duplicates. This catalogue can be marked by a tick to each plant you possess, and a second mark to indicate those you possess in quantity. On forwarding this marked list to a brother florist, he is at once enabled to see what you have and what you lack, and by comparing your list with his an exchange of plants to mutual advantage is thus readily arrived at. This is a very pleasant way of increasing your collection, besides being a cheaper and much more satisfactory plan than buying all your plants from the florists. It is now pretty widely known that there is a private list of amateurs in circulation, with the addresses of those who cultivate hardy flowers, and this forms a basis for further correspondence. The exchange of duplicates would be greatly facilitated if all florists used a similar list, and I believe THE GARDEN catalogue is the handiest and best for the purpose.

WM. BROCKBANK.

Brockhurst, Didsbury.

[By interleafing the catalogue additions may be easily made.]

### FOSTER'S SEEDLING GRAPE.

WITH the exception of Muscats, this is one of the best white Grapes in cultivation, all points considered, and one which every one who has a house in which to grow Grapes ought to plant along with the Black Hamburgh, as the two succeed well together. Foster's Seedling is mostly looked upon as an early Grape, and so it is; it takes about the same time as the Black Hamburgh to finish its crop, but few people think that it will hang as long as it will do. I send a portion of a bunch for your inspection. It is from a Vinery, the crop in which was ready to cut in the end of June. We began cutting about that time, and we cut the last two bunches on October 4; also one of the Black Hamburgh. The Foster's Seedling is from a rod grafted on a Muscat Hamburgh in the spring of 1878, the stock then being over twenty years old. The first season it ran to the top of the house. I left 12 ft. of rod and it broke at every eye, and showed two and three bunches on a shoot. We left a good crop on it which finished grandly. But I find to keep this Grape well it must be well ripened and a good golden colour. If this Grape kept over three months in the hottest season of the year, and in a season like the past, how long would it keep when ripened later? I see a vine was exhibited this season which is said to resemble this, but to hang longer; it must therefore be something good to surpass this in that way. The question is worth asking, Have we not got enough Grapes that have no special merit? NEMO.

[The Grapes sent were plump and good, though perhaps a little over-ripe.]

### ROOT PRUNING.

THIS term is so often misleading, that in carrying it out in its literal sense mistakes are often made. Such root pruning as that which consists in cutting a trench all round the tree and disconnecting the roots as the operation is proceeded with is seldom needed. Instead of root pruning let us say root lifting, a term which better conveys the true idea of what is wanted. When the roots are searching for nourishment in the subsoil, where there is nothing to encourage fructification, owing to their being so far away

from solar action, is the time when interference with them becomes necessary. The theory that if there is restriction as regards the branches there also ought to be the same as respects the roots is a misleading one. What is wanted is as many roots as possible, but in the right place, in order that fruit may be the result, a condition which will carry off all superfluity of root power in a better way than depriving the tree of its roots, and which will also keep up a well balanced action betwixt the roots and branches. In root lifting a trench should be taken out about 1 ft. or 18 in. from the bole of the tree, working outwards towards the tips of the roots, then begin turning over the soil round the tree, as is done in the case of trenching, lifting the roots carefully as the work proceeds, and laying them in again, their full length straight out, nearer the surface. All top-roots should be cut clean off as close as possible, and a few ashes put underneath. These tend to prevent further tap-rooting. With trees of a good size it is best to do only half round the tree one season, but in the case of young trees that are not very large they may be gone wholly round at one time. This month is the best time for the performance of such work.—A. MACKIE.

### HORTICULTURE IN MIDLOTHIAN.

ALTHOUGH Edinburgh may be said to be the centre of much horticulture, energy, and enterprise, one would hardly suspect as much from the appearance of the city itself. Classical in architecture and florid in the style of many of its buildings, it is yet, in its floral and arboricultural respect, comparatively poor. It has no flower or fruit market worth speaking of, considering its importance, and few fruit shops, except Boyd and Baynes, above the rank of a "greengrocer" in some second-rate provincial town in England. The reason is, we suppose, as one of the trade in Edinburgh assured me, that "they won't buy" in Edinburgh as they do in London and other English towns. The fruit growers in Scotland send their best examples to London, Manchester, Liverpool, Bradford, Leeds, Sheffield, and other towns. People in Edinburgh won't give the price desired. And although there are many aristocratic mansions in the capital of Scotland inhabited by very proud people, and magnificent hotels patronised by open-handed tourists, floral decorations and window gardening appear to be at a rather low ebb. It is doubtful if one member of the trade in this line could make a living in Edinburgh. There are a large number of gardens and nurseries round the city, but the Princes Street Gardens are the most noteworthy in that way in the town itself, and do credit to the management, but they have a sooty aspect, owing chiefly to their forming the main railway thoroughfare of the town. In East Princes Street Gardens all repose is completely destroyed by the ever-hurrying trains of goods and coal waggons that rattle through their very midst, or which are being shunted there continually, and forming the most prominent objects to the sight. There are at the present time several carpet beds on the slope on the old town side of the gardens, nearly in front of the Royal Bank—a noble structure, but it is rare one sees the bright bands of *Feverfew* and other plants except through a cloud of smoke and steam from the engines, and the beds generally look as if they rested on a base line of coal or goods trucks drawn up in front of them. During a period of nearly three weeks I never saw these beds under any other aspect, and the effect was incongruous in the extreme. If anyone can imagine a railway goods and coal yard in the centre of Regent's Park Gardens or South Kensington they will have a very good idea of the prospect from the terrace opposite Scott's Monument in Princes Street Gardens. The wonder is that it has never occurred to the corporation,



which has always concerned itself about the aspect of the city it has so much reason to be proud of, to cover the railways out of sight, which could be easily done, owing to the configuration of the ground, and devote the whole space to the garden, thus removing the greatest eyesore of the fine prospect between the new and the old town, one of the most interesting views in Edinburgh. West Princes Street Gardens are a far more agreeable resort than the East Gardens, only the railway cuts them in two halves also, but there is no coal yard there and the line is better hid by an embankment planted with trees. Here, too, the facilities for tunnelling the railway over are even more favourable, as the ground slopes quickly down to the rails on both sides and could easily be bridged over. Such a state of things would not be tolerated in a public garden in London or Paris. The best feature of both East and West Princes Street Gardens is the Grass, which is rich and green and well cared for, and there is plenty of it. Very little formal gardening is attempted, the beds being mostly filled with shrubs and hardy plants, but the latter might be more varied and select. Carpet patterns have been laid out round the trunks of some of the larger trees, but with such miserable results as not to encourage further attempts of this kind. In some of the most notable examples nearly all the plants but the yellow Feverfew were quite dead—killed by the shade and drip, such subjects as succulents, &c., never being intended to grow in such situations. For some reason or other trees and shrubs, excepting Hollies, Aucubas, Lilacs, Planes, Elms, and Thorns do not appear to grow here. Probably the smoke from the steam engines has a good deal to do with it, for the smoke of the town is not greater than in some parts of London where vegetation thrives better. On the slope next to Princes Street there is a very good example of an Ivy-clad bank some hundred yards in length and deep. It is regularly carpeted with Ivy throughout, with here and there sheets of Snapdragons and Wallflowers, &c., growing up through it and flowering profusely. Wallflowers in flower in September and October are not common, but here they are abundant and pretty. Ivy is said not to be a good town plant, but in Edinburgh it does well.

The necessarily more formal gardens laid out on the roof of the Waverley Market is a great improvement on the former state of things there, and the beds are nicely furnished and well kept. The keeping is indeed the best feature of all the gardens along Princes Street. The freshest looking bed on the Waverley Market was, however, a Grass one, and the only one of the kind in the garden, if we remember correctly, suggesting a further extension of the turf which thrives so well.

Perhaps the most singular garden in Edinburgh, or anywhere else, is that in St. Andrew's Square, which no gardener should come away without seeing. Notwithstanding the numerous able and learned horticultural bodies and associations in and about Edinburgh, and horticultural critics which are constantly going and coming, no one, so far as we are aware has ever noticed this garden, and hence it has gone on in the even tenor of its way, just as if there was no garden but itself in the world, or, at all events, as if those who are responsible for its management had never seen any other. St. Andrew's is a noble square as regards its buildings, extent, and spaciousness, a veritable Place de la Concorde, in fact, but the remarkable feature of its gardens is its trees and shrubs. With the exception of a few Elms, &c., these consist exclusively of Aucubas and Hollies—the common variety of the latter chiefly, and all the Hollies without excep-

tion are closely shorn by the shears. No particular design has been followed, either in the arrangement of the trees or the shearing of them. They all stand higgledy-piggledy—short ones and tall ones all mixed up indiscriminately, and they have only been shorn into smooth outline according to the shape they were at the beginning. The effect is striking in its way. When looked at from any of the hotel windows of the square, each clump looks just like a collection of gigantic green molehills and Toadstools, and just about as ornamental. A more monstrous prospect in the shape of a garden no one ever looked upon, we imagine. We failed to learn what motive prompted such close and persistent use of the shears; but it was manifest that those in charge could be occupied at little else but the shearing business. There are a large number of Hollies, and not one could be seen that had not been operated upon, from 2 ft. high up to 20 ft., or thereabout. W.

## NOTES OF THE WEEK.

**Pinguicula caudata.**—This beautiful new Butterwort which we figured a short time since is again attractively in flower, and is even finer than when our drawing was made. One remarkable peculiarity about it is that it appears to have two distinct flowering seasons—in spring and autumn. At both these periods the foliage is quite of a different character; in spring the leaves are short, thick, fleshy, and incurved, forming a globose rosette; in summer and throughout the autumn till winter they are broad, somewhat flat, and lie on the surface of the soil in which the plant grows. The flowers of the Kew plant are larger than those produced in spring and of a deeper shade of violet-purple. This beautiful Butterwort may be compared with the lovely *Masdevallia Lindenii* or *Harr yana*, which it strongly resembles, and being floriferous and lasting in perfection as long a time is equally desirable, and, moreover, it can be successfully grown under the same treatment as the *Masdevallias*.

**Oxalis luteola.**—This is a veritable little gem, and though one of an exceptionally numerous genus, is quite distinct from any even in a botanical sense, and abundantly so from a garden standpoint. It is dwarf in growth, the foliage growing in a dense deep green tuft, and the blossoms, large for the size of the plant, are like cups of white and gold. As to its hardiness, we have had no experience, but it is now beautifully in flower in the open borders at the Hale Farm Nurseries, Tottenham. Mr. Ware, we believe, introduced it a few years ago, and, if not new, it is very rare so far as we are able to judge. It is a pretty plant, and one that everyone fond of plants of alpine growth would desire to possess.

**Lasiandra macrantha** planted out.—The advantage of planting out in borders of good soil such stove and greenhouse plants as are most commonly grown in pots is exemplified in a striking manner in Mr. Joad's garden at Wimbledon. In one of his large span-roofed houses this beautiful *Melastomad* forms a large symmetrically spreading bush, and is now covered with lovely rich purple flowers, some 3 in. or 4 in. across. The luxuriance of the foliage and the plant altogether indicates that such a mode of treatment suits it better than being cramped in a pot, and the plants possess a finer appearance when grown in such a manner.

**Double Pyrethrums** are very fine now from plants divided in April last and transferred to the open ground from pots in June. As autumn-flowering border plants they have few rivals, there being great variety of colour amongst them, and abundance of bloom. We have had blooms of them for quite four months, and even this length of time might easily by a little ingenuity be extended to six months.—J. JENKINS, *Chad Valley Nurseries, Birmingham.*

**New Holland Daisy.**—*Vittadenia australis* is now called *Erigeron mucronatum*; it is a dwarf, bushy plant which flowers long through the summer and autumn too. It is hardy enough on sandy soils, and comes to us from Highclere full of flowers.

**Cassia Sophora.**—One of the showiest of climbing plants at Kew in flower is this yellow flowered shrub, a large plant of which is trained to the roof of the conservatory (No. 4). It bears its flowers in loose clusters, which hang gracefully on slender twigs. It is a plant well worth cultivating in the greenhouse, as it flowers at a season when all kinds of bloom are acceptable.

**Rivina flava.**—The red-berried species of *Rivina* (*R. humilis* and *tinctoria*) are now tolerably well known and cultivated, but not so *R. flava*, which has yellow berries and quite as attractive as either of the others, and moreover appears to have a tendency to bear fruit in greater profusion. In one of the stoves at Kew some plants of this species are truly ornamental.

**Aralia spinosa** in Kensington Gardens.—We have noticed with pleasure during the past few weeks a specimen of this handsome shrub in flower in the gardens at Kensington Palace. The ample glossy leaves and form of flowers shown by the plant make it a very noble ornament of the autumnal garden. As Mr. Gibson says, it is one of the best hardy things we have in fine-leaved plants, and very little grown.

**Androsace lanuginosa.**—This is the most persistent flowerer of the whole family in cultivation. Even now we observe at Kew that some plants still bear neat little heads of *Verbena*-like flowers. Now that the rock garden is well nigh bare of bloom, it is well to give special care to those plants that flower well in autumn, and this little Himalayan *Androsace* is one of those that would well repay attention.

**Helianthus giganteus.**—This is the noblest of the many perennial Composites in flower at Kew. Like the rest of the genus, it has yellow flowers, but being borne aloft on stems 8 ft. to 10 ft. high, the plant may be readily distinguished from its congeners. Among a large number of species where there is such a strong family likeness throughout the whole number, it is well to have the most distinct, and this species should be in the selection.

**Hæmanthus coccineus.**—With new plants constantly engaging attention cultivators are apt to neglect such as are old and well tried. Here is a case in point. One of the oldest of our Cape bulbous plants, beautiful and attractive in every way, is seldom seen or heard of, its place being taken by much inferior plants. At Kew in one of the cool houses there is a grand specimen of it bearing a dozen or so of its short flower-stems terminated by a dense head of bright red flowers. It is one of the easiest plants to grow.

**Justicia carnea.**—This welcome autumn-flowering stove plant is now valuable in enlivening the stages in the Palm house and other stoves at Kew, where it is distinguished by various names, both generic and specific, but under the above name no doubt it will always be known in gardens generally. There are several varieties represented in the Kew collection, one called *magnifica* being particularly fine. No garden with a stove house should be without such a beautiful plant as this, as it is easily managed and never disappoints.

**Cratægus Lælandi.**—This is one of the evergreen Thorns, a variety of the Fire Thorn (*C. Pyracantha*), but much superior in many respects even to such a fine shrub as that. It is neater in growth, has larger and more effective berries, and, what is most valuable of all, it berries freely in a small state. This character is well exemplified in Messrs. Veitch's nursery at Coombe Wood, where there are large breadths of both kinds side by side. The *Pyracantha* has no berries, while *Lælandi* is furnished with many bright clusters on plants only about a foot high. Such a desirable shrub will be found valuable not only for walls



like the other, but for planting with other dwarf evergreen shrubs, which is now happily becoming much practised.

**The finest St. John's Worts** that flower in autumn are *Hypericum oblongifolium* and *patulum*, two handsome shrubs that merit a place in every garden. The first is the showiest, as the flowers are larger, more cup-shaped, and of a richer tone of golden yellow, but *patulum* is a more profuse flowerer, which in a great measure compensates for the size of the blooms. It grows from 1 ft. to 1½ ft. high, while *oblongifolium* grows 3 ft. or more in height. They are both hardy, are excellent for cutting, and thrive in any common soil.

**Dietes bicolor.**—Every one must feel satisfied with the beauty of this Cape Iridaceous plant, when we see it so finely in flower as it now is in the temperate house at Kew, flourishing with little or no trouble taken with it. A plant of it planted out in the border in a light spot has been flowering more or less continuously throughout the summer, and now it is still in that condition. The flowers are extremely handsome, being some 4 in. across, pure white, with a fine marking of violet-purple, and spots of bright yellow. Their only fault is that they are rather fugitive, but their profusion amply compensates for that.

**Zauschneria californica.**—In some of the gardens and nurseries about London this showy Californian plant is now highly attractive. At Mr. Joad's, Wimbledon Park, it has so persistently attained a foothold in the rock garden as to become almost a troublesome weed, for it sends out its underground stems widely in all directions, and so the plant soon forms a spreading mass. The bright vermilion flowers have an extremely fine effect in the rock garden at this season, and everywhere in the south and more favoured counties where it would be quite hardy it should be encouraged. It may be propagated freely in spring and autumn by detaching the semi-rooted branches.

**Clematis Flammula and Traveller's Joy.**—One of the most beautiful combinations we ever remember seeing of these two twining Clematises is that on the porch of the gardener's cottage at Grasmere, Byfleet. Mr. Stevens intentionally planted the two near each other so that they might intertwine. The happiest result was thus effected, for while the Traveller's Joy is laden with its tufts of feathery seeds, the Flammula is flowering profusely with its pure white flowers, and this effect continues till late in autumn. No doubt *C. viticella*, *montana*, and others would thrive together in a similar manner and produce a beautiful picture.

**Cup flower** (*Scypanthus elegans*).—This is a beautiful half-hardy climbing annual from Chili, valuable for trailing over a trellis or against a wall. It is a slender plant with forked stems, from 5 ft. to 8 ft. high. The leaves are deeply cut, which enhances the graceful appearance of the plant. The flowers produced singly in the forks of the branches are cup-like in shape, and of a bright golden yellow, with fine red spots inside. It blooms profusely from August till October, and is easily cultivated in rich light soil, treated as a half-hardy annual. It is now an object of striking beauty in Mr. Joad's garden at Oakfield, Wimbledon Park.

**Gazania pinnata integrifolia.**—Under this name there is in flower on the rockery at Kew a plant quite distinct from the better known *G. rigens*, and as pretty. The leaves are long and narrow, and form a symmetrical tuft. The upper surface of the leaf is a shining deep green, the under silvery. The flowers are about 1½ in. across, and bright yellow.

**Cratægus Crus-galli var. ovalifolia.**—This is now a striking object at Kew, where several fine specimens may be seen in all the glorious colours of autumn's painting. In the distance the richly marked leaves might easily be mistaken for flowers. Yellow and red, and almost every shade of these colours have taken the place of the bright

green of the leaves on the upper part of the tree, and these, with the lower green ground, combine to produce a brilliant picture most telling in effect when surrounded by the green of taller trees. The large bunches of red berries, too, of this species add not a little to its beauty.—B.

**Musa Ensete in Hyde Park.**—We were surprised at the vigour and freshness of a number of young plants of this in Hyde Park on the first day of October. It is certainly beyond all other plants in giving a distinct tropical aspect in gardens in the southern counties, where it may be grown well.

**The Great Bed of sub-tropical plants,** edged by Siebold's Plantain Lily, to which we before called attention as the finest in the parks this year, was, if possible, more picturesque-looking during the past week than in the summer. The Musa and Palms in the centre were quite fresh, bold and novel in habit, in the first week in October.

**Singular Dahlia sport.**—Messrs. Hender send us from Plymouth a bloom of a double Dahlia in which all the florets have two or more minor florets within them, which give the bloom a singular appearance, though it is not so apparent at first sight.

**Calliopsis tinctoria.**—One of the brightest flowers of autumn is this old annual, and well worthy of careful culture.

#### FEMALE LABOUR IN GARDENS.

MR. T. SMITH's remarks under this head (p. 339) will doubtless be read with interest by many. We know that in the work of arranging flowers, propagating, &c., female labour would be useful, and we have even evidence of what may be done in a garden wholly under the direction of women; female labour, too, may be utilised to a large extent in market gardens. In Kent the gathering of fruit is mostly done by women. Beginning with green Gooseberries, they follow on with Currants, Raspberries, Strawberries, and other small fruits until the end of the season. Many are now employed picking Filberts and Cob Nuts, and in some parts of Kent women even gather Cherries, Damsons, and other fruits that require long ladders to reach them. Hop-tying, picking, &c., another industry generally associated with fruit farming, affords employment for women, and if they can satisfactorily perform such work as that just described, there can be no question as to the feasibility of women being employed profitably in many of the lighter branches of gardening in private places. But in advocating female labour we are met with the rejoinder that there is not work enough for the men. This in one sense is true, for the land is in many parts slowly but surely going back to its primitive condition. There will be, however, room enough and work enough for all as soon as the shackles that fetter land are removed, and in growing fruits and vegetables for market there is a wide field open for our improvement before we can lay any claim to excellence. J. G.

Linton.

#### SOILS FOR ALPINE PLANTS.

IN THE GARDEN (p. 341) I notice a paragraph on this subject. My experience of alpenes and the soils best suited to them is that nine-tenths of them will succeed in any ordinary well-drained soil which is composed of loam of ordinary character, leaf mould, and sand. Some suppose that rock plants will only grow on rockeries, but this is a mistake, and one which debar many from making an attempt to cultivate them. I have grown alpenes successfully in an ordinary bed 4 ft. wide and 40 ft. long, the occupants being such plants as *Omphalodes Lucilia*, *Onosma taurica* and *O. echinoides*, *Pinguicula*, *Saxifraga Burseriana*, *S. juniperifolia*, *Saponaria cespitosa*, *Dryas*, *Daphne rupestris*, various *Primulas*, *Hutchinsia alpina* and *H. brevicaulis*, *Dianthus alpinus*, *D. Fischeri*, *D. neglectus*, and others; therefore I think such a catalogue as that to which Mr. Whitehead alludes much too complicated, and that a catalogue simplifying matters would render greater service. When people become alive to the fact that choice alpenes will thrive in the front row of a border and under conditions similar to those under which ordinary bedding plants will succeed,

the demand for them will increase; but if we insist on having a rockery for them and various mixtures of soils, many will gravely shake their heads and relinquish the attempt. In the list quoted (p. 341) *Drosera* is put down as needing retentive or clay soil, but I wonder how many grow it in that material. Our native Sundew is generally located in damp and shade in *Sphagnum Moss*. A mixture which I find to answer well, and to which the plants take most readily, is old potting soil which has been laid by for a year, having been turned over once or twice to sweeten. This I use largely for potting and making up beds, and with good results. I also use occasionally the ashes from burnt rubbish, kept dry, and sown thickly on the surface previous to planting; this helps to keep off the slugs. E. JENKINS.

#### EDITOR'S TABLE.

**SCARBOROUGH LILY IN THE FLOWER GARDEN.**—One of the handsomest and brightest trusses of this that we have seen comes from Eastcott, near Pinner, with the following note from Mr. Kingsmill. "Why," he asks, "is not the Scarborough Lily (*Vallota purpurea*) more used in gardens than it is? It is one of the half-hardy things that does much better planted out than in pots. I speak from experience, having tried it for years. The spike sent will show that the colour of the flowers is much brighter, and the leaves darker than those of plants under glass, while the growth is altogether stronger. This morning there were over fifty flowers out. After the first sharp frost a few degrees does not even injure the flowers; the bulbs are taken up, packed closely in a box, and kept fairly dry and free from frost through the winter. We plant them out about the middle of May." Certainly there could be few more welcome sights than a group of this bright plant on a lawn. We are sure many will follow our correspondent in this excellent plan.

**VITIS HETEROPHYLLA.**—Long and fragile shoots of this most graceful and charmingly dotted and variegated Vine come to us from Bitton, where it seems to grow more freely than in the London district. Killed down every year, it comes up as a herbaceous plant, and is a singularly beautiful Vine for banks or rock gardens or raised borders. It would be pretty, too, trailing among or over dwarf shrubs.

**EUONYMUS [LATIFOLIUS].**—Bright bunches of this from Mr. Ellacombe, who praises it for the fine colour of its fruit, looked at in almost any light or aspect on the tree. On the table it is no less attractive, and the berries and leaves last well. Mr. William Paul has also lately called our attention to the value of this tree, and we hope soon to publish a life-size engraving of it. Although not a new thing, it is one the acquaintance of which many people have yet to make.

**DRUMMOND'S PHLOX.**—One of the handsomest things we have seen for a long time is the variety of this Phlox called Victoria, deep, splendid crimson-scarlet. This came to us from Highclere on October 4, fresh and full of bloom as a spring flower. It must be very fine where properly used. It suggests what we ought to do in a great many cases where plants vary much; instead of going in so much for variegated and spotted sorts, which give a dingy or indefinite effect, it would be well to select fine self-coloured races like this. The colours of the finer *Pelargoniums* at this time of year in the open air are dull, indeed, compared to this. Like other forms of the same old annual, it has peculiar merit for the decoration of flower gardens in autumn.



**THE SPINDLE TREE.**—This comes to us as well-laden bunches from Highclere; and really fine as the larger species is, one cannot say too much for the British one when full of fruit. We have noticed the foliage of this tree takes on the most splendid colour in certain situations, and hope it is generally so.

**THORN BERRIES.**—How handsome the berries of the various kinds of Thorn are now! They are among the trees that go to make the autumn garden so full of fine colour, that is to say, where there is a tree garden as rich as one could wish.

**HYDRANGEA PANICULATA GRANDIFLORA.**—This noble shrub seems to do everywhere, and now comes to us from Highclere, where on the hills it flowers a little later than about London. It lasts a long time in bloom. Some degree of careful culture and thinning of the shoots of old plants would be necessary with this if we wish to keep up the supply of fine large spikes of flowers.

**CEANOTHUS GLOIRE DE VERSAILLES.**—Lovely bunches of this from Highclere. It is like a refined Lilac at first sight. We can give no idea of the delicate colour. A good bush of it affords no end of flowers for cutting. It is a precious bush for a wall.

**TROPÆOLUM TUBEROSUM.**—The flowers of this where it blooms well add a novel charm to the autumn garden, its colour is so fine and deep. Specimens come to us from Mr. Kingsmill, who succeeds remarkably well with it. We believe it is grown extensively in Messrs. Sutton's nursery at Reading.

**THE WHITE CHIMNEY CAMPANULA.**—A lovely pure white star-like flower with the blooms 2 in. across. It is the white form of *Campanula pyramidalis*, and well grown one of the grand plants of autumn. One ought to see it oftener in a mixed border worthy of the name. Pyramids of this and the blue form 6 ft. high are things worth seeing. It is, considering the fine form, strong plants, and the length of the blooming period the most valuable of the *Campanulas*, particularly to those who know how to place it happily. From Mr. Ross.

**GUELDER ROSE LEAVES.**—Among a variety of the leaves of trees that colour in the autumn sent us from Highclere, the very finest, richest, and most varied thing is the Guelder Rose. It has often struck us that the colour of trees in America and the colour in England is not so very different after all. It is a question of the predominance of certain types remarkable for their high colour, and it is quite possible in this country by making a careful selection and by having enough of each effective kind grouped or otherwise to let us see more of this strange leaf glory of the autumn. Of course the common shrubbery "dotting" of fine things, as starved single specimens, does a good deal to prevent us seeing the beauty of the foliage of trees and shrubs.

**THE VIOLET PRIMROSE IN OCTOBER.**—A batch of a dozen heads of the lovely rich violet Himalayan Primrose (*Primula capitata*), which we think by far the most precious gain in Primroses of the past dozen years. Apart from the rich and singular beauty of colour, it flowers long in summer after most of the Primroses are past, and now we have proof that it flowers abundantly in autumn. It has, in bunches, the most delicate odour of lilac. The colour is so deep and rich a violet that we think the

English name Violet Primrose may be fittingly given to it. It comes to us from Messrs. Dicksons and Co., Waterloo Place, Edinburgh, who say the flowers are gathered from "a batch of 1000 plants, which have been flowering for nearly three months, and are still very beautiful out-of-doors, and likely to continue should the weather permit. Why should this not be better known and more extensively cultivated?" Why, indeed! We should say if many of our readers could see so fine a plant, and obtain good plants of it at a moderate price, they would be glad to secure it.

**FROM GLASNEVIN** Mr. Moore sends us a welcome box of autumn flowers, among them some beautiful ones. The true pure white Garland Flower (*Hedychium coronarium*) with fragrant blossoms is equal to a good white Orchid, and by the way the single blossoms are not at all unlike those of some of the larger *Odontoglossums*. Mr. Moore says of it, "*Hedychium coronarium* is a grand plant clothed with elegant green leaves from the top of the tall stems to the pot, each stem being terminated by a cluster of pure white deliciously fragrant blossoms. As soon as they fade others spring from the base of the bracts beside them, and so it continues for about a month, scenting the whole house. It requires warm treatment."

**CASSIA AS A PILLAR PLANT.**—Another beautiful plant is *Cassia Sophora*, known at Glasnevin as *Chame fistula lævigata*. It has loose clusters of golden yellow blossoms and abundant rich green leaves. Of it Mr. Moore speaks highly. It is in flower all the year round. If trained against a wall or pillar and frequently cut back it produces during the twelve months a profusion of its clear yellow flowers.

**ABUTILON VEXILLARIUM.**—Mr. Moore says: "It is quite hardy against a wall where it has stood for several years." The sprays sent are beautiful, and show well what a good climate Glasnevin has for plants that unfortunately are too tender for most parts of England.

**THE JAPANESE MONKSHOOD AND ZAUSCHNERIA.**—Two of the finest open-air flowers come with these; one a Japanese, the other a Californian. The former, *Aconitum japonicum*, is not only the finest of the Monkshoods, but has the good quality of flowering freely in autumn. The Californian belongs to the *Fuchsia* family; has long wreaths of brilliant vermilion flowers 1 in. long. Its name is *Zauschneria californica*, and is one of the plants that delights in the mild climate of Ireland, though in some of our more favoured localities it flourishes well. It loves best a warm or a limestone soil.

**CANARY CREEPER.**—The one faithful plant that is always good and always at home in cottage or castle gardens. It is most welcome from Highclere with many rarer things and beautiful in the cut state with its delicately pale leaves and buds opening into the autumn. Its colour goes very well near the *Ceanothus* before alluded to.

**ANEMONES FROM ST. BRIDGID.**—A surprising bunch of Anemones, all double and semi-double, on the 6th October with the following note: "I send you a bunch of Anemones grown from my own seed sown last April. When all the summer flowers are fading it is pleasing to find a whole company of bright blossoms rising from the brown earth to light and cheer us through the dark days of winter. The Anemones have been in flower with me since the commencement of September. The storm and rain damaged them so that I could not find a bouquet of per-

fect blossoms to send you until a week of fine weather had brought up fresh ones.—St. BRIDGID Hill of Howth.

**CHINESE PINKS.**—These, beautifully mottled and eyed, and deep in colour, are sent by Mr. Ross who grows them well. They are also flowers of rare beauty in autumn, and capable, tastefully placed, of doing duty that is now often given to inferior plants. A bed of them at this season with some tall autumnal flowers growing here and there through it would be very pretty, but then they are worth growing for their own sakes.

**AUTUMN CROCUSES.**—The day seems coming when the autumn will have many of the charms of spring. Among these may be counted the autumn Crocuses, some of which came from Mr. Kingsmill. There are quite a number of species which bloom in the autumn, and no doubt the rarest of them will soon be obtainable for our gardens. Fittingly placed, they will be lovely. Mr. Maw is working hard at his noble monograph of the genus, which will be beautifully illustrated. Its publication will put the history of this long neglected and, to garden lovers, obscure genus on a satisfactory footing.

As the long nights come quickly upon us, and the autumn rains beat down, no plants make so brave a fight as the very numerous host known under the head of alpine and rock plants, many of which, like the mossy Saxifrage, assume their deepest and richest verdure about this season. Our native Primroses seem inclined to keep them company this year, and we are charmed with a bunch of the common, and various coloured, and white Primroses, sitting cosily in their own soft green leaves from Mr. George Muirhead, near Berwick. It is only a few months since we had rich bunches of them from Bedfordshire and from Mr. Brockbank. If we consider the long time during which these plants bloom, we cannot begrudge them any attention we can give them in the way of culture or favourable places to grow in. Mr. Muirhead also sends *Auriculas*, but these do not seem to like the October day, and are not so pretty as the Primroses, not having their full natural colours. The double Daisies, however, like the Primroses, are good, and so are the rock Roses, and the little red-spined *Acæna*, and the *Cyclamens*.

**A BEAUTIFUL WREATH** of white flowers is that of the white *Lapageria*, which comes to us from the Chad Valley Nurseries at Birmingham. Nothing can give an idea of its grace, except a wreath of Snowdrops, and that is far away from being typical of it. Has it been tried in the open air yet? and if so, does it make as good a struggle as the red form does in the southern counties here and there?

**October flowers.**—I send you a small box containing some of my latest and earliest alpine &c., also a bunch of *Victoria Regina* Violets, which I gathered here this morning from the open ground I had the Violets in fine bunches all last winter and spring, except during the very severe frost, by transplanting prepared plants into a cold frame in the usual way in the month of September. The *Cyclamen hederifolium* is very beautiful on my rock border at present. Its leaves are just coming up above the ground. *Acæna microphylla* is a very peculiar looking and interesting plant. Its spines cover about a square foot or more of the rock border. We have had dreadful harvest weather here. The corn in many cases is sprouting in the sheaves, and very little is yet in the stackyard, but the small rock flowers enjoy it.—G. M., *Berwickshire*.



## TREES AND SHRUBS.

## THE PLANE TREES.

THE Plane tree (*Platanus*), according to authors learned in the classics, is derived from a Greek word meaning broad, doubtless in allusion to the wide spreading habit of the branches, and the diffusive shade made by the tree when in full leaf. The genus is a small one, only two distinct species being known in Britain, viz., the Eastern Plane (*Platanus orientalis*) and the Western Plane (*Platanus occidentalis*). The Oriental Plane is undoubtedly indigenous to Persia, and is said by some authorities to be also a native of Southern Europe. It is, however, generally supposed to have been originally introduced into Greece and other parts of the Levant, &c., from Western Asia. There is no record of it occupying any extensive tracts of land; on the contrary, it is found growing in small groups or singly, and mostly in alluvial plains. In such positions it is recorded to have acquired gigantic dimensions. It appears to have been held in the highest esteem from a very early period on account of the ample and refreshing shade which its massive head afforded to the natives of sunny climes. It is true no tree gives a more delightful shade in summer; nor, on the other hand, admits the sun's rays more freely among its boughs in winter. We have records from old writers that enormous Plane trees gladdened the eyes of the ancients, and who seem to have almost worshipped them. It is written that one gigantic specimen so delighted Xerxes when he invaded Greece that he encircled it with a collar of gold, and covered it with gems, necklaces, scarfs, bracelets, and other riches, and spent some days beneath its shade, a circumstance which is said to have contributed to the subsequent defeat of the mighty armament of the Persian king. When he was forced to part from the tree he caused a figure of it to be stamped on a medal of gold which he continually wore about him. Another colossal tree in Arcadia remarkable for its great beauty and ample shade was supposed to be 1300 years old when seen by Pausanias. This tree is said to have been planted by the husband of Helen. The famous Lician Plane had a room in it of 81 ft. in compass, and was so glorious a tree that the governor of that province used to feast his whole retinue in it. The celebrated Plane at

Buyukdère, in Turkey, was said to be more than 2000 years old when measured in 1831; it was then 141 ft. in girth at the base, and its head covered 130 ft. in diameter. There is some doubt, however, whether this tree should be considered a single tree, as it had sprung from a decayed stool, and had united several stems in one at the base. The enormous Plane known to travellers in Albania growing on the banks of the Selinus, near Nostizza, the butt of which is reported to have

is supposed to have been due to Lord Bacon, who planted the first specimens at Verulam.

## The Oriental Plane.

(P. ORIENTALIS.)

The characteristic features which distinguish the Oriental Plane (*Platanus orientalis*) from all others are long palmate leaves deeply cut into five distinct narrow lobes, and on the edges of these segments are many small indentations; the leaves are wedge-shaped at the base

and vary in size from 8 in. to 9 in. long by from 7 in. to 8 in. broad. The upper sides are deep green, smooth, and glossy, while the undersides are paler and less shining. The leaf-stalks are reddish brown, from 1 in. to 2 in. long. The catkins or balls which contain the seed are about the size of a Cherry, and hang downwards on long string-like foot-stalks, varying in number from two to five. The spray or twigs are of a brownish colour, short-jointed, crooked, and form slight angles as each length from bud to bud is formed, which zigzag habit of growth is retained more or less throughout all the branches; the form of the head is massive and on the top somewhat flat; the lower branches are wide spreading with a strong tendency in their extremities to gracefully droop down to the ground; the broad, heavily laden head is, however, agreeably broken in its outline by many fissured indentations caused by the crooked and angular course which its branches take; the deeply cut leaves and pointed lobes, too, give a wavy appearance to the top. The leaves are also arranged in a somewhat horizontal manner along the spray, which admits of sunlight and shade to play amongst them; the foliage is easily moved and turned by a slight current of wind so as to display the pale, green of the undersides, lighting up the trees as it were and making a



THE ORIENTAL PLANE AT HIGHCLERE.  
(From a sketch by Alfred Parsons, 1880.)

girthed 45 ft., was 100 ft. high. The Plane tree in Persia is called the Chinar, and travellers remark that no tree gladdens the landscape except the tall Poplar (Lombardy Poplar) or the stately Chinar. It has been cultivated there from a very early date, and even to the present day it is planted in their gardens for the pleasant shade which it affords and to form avenue and shaded walks. In Greece, too, the academic groves, the neighbourhood of public schools, and all those favourite avenues to which men were accustomed to resort were planted with these trees.

**Introduction into England.**—The introduction of the Oriental Plane into this country

lively contrast with the dark green of the upper sides. The bark of the branches has a warm, cheerful, russety colour, contrasting charmingly with the bright green foliage, and in winter when bare of leaves gives the tree a bright, refreshing, and pleasing appearance. The stem is naturally short and bulky, with a decided tendency to expand rather than elongate.

The timber is short, close, and fine in the grain; it is somewhat similar in character to that of the Beech and Sycamore, perishing quickly when exposed to the weather, and is, in consequence, only fit for indoor use, such as



chair-making and other cabinet work, but it is so close in texture that much care is required when polished to get its remarkably smooth surface to take in the varnish. A pretty "shingle," or honeycomb-like pattern is found running through some parts of the butt, chiefly when cut through the medullary rays; these pieces when worked up into the backs and arms of chairs look very handsome; indeed, the wood of the Plane makes beautiful office or hall chairs and tables, the brownish-yellow oak colour when polished looking well for such a purpose. As a timber tree of commerce, however, it will never probably be considered valuable in this country, but as a superior ornamental one for the decoration of parks, pleasure grounds, town, and suburban streets and squares, it ought to be planted more extensively than it has hitherto been.

**Fine specimens of Oriental Plane.**—Although introduced into England so long ago as about 340 years, there are no specimens approaching that age in this country, and even old writers do not give us records of any specimens

the ground, 25 ft. 6 in.; girth of ditto at 5 ft. up, 18 ft. 6 in.; length of stem, 11 ft. where it divides into about a dozen large spreading branches. It forms a most delightful shade-giving tree, the far-extended lower branches hanging gracefully down to the lawn. When I measured this tree in 1875 its butt at 5 ft. above the base line girthed 18 ft., and the widest spread of branches was 95 ft. It has therefore gained in six years 5 ft. in diameter of branches and 6 in. circumference of butt, thus proving how well it is still developing in bulk of stem and expanse of branches.

The annexed sketch (p. 369) represents a promising specimen growing at Highclere, Hants; it is 75 ft. high, spread of branches 52 ft., and it girths 8 ft. 6 in. at 4 ft. up the stem. It is a healthy, flourishing tree, and is favoured by a good soil and a sheltered position. Other specimens, however, are thriving well in less favoured soils and situations, being badly exposed to cutting east winds, thus showing that in our southern and western counties, at least, a sheltered site is not necessarily essential to the growth of the

alternations of forcing sunshine during the day and keen frosty nights during the growing season late in spring.

**Propagation.**—This Plane can be propagated from seed, cuttings, and layers; the latter is the most certain method. When struck from cuttings a large percentage of them are apt to die back during unfavourable seasons. As a rule, Continental grown plants are to be preferred to those raised in this country; they are generally clean grown with good leading shoots, whereas in our English nurseries they are generally of a more bushy character. It takes a good deal of care and attention and some years before well-grown plants can be produced; doubtless this is the chief reason why the Eastern Plane has been, comparatively speaking, so seldom planted in our parks and squares. If some of our nurserymen would make a speciality of Planes, and grow and distribute a fine variety of the Eastern one, such as the Weston Park species, I have no doubt that a ready sale for really well-grown stock fit for parks, streets, and squares might be insured. It is the disappoint-



Occidental Plane (*P. occidentalis*).



Spanish Plane (*P. acerifolia hispanica*).

remarkable for large size in their day; by far the largest and finest specimen of the Oriental Plane that has come under my own observation is growing in the flower garden at Weston Park, Salop. The site on which it stands is quite open and fully exposed on every side; so hardy is it, and so well does it seem to enjoy its soil and position, that a long lease may still apparently be taken of its life, judging from its robust, healthy appearance. When I saw it, about six years ago, it showed no signs of decay whatever. Let us hope no untoward accident may befall this magnificent tree which has stood the brunt of, I should say, not less than two hundred years unscathed. This noble specimen is, I believe, a typical one of the true Eastern Plane, not a dwarfish tree of scrubby growth with small common Maple-like leaves, like many spurious and worthless varieties that have been propagated and distributed by the trade; on the contrary, its leaves are large, handsome, and strikingly palmate. The following are its measurements taken last winter: Height, 80 ft.; diameter of spread of branches, 100 ft.; girth of butt at 1 ft. above

Oriental Plane. Doubtless a damp, low-lying situation facing the south-east is the very worst position in which to plant it, especially in the less favoured parts of England, where it is almost certain to succumb when young, or at any rate suffer through its young shoots getting killed back to the stem by late spring frosts. This Plane delights in a good, rich, sandy, loamy soil and a somewhat dry and sunny position, in which its young growths get hard and ripe before it sheds its foliage. Indeed, a hot summer and dry autumn suit the Plane family best; for instance, this summer the Planes everywhere have been in luxuriant leafage and hardly ever looked so full of life and vigour. For this, no doubt, we are partly indebted to the dry autumn of last year, and partly to the past hot summer; but it is, I think, evident after the experience of last winter that the severity of the weather alone does not cripple and disfigure our Plane trees. The cause of decrepitude may safely be attributed to moist, dull autumns succeeded by late spring frosts, the previous season's wood not being sufficiently hard and ripe to withstand the

ment which planters experience when badly grown and worthless varieties are sold to them that checks the demand for such ornamental trees as the Eastern Plane. The true kind is a delightful shade-giving tree, and has hardly an equal for elegant and beautiful foliage; and as to its suitability for town planting, it is unquestionably one of the best trees that can be recommended; as a park tree planted singly, or a few in a group in front of masses or clumps of other trees, it is decidedly effective, and forms a striking contrast with park trees generally; or for forming a flank wing group of two or three at the corner or end of a mansion it would be difficult to match it, when well grown and matured, as an ornamental feature displaying a combination of beautiful summer leafage and portly grandeur in winter.

There are some seedling varieties of the Eastern Plane in the trade—some named, others known only as orientalis. The variety called *P. o. cuneata* is a shrubby, stunted grower, and not worth cultivating. Other varieties, similar to it, with smaller leaves than the species, are mostly inferior kinds, and should not be propa-



gated. On the Continent the Eastern Plane is propagated a good deal from seed, hence probably the reason why so many inferior varieties are distributed about the country; and, perhaps,

think we should have much cause to find fault with the Eastern Plane as a tender and slow grower. I feel pretty certain that it is on account of those worthless sorts being propagated that

species; its foliage is uncommonly large and handsome, often measuring from 9 in. to 11 in. broad by 8 in. to 10 in. long in the case of young robust trees. The leaves are almost entire, the



Maple-leaved Plane (*P. acerifolia*).



Caucasian Plane (*P. digitata*).



Oriental Plane (*P. orientalis*).



Wedge leaved Plane (*P. cuneata*).

when cuttings are taken insufficient care is paid to obtaining them from the best sorts only. If plants were reared from such fine kinds as the Weston Park and Highclere trees, I do not

has caused this Plane to be so much neglected of late years.

**P. orientalis hispanica integrifolia.**—

This is a variety of the so-called Spanish

lobes being hardly perceptible; the edges are serrated, with shallow and rather wide indentations; the leaf-stalks are of a reddish colour and somewhat short; the leaves are fan-shaped



and rounded at the base somewhat in the form of a heart. This Plane has stood the recent winters without injury; it appears to be a fine grower, making long, straight, leading shoots. I believe it is of Continental origin, and as yet it is comparatively new in the trade, and consequently scarce; being bold and very distinct-leaved, it is worth propagating freely, and deserves to be extensively planted. The following are allied varieties: *P. o. h. macrophylla*, *grandifolia*, and *flabellata*.

### The Western Plane.

(*PLATANUS OCCIDENTALIS*).

This, commonly called in America Buttonwood Tree, is, as its specific name implies, a native of the Western Hemisphere. It is distributed over the greater part of North America, but in no great numbers growing together. On the banks of rivers and in moist deep soils it grows very fast, and attains the most gigantic proportions. The measurements of some remarkably large Plane trees have been recorded by Michaux and other American writers as growing in different parts of the United States, even surpassing in bulk of butt near the ground any other native tree. The following are the measurements of some enormous sized specimens: One tree growing on a small island in Ohio girthed 40 ft. at 5 ft. above the ground; another gigantic specimen growing near Marietta, Ohio, was found to girth at 4 ft. above the ground 47 ft., and was perfectly sound; the length of its stem to the first branch was 20 ft. Other trees near it, but with smaller circumference of stem, measured from 60 ft. to 70 ft. in length without a branch. Another remarkable Plane cut down on the banks of the Genesee River girthed 47 ft. 6 in.; a section of the butt of this tree was hollowed out, and formed a room capable of containing 14 persons, the diameter of the hollow at 2 ft. above the ground being 15 ft. These enormous Western Planes are mostly growing on the banks of rivers, or in other deep, moist, alluvial deposits. Michaux says that they are never found upon dry lands having irregular surfaces; of course that is Nature's planted Planes. Bryant, when singing the praises of his native Plane, has identified it with the Green River—

Clear are the depths where its eddies play,  
And dimples deepen and whirl away;  
And the Plane tree's speckled arms o'ershoot  
The swifter current that mines its root.

The specific characters which distinguish the Western Plane (*Platanus occidentalis*) from the Eastern species are leaves broader, shorter, and less deeply cut, divided into three distinct broadish lobes, with one small loblet on the outer side near the base; colour of leaves paler green on the upper side; leaves less pointed at the base, or nearly truncate; colour of foot-stalks green and longer; catkins or seed balls a little larger and smoother on the surface; bark sheds off much more freely, especially so on young trees; general habit of growth more upright; a freer and a more rapid grower, and a loftier tree; stems longer, forming a finer and cleaner piece of timber, but less bulky; the wood very similar in texture and grain, and fit only for dry uses. The contrast in the outline of the two heads is so dissimilar, that by way of comparison, but on a much smaller scale, the Western Plane may be compared to a Pear, and that of the oriental species to an Apple tree; the Western Plane is a better water-side tree, on the banks of which it delights to lave its roots and dip its pendent lower boughs in the running stream. In such positions in deep alluvial deposits it grows almost with the rapidity of a Poplar, but is apt to get severely checked in some seasons from frost-bite late in spring. It is said by many

authorities to be hardier than the Eastern Plane. On this point I must demur, and hesitate to confirm that opinion.

**Best specimens about London.**—Although the Western Plane has been introduced 245 years, yet there are no specimens to be found nearly so old and large as that true specimen of the Eastern species at Weston Park. The largest trees that have come under my notice are less than 150 years old. The question that naturally suggests itself is, What has become of all the earlier planted Western Planes? Sang somewhat clears up the mystery in his "Planters' Calendar" by stating that "in 1809 nearly all the largest specimens of *Platanus occidentalis* in various parts of the country were killed;" and he also adds, "it is singular that of the *P. occidentalis*, the largest trees only were killed; trees of from 20 ft. to 25 ft. in height were little hurt, and smaller ones not at all, at least in every instance that came under our observation." With reference to the Oriental Plane, he says, "We do not observe or hear of a single tree being injured in any part of England." An account of the destruction of the Western Plane in 1809 is also given in the *Gentleman's Magazine* for 1810 and 1813. It is also recorded by Selby "that the winters of 1813 and 1814 proved fatal to most of the Western Planes that had escaped in 1809, a circumstance that fully accounts for the rarity of trees of this species throughout the kingdom of any extraordinary dimensions or advanced age at the present time." These statements, which are undoubtedly reliable, account for the scarcity of old Plane trees of the Western species throughout England at the present day. The largest, and at one time the finest, specimen of this Plane in London was growing in the Palace Gardens, Lambeth. It is, however, now a tree of the past, for it was cut down about two months ago to save it from dying a natural, though premature, death. Its top began to show signs of decay about 20 years ago, and gradually every year its branches diminished in size and foliage. Until this spring hardly any leaves came out at all, and, in consequence, its removal became necessary; doubtless to the dense smoke emitted from the manufactories in that neighbourhood, particularly that of the pottery works not far distant, may be attributed in a great measure the cause of its premature death. Its age was about 100 years; its stem, which was 32 ft. long, contained about 100 ft. of timber; the girth of the butt at 5 ft. up was 11 ft. 6 in. There is another Plane in the Palace Gardens near the pond, which was mentioned by Loudon in 1837 as then being upwards of 100 ft. high, and only about 57 years old. This tree is still standing; the lower branches are well clothed with healthy leafage, but the top or upper branches are quite dead. The stem is not so straight and fine a piece of timber as that of the one cut down; its girth at 5 ft. up is about 12 ft. Probably on account of this tree standing near the pond its roots received more moisture and sustenance than those of the other tree, a circumstance which may have conduced to prolong its life. As a rule, the Western Plane thrives better in and about London than any other park tree; consequently, it has been planted extensively there during the present century, and has succeeded so well that it has become known throughout the country under the appellation of the London Plane. In the numerous London squares and gardens it is certainly surprising to see how healthy, clean, and fresh looking this Plane appears, particularly in Berkeley, Bedford, and Mecklenburg Squares. Although surrounded by myriads of chimneys, its leaves for size and freshness can vie almost with the foliage of trees in the country far removed from smoke and town at-

mosphere. This Plane seems peculiarly well adapted for smoky towns on account of the smooth glossy surface of its leaves and their light green colour, and also the shedding off of its old bark, which gives to the stem such a healthy clean look.

**Best specimens in the country.**—Although this tree grows most freely in damp, open soil, it is evident that the comparatively dry air the squares of London tends to keep it in healthy growth. In all our southern counties good specimens from 60 ft. to 100 ft. high may be met with frequently, and also in some of the east, west, and midland counties fairly well-grown trees are met with occasionally, but the further north we go the fewer Planes of a timber-like size can be found. In Scotland, as a rule, the Plane tree will not stand the climate; in a few mild sheltered spots it has lived, but I am not aware that there are any large specimens in existence north of the Tweed. The largest and finest Western Planes in the south of England that have come under my notice are growing in the park at Stanwell Place, Staines. They are mostly standing out singly, and form noble ornaments in the park scenery. The age of these trees is probably from 100 to 120 years; they average about 90 ft. high, and girth at 5 ft. up the stems from 11 ft. to 13 ft. 6 in. At Shadwell Court, Norfolk, there are several very fine specimens, some of which are fully 100 ft. high, with clean straight stems from 25 ft. to 35 ft. to the first branches, and they measure from 11 ft. to 12 ft. in circumference of stem at 5 ft. above the ground; their ages vary from 120 to 140 years. At Longleat there are a few Planes planted indiscriminately amongst other trees in the pleasure grounds and in the park; they stand from 60 ft. to 80 ft. high, and girth from 8 ft. to 10 ft. round their stems at 5 ft. above the ground; under exactly the same conditions as to soil and site, and probably about the same age, these Planes over-top the Lime, Beech, Sycamore, Sweet and Horse Chestnut, but cannot compete with the English Elm and the Tulip tree for bulk of timber and lofty growth. At Highclere one of the best Planes is about 80 ft. high, and it girths 10 ft. at 5 ft. up the stem.

**Planes are very effective trees** standing in front of a group or clump of Elms, or other common Park trees; their lively green leaves contrast agreeably with the more sombre-hued Elms; indeed the Western Plane gives a cheerful aspect to park scenery in whatever position it is planted, for the majority of the park trees assume a dull green colour as summer advances; the Plane on the other hand seems to become a paler green until the approach of autumn, when its decaying leaves change to a mellow brownish hue.

**Propagation.**—The Western Plane is propagated from seed, cuttings, and layers. It is mostly grown in English nurseries from cuttings, from which it strikes freely, and makes rapid growth when once fairly rooted; hence, doubtless, is the chief reason why it has been more extensively grown than its congener the Eastern species; the Western Plane is more easily grown, soon making clean upright leading shoots and forming straight stems, with an occasional use of the pruning knife; in a few years they are fit for town or park planting. This Plane is grown largely in Continental nurseries, where it succeeds even better than in our own nurseries. Many, if not all those flourishing young trees planted on the Thames Embankment have, I believe, been imported from France. Notwithstanding the gusty, cutting winds to which these trees are frequently subjected, they have mostly all grown remarkably well, and



already begin to show that they are too thickly planted.

GEORGE BERRY.

*Longleaf.*

**Paulownia imperialis.**—In England and elsewhere this tree suffers more or less from the effects of frost, losing in the generality of winters its flower-buds, and in severe ones the young growth as well, but it suffers most when young. People are told that it requires to be planted in a sheltered place, and, therefore, it often gets into positions unexposed to full sunshine. With plenty of heat and light the wood gets ripier and firmer than when shaded, and thus better able to withstand the winter, and the tree becomes as it gets older an abundant bloomer, at least after mild winters. I had a tree fully exposed to the sun, and

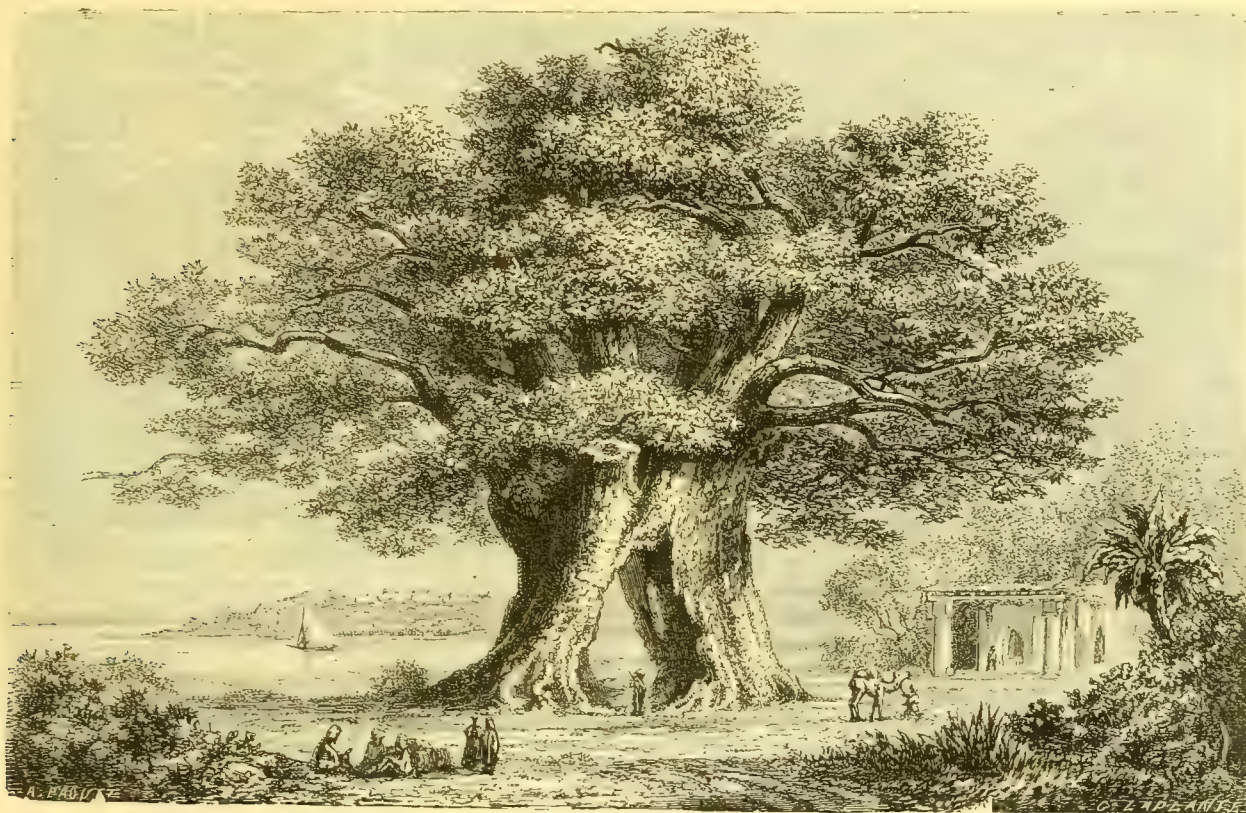
the Paulownia associated admirably.—SYLVESTIS.

**Magnolia grandiflora.**—The fine old tree of this growing near the succulent house at Kew is now bearing a good few flowers, several of which were expanded at the beginning of the week, and were unusually large for the time of year. Considering the rather exposed situation in which this Magnolia stands, it is a remarkable instance of constitutional difference in varieties of a plant, this tree being seldom found to thrive unless planted in a protected position.—B.

**Sophora japonica.**—Whilst strolling through the old arboretum at Kew in the beginning of the week I was agreeably surprised to meet with two beautiful specimens of this tree in full flower, surpassing in their fine symmetrical shape the old trees which were in flower in the

## REDLEAF, NEAR PENSHURST.

It is recorded of a former owner of Redleaf that he once started with his butler early in the month of May with the determination to see as many of the gentlemen's seats in England as he could do within a month. That he travelled far and wide, saw all he could see, and that when he came back at the end of the month and stood on the terrace at his own house, he said to his butler as he gazed on the view stretched out before him, "Well, David, we have seen nothing like this;" and as I stood on the same place on one of the loveliest days possible, in this the loveliest week of the whole year—the first week in June—I could not but feel that the statement was not far from the truth. As you stand upon the terrace you have as your



The Oriental Plane at home (see p. 369).

the northerly winds, too, and it bloomed capitally sometimes. The leaves, which get smaller in old trees, were about the size of those of *Aristolochia Sipho*. This Paulownia once formed part of a group of fine foliated plants; in fact, a background to the arrangement, these being planted out on three sides of it. *Musa Ensete*, with a stem 1 ft. in diameter at the ground, and 6 ft. high, with leaves of 12 ft. in length, some *Phoenixes*, from 10 ft. to 15 ft. in height, various *Azaleas*, *Banksia Solandri*, and *Ricinus arboreus* formed the main part of the group, and around and underneath grew *Alocasias*, such as *Antiquorum*, violacea, and others, and bulbous and other *Begonias*, with handsome foliage. The tubs or pots of the larger subjects were sunk into the soil of the lawn, only a circle of 2 ft. being left around each for the minor plants and for the purpose of giving water. The lesser things often looked better nestling at the foot of the more robust plants than planted separately, and creepers not dense enough to do damage are very pleasing if allowed to run about through the heads of these taller, stronger plants. With such an arrangement as the above

same part of the garden quite a month ago, as noticed in these pages. These two trees are about 25 ft. high and at least the same through, quite hemispherical in shape, and covered with large loose panicles of white Robinia-like flowers. They are certainly two of the finest of the many fine trees to be seen in this part of Kew Gardens, and to any one in search of a graceful ornamental flowering tree for a prominent position on a lawn, I would recommend this as being one of the most worthy. Loudon speaks highly of it as an ornamental tree, "in which respect," he says, "none of the arborescent Leguminosæ are equal to it in beauty of foliage and bark." A valuable character in this tree is the deep green of its foliage, which remains unaffected by the hottest and driest seasons, a character that renders it an excellent tree for planting on high and dry positions.—B.

**Clematis graveolens** is sometimes confused with *C. orientalis*. *C. graveolens* is from India, and the true species has a woodcut figure in the "Journal of the Royal Horticultural Society" (i., 307). *C. orientalis* is erroneously figured in the *Botanical Magazine*, t. 4495, as *C. graveolens*, and in "Flora des Serres" (vi., 548) under the same name.—H. N. ELLACOMBE.

immediate foreground the beautiful rock lawn, unique as far as I know in its character; in your middle foreground the Buttercup-clad meadows seem one sea of gold; then the water glistening like a sheet of Lilac in the brilliant sunshine; on your right hand the great masses of sandstone with the Beeches twisting their roots out through them; on the left the glorious timber of the park, while in the distance you have the lovely wooded valley, stretching up to Redhill, the landscape closed in by the chalk hills that form part of the backbone of Kent, meeting as they do in the far distance the Surrey hills, and all on this brilliant day flooded with glorious sunshine; all combining to form a scene of exquisite loveliness. People smile as we talk of our hills as they think of the mountains of Cumberland or Wales, but from Canterbury up to London, take whatever line you will, as you drive through its Hop gardens, orchards, and richly wooded demesnes, and mark on every side the evidence of a rich and



generous soil, you must feel that this indeed is the garden of England.

And now to more particularly describe this lovely spot. Redleaf has for a long number of years enjoyed a classic reputation; here was collected by its former owner, Mr. Wells, one of the most select and beautiful collections of paintings of English artists; here some of those best known in former days as artists used to meet; here, too, came Loudon, the father of modern English gardening, and many were the controversies about Redleaf and its improvements that he and Mr. Wells used to have; and although he was bluntly steadfast in his own opinions, yet he confessed on several points that Mr. Wells was the better gardener of the two. Since his time the estate has passed into other hands; the house that Mr. Wells built was pulled down, and Mr. Holes, its present owner, has built a very handsome one in its place, and when time has sobered its present somewhat glaring colouring it will harmonise well with its beautiful surroundings. He has preserved all the main features, and the alterations he has made are all in the direction of that which formed the chief beauty of the place.

The whole of this part of Kent was at some former time evidently one continuous forest, and hence as cultivation has increased groups of Oaks, Maples, and Thorns have remained in many of the fields, and hedgerows naturally helping the landscape gardener when he had to arrange such a place as Redleaf, for there was very little required, if not to do; and Mr. Wells, himself a thorough artist, felt and acted on the old Latin dictum, *Arts est celare artem*. Some planting had to be done, but only to connect that which already existed; there was no temptation, as there was no necessity to plant those heavy clumps of trees which are so disfiguring, and as there is no clearly defined boundary to the estate, so there was no necessity by belt or otherwise to mark it. As you look down on the view, you might believe that the property ran the whole way up to Redhill. Mr. Wells widened the river Eden (which afterwards assumes the name of the Medway) so as to form a wide piece of water. On looking down on the lovely scene I rejoiced to find that one sign of life had been left, one of our picturesque old-fashioned cottages—not the hideous structures of modern days—and as I saw it with its thatched roof nestling down amongst the trees, and the thin column of smoke curling upwards, I could not but feel that it was in true wisdom and with excellent taste that it had been left, not to disfigure, but to adorn the landscape.

I have always alluded to the rock lawn as being unique in its character. The place stands on the sandstone which crops up in many parts, here on the lawn being one, and advantage was taken of it to make one of the prettiest effects possible. Rock walks were made, the amount of rocks added to, Ivies planted to creep up over them, bags and pockets made for plants to nestle in, while close by large masses of Azaleas and Rhododendrons added their brightness and beauty to the scene; here were glorious masses of *Lithospermum prostratum* with its brilliant blue flowers, and two of the largest *P. clausenii* I believe to be met with anywhere, some 10 ft. in diameter, and some thirty or forty years old, and yet not higher than 5 ft. A clump of Azaleas here of pink, yellow, and orange varieties was very beautiful. The collection of herbaceous plants is not a very remarkable one, and there are a few things one would like to see altered, but it is singularly beautiful, and in the variety of its occupants, and still more by its lovely surroundings, forms a feature of real beauty.

Redleaf has long been famous for its collec-

tion of conifers, which seem to flourish most luxuriantly, and to many of them special interest is attached; these Cedars, for instance, with their wide-spreading branches, were the produce of a cone of seed which some forty years ago the late owner saw in a shop in Bond Street, labelled from the Lebanon; it was brought home here, and many of the fine Cedars which adorn the place were its produce. Here again is quite in the opposite extreme a splendid piece of the *Juniperus procumbens*, and on which the celebrated traveller Douglas, when he saw it said that he had often slept on such in his botanical rambles; it would be a useless attempt to enumerate the many grand specimens of all kinds of conifers which adorn the ground, not put together in what is called a pinetum, a position where each tree seems to say, Come and look at me, like photographs which always have the same studied effect, but here you stumble against as if had in the most natural way sprung out of the soil a Douglas, and then a *cephalonica*, while *Pinsapos*, *Wellingtonias*, and all the hardy forms are met with in all directions. On many of these Mr. Cox looks with deep interest. They were cuttings made by or seedlings planted by him, and year after year he has seen them increasing in size and beauty; while their disposition throughout the grounds has been most admirably managed. But it must not be supposed that the evergreen trees have absorbed the attention of the owners of Redleaf past or present. Whatever Mr. Wells may have done, I know not; but since Mr. Hills has had possession he has planted 14,000 trees and shrubs. Rhododendrons, grand and beautiful, are here; there was one plant of the Himalayan Rhododendron *Falconeri* with two heads of flowers, a rare thing in this part of the kingdom, while *Kalmias* and *Azaleas* show themselves; though in various parts of the grounds you come upon little openings where gardens are laid out, or ferneries, or pieces of water with banks all clothed with Ferns. Here again is a large greenhouse embowered in the beautiful surroundings of flowering shrubs; here another garden where there used to be a rustic billiard-room, but as the Cedars around it grew up into beauty it became a question as to which was to go, and Mr. Hills very wisely determined to keep his Cedars. In one of the ponds was a wonderful quantity of the Cape Pond-weed (*Aponogon distachyon*), which for growth I have never seen equalled; the leaves were at least 15 in. in length, and the flowers proportionately large.

Another very remarkable feature of Redleaf is the fernery. I have seen ferneries in many places more or less beautiful. I recollect Mr. Bewley's grand one at Blackrock, and Mr. Backhouse's lovely underground one at York, and many others, but none quite like this. The pillars which support it have been enclosed with wire netting filled with Sphagnum, and in these *Selaginellas* have been planted, which have completely covered them, while the capitals are masses of the lovely *Adiantum cuneatum*, the walls are completely covered with *Ficus repens*, the floor with masses of *Adiantum*; hanging baskets filled with various other species are suspended from the roof, while uprising from and towering above all are grand specimens of tree Ferns; but this is not all. Mr. Hills is a scientific man, and he has so cunningly arranged his reflecting mirrors, that you seem as if you were looking into the interminable shades of some New Zealand forest; and thus what is really a small fernery by this means assumes the appearance of a very extensive one. Mr. Hills has adopted the same plan in the conservatory attached to the house, where the plants are grown in beds along the sides of the house; the centre being open, the mirrors reflect the various as-

pects of the house, and a scene of real beauty is thus produced. Some people might find fault with these arrangements, but they are so carefully and unobtrusively done, that it must be a very fastidious person indeed who could object to them.

I feel how utterly one must fail to give anything like a true idea of the glories of Redleaf. I do not say anything about the admirable manner in which the kitchen garden and fruit houses are managed. Mr. Cox is too well known to make it needful for me to paint the Lily, but I have drawn attention to what I consider its peculiar features; the surpassing beauty of its situation, the careful and loving manner in which naturalness without wildness or untidiness has been kept up, its unique rock lawn, and its ingeniously devised fernery, but a lover of beauty and of true landscape gardening will find at every turn fresh beauties, and will come back to the old master's saying, "Well, David, we have seen nothing like this." DELTA.

## THE KITCHEN GARDEN.

### FASHIONABLE POTATOES.

A BELGIAN correspondent, writing in a contemporary, speaks of a number of selected varieties of Potatoes which he had from this country to grow on trial, and does not seem to be much in love with them. He found nothing extraordinary about them either as regards their large cropping properties or their immunity from disease. The good point was their shape, but he does not like their flavour, or rather want of flavour; mealy enough they were, but tasteless to a degree. With the exception of the mealy property, which is often absent, this is just the verdict passed on the great bulk of the show kinds by nine-tenths of the people in this country, whose ideas are old-fashioned enough to assess the merits of Potatoes on their edible properties, and not on their appearance.

Anyone reflecting on all that has been done for Potatoes of late years might ask himself the question, What influence have exhibitions had on them so far as either promoting the cultivation of good sorts, or pointing out to the public which are really the best kinds, regardless of their being old or new? I have always been one of the number who hold that horticultural exhibitions have done and continue to do much to encourage good cultivation, not alone as respects those who exhibit, but in the case of the still greater number who look on, and also in showing the gardening public which are the best varieties of the things in general shown. But in this, as in most other matters, there is an exception, and it exists in the case of Potatoes and Peas. From the first preference was given on the exhibition stage to appearance and size, and therefore as far as these two vegetables are concerned, exhibitions are positively misleading. A handsome appearance is required in plants that are grown to look at, but good looks are not everything in the case of a vegetable intended to be eaten. T. BAINES.

**Planting Cabbages.**—Now is the time to get out the main stock of Cabbages for spring use. Provided the seed was sown, as it should have been, in July, the plants will now be in good condition for planting, and a few rows of the most forward ones should be put on a warm border for the earliest use in March; but for main crops on more open quarters, to come in for use in May, we do not often dig the ground at all, as after Onions we generally plant Cabbages, and if the ground was deeply cultivated and enriched with manure for the Onions it will do well for the Cabbages. If we find they require any stimulant in spring, a little short manure, such as that from old Mushroom beds, is spread between the rows and lightly forked in. We usually plant 2 ft. apart from row to row, and 1½ ft. from plant to plant in the row; draw out the strongest plants first, as the weakly ones will quickly strengthen as they



get light and air, and be fit for late plantings. Let the plants in deep enough to keep them quite steady, and dust with wood ashes, soot, and lime to keep slugs at bay; after a lapse of ten days stir the surface with a Dutch hoe when it is dry, and little more attention will be required until spring. Any small plants left after the main plantings are finished should be pricked out before winter sets in in beds 3 in. apart, as they are serviceable for filling gaps or making new plantations. The red Dutch pickling Cabbage we always winter in this way, and transplant in February.—J. G.

**Substitutes for Seakale.**—A contemporary tells us that Swede Turnips make a capital substitute for Seakale. My experience in the matter is anything but satisfactory. Swede Turnip tops in a green state, and grown in a Peach house or Vinery early in spring, when greens are scarce, are most wholesome and enjoyable, but when blanched they are insipid. If a substitute for Seakale is wanted, and I believe it is, there is nothing like white or silver Beet, which I regularly send to the table from October to January. Still I must remark that one seldom gets bought seed true. This Beet in its best state is white as snow with crumpled leaves, while what is generally got is a dirty white. When visiting a large place in the south of England a short time back, I saw a large quarter of this Beet, and on enquiring about it, the gardener informed me that it was greatly liked. In November each plant is tied up, and the rows are filled in with fresh tree leaves, which not only protect the stems, but improve the flavour of the Beet which is used as Seakale up to February. I should advise all who grow this Beet to take up a few of the right variety and house them for seed purposes. The cultivation of white Beet is a simple matter. However, I may say, do not sow it before April 15, or it will "bolt." Keep the land between the drills well hoed, and thin out the plants to 12 in. apart.—BURGHLEY.

## THE ROSE GARDEN.

MESSRS. ELLWANGER & BARRY ON  
BEDDING PERPETUAL AND OTHER  
ROSES.

THE great attention bestowed on Roses by this firm makes their observations of more than usual interest, and in their recently issued list we find some observations made during the current year, which will interest our Rose-growing readers. Messrs. Ellwanger and Barry have tested more Roses than any other American Rose growers, and though their climate is not the same as ours, it is a northern and a very severe one; and their experience is valuable for us too.

The spring and early summer of 1881 have been more like an English season than we have had in many years; the cool weather and frequent showers made the flowering period later, and brought on the blooms very gradually, one following another, unlike the short, precipitate blaze of glory to which we are accustomed, and which so suddenly dies away under the influence of a burning July sun, leaving here and there, as embers, a few good representatives of Alfred Colomb or Pierre Notting, the after-glow of which reminds us of the brightness and splendour that were. Among the first of the Roses to flower was Climbing Jules Margottin; a long row of this (two-year-old plants) was literally covered with a mass of flowers and buds, and proves this a valuable early sort. The finest of the Hybrid Perpetuals were Alfred Colomb, François Michelon, Fisher Holmes, Marie Baumann, Marie Rady among the red and bright crimson Roses, and among the deep crimsons Abel Carrière, Louis Van Houtte, Pierre Notting, and Xavier Olibo stood out most prominently; Baron de Bonstetten, Charles Lefebvre, Horace

Vernet, Jean Liabaud, Mme. Victor Verdier, and Maurice Bernardin were also very fine. The season seemed most favourable for the dark shades, those of the Victor Verdier type losing colour sooner than usual; Baroness Rothschild gave much the largest number of fine pink flowers. Maurice Bernardin has always been one of the most productive June Roses, but we never saw it give such a wonderful profusion of flowers of high finish as this year. François Michelon has again proved the best late sort, yielding more fine blooms late in July than any of the others. The most generally useful Rose is Alfred Colomb; none among the Hybrid Perpetuals give so many fine blooms throughout the entire season as this, and no variety in any other class, excepting always La France, can compete with it.

In the spring we planted two circular beds of hybrid Teas in order to test their value as bedding Roses. In the outer row of the smaller bed we put 31 La France, next to it 24 Duchess of Westminster, then 17 Beauty of Stapleford, and in the fourth and inner row 8 Duchess of Connaught. In the larger bed we put 55 La France on the outside, next to it 47 Jean Sisley, then 39 Michael Saunders, and after this smaller quantities of Hon. George Bancroft and the others. The plants when put out were taken from 3-in. pots and were all of the same age and vigour. Up to this time (August 15), La France, as we had confidently expected, has proved much the best; next in value and in order named are Michael Saunders, Mme. Bernaix, Captain Christy, Mdle. Brigitte Violet, Duchess of Westminster, and Beauty of Stapleford, the two former being decidedly superior. None of the others are likely to prove equal to these for outdoor culture. While the foliage of La France remained clean, most of the others were attacked during the early part of July with mildew, notably Jean Sisley, Beauty of Stapleford and Pearl. Michael Saunders, Mme. Alexandre Bernaix, and Duchess of Connaught remained nearly clean. We believe the two former will make very desirable Roses for open air culture; they are really the only ones that have thus far made any mark as budding Roses; another season some of the others may do as well, but we doubt it; none have so healthy and vigorous habit as Michael Saunders, and none have a shade of colour at once so distinct and permanent.

There are many old varieties of Roses, and new ones also, that are offered by other houses which are not found in our catalogue, and an explanation of what guides our selections may be appropriately made here. It is not to be supposed that any large number of connoisseurs would exactly agree as to what are the best Roses, and therefore we reject some sorts which certain authorities would say ought to be retained. With the immense number of kinds introduced within the past forty years (doubtless considerably more than three thousand), and the annual introduction of more than fifty new sorts, the amateur is greatly puzzled to know what to select, since among the vast numbers in cultivation are many utterly worthless kinds, many which have merit, but are undesirable by reason of some radical defects, and many more which are intrinsically fine, but not useful on account of close resemblance to others. Therefore a choice must be made, and in making our selections we design retaining representatives of all the really desirable forms and shades, choosing the most perfect of each type that are distinct. We consider a perfect Rose one that excels in the following particulars and in the order named: First.—Beauty of colour—as that which first attracts us to a Rose; this must be decided and pronounced, or else of great delicacy and soft-

ness, and, withal, of durability; for example, Pius IX., Giant of Battles and all its type, the darker varieties of the Victor Verdier type, all lose their colour very quickly, soon assuming a muddy hue not at all pleasing. Second.—Beauty of form—without which colour avails but little. We have globular, cup-shaped, imbricated, and flat forms, besides many modifications of these. The finest of all is the globular Rose, but the other forms are pleasing in their variety, and we should not wish to be confined to the one, but symmetry is positively required. Roses that have irregular indentions, gnarled centres, and such malformations should be thrown out. Third.—Fragrance—deprived of this no Rose can be perfect. Whoever yet saw a beautiful Rose without wishing to inhale its odour. Gratification in this is often far more pleasing to us than the mere sight of beauty. Fourth.—Profusion and continuity of bloom. We have altogether so many kinds of so-called Hybrid Perpetual Roses, which, though excelling in other qualities, are lamentably deficient in autumnal blooms. Fifth.—Vigour and healthfulness of growth. We want kinds that do not require extraordinary treatment to produce satisfactory results, but such as will thrive with proper care and attention and (among Hybrid Remontants) that will satisfactorily endure the extremes of summer's heat and winter's cold. Our selections are made with reference to these five qualities, and those kinds which excel in all are our most perfect Roses, and most deserving of extensive culture. Among Hybrid Perpetuals, as has already been stated, we consider Alfred Colomb to be the most perfect Rose which we have ever seen.

**Manetti stocks v. own roots.**—We grow our Roses in two ways, viz., on their own roots from cuttings; and budded low on the Manetti. Most of the tender and climbing sorts are grown from cuttings; the Hybrid Perpetuals, Mosses, and summer Roses are grown in both ways. The Manetti stock was obtained over thirty years ago from Como by Mr. Rivers, and has largely superseded the Dog Rose and other stocks. We find many varieties of Roses grown on this stock adapt themselves to a greater range of climate and soil, bloom more profusely, endure better the heat of the summer, and make far stronger plants than if grown on their own roots. Many object to budded Roses, on account of the suckers they sometimes throw out; but if proper attention is paid to their planting, this will rarely be an annoyance.

Budded Roses should be planted sufficiently deep, so that the junction of the bud with the stock is from 2 in. to 3 in. below the surface of the earth. We cannot too forcibly direct attention to the above rule, a compliance with which is necessary to success.

For varieties like Anna de Diesbach, General Jacqueminot, John Hopper, &c., which grow vigorously on their own roots, there is nothing gained by budding, and such kinds we propagate almost exclusively on own roots from cuttings; but there are many varieties, like Madame Boll, which make plants equally strong as those first named if worked on Manetti, but which propagate with difficulty or do poorly if grown from cuttings. Many others, again, of moderate growth, like Marie Baumann, Louis Van Houtte, become much more vigorous and succeed better every way when budded on Manetti. Still others, like Baroness Rothschild, Madame Lacharme, &c., absolutely refuse to grow from cuttings, but when worked on the Manetti stock make bushy, good plants. For stock plants, from which to propagate and for forcing purposes, it is generally conceded that budded plants are much to be preferred to those on own roots.



## THE GARDEN FLORA.

## PLATE CCCV.—THE WHITE BEAM, THE ROWAN TREE, AND THEIR ALLIES, WITH A FIGURE OF PYRUS HOSTII.\*

THE genus *Pyrus*, as generally understood in this country, includes four very distinct groups of species, referred to as many different genera by some Continental writers. These are *Pyrus* proper, *Cydonia*, *Mespilus*, and *Sorbus*. Professor Decaisne, in a recent memoir on the Pomaceæ, carries this sub-division much further, restricting *Pyrus* itself to the Pear and some allied species.

For the Apple, and such species as *Pyrus spectabilis*, *coronaria*, and *baccata*, he proposes the generic name *Malus*; for the True Service and one or two others, the generic name *Cormus*; for the Mountain Ash and allied species, *Sorbus*; for the White Beam, *P. Hostii*, and others, *Aria*; for the Wild Service, *Torminaria*; and finally, for some North Indian species having quite small fruits, the name *Micromeles*. This brief explanation will be sufficient to show that most of the species of *Pyrus* have several synonyms, and as it is of importance to the purchaser to know that names are applied to the same species, we propose citing those most commonly employed by nurserymen. Taken in its broadest sense, the genus *Pyrus* comprises from forty to fifty species

inhabiting the temperate regions of the northern hemisphere. Some of the species are exceedingly variable, presenting a number of distinct forms not easily defined by words, and more or less intimately connected by intermediate varieties. In this article only those species belonging to the group, of which

*P. Hostii* is a member, will be considered. This group corresponds to the section (or genus) *Sorbus* of some writers, and comprises a number of ornamental species especially worthy of the attention of planters in open, bleak, and hilly situations, especially on chalk and limestone, and near the sea. A few, like the subject of the

accompanying plate, are shrubby, but they are mostly trees of small or moderate size. One characteristic they have in common is the arrangement of the flowers in clusters (corymbs) at the tips of the branchlets; and the species may be roughly sub-divided into three sets distinguished by the foliage. In the first set the leaves are merely toothed on the margin, as in *P. Hostii*; in the second they are more or less coarsely lobed, as in the Wild Service; and in the third they are pinnate, that is, cut up into separate leaflets, as in the True Service and the Mountain Ash. There are, however, numerous intermediate forms ex-

catalogue of the plants in the botanic garden of the university of Vienna, 1826; and this was followed by a technical description in Host's "*Flora Austriaca*," ii., p. 8. A few years afterwards Tausch met with it on the loftiest elevations of the Riesen Gebirge, where it formed a dwarf shrub. He at first regarded it as an alpine form of the White Beam with rosy flowers. It is in reality more closely related to *P. Chamæmespilus*, differing in its larger flowers, in larger clusters, and in its bolder foliage. Under cultivation it forms a shrub as much as 10 ft. to 15 ft. high, but it is easily kept dwarf, and in

that condition flowers freely, the flowers being succeeded by clusters of red fruit.

SHRUBBY WHITE BEAM (*Pyrus Chamæmespilus*, Linnaeus; *Sorbus Chamæmespilus*, Crantz).—This, like the preceding, has rose-coloured flowers, but they are small and few together, and as an ornamental shrub this is much inferior. In addition to the names given above, it has a synonym in almost every proposed genus of the Pomaceæ. It inhabits the chalk and limestone mountains of Central Europe.

WHITE BEAM (*Pyrus Aria*, Ehrh.; *Sorbus Aria*, Crantz, &c.).—Though not a common tree in Britain, the White Beam is generally dispersed, growing in exposed situations on rocks, especially on limestone. It is often shrubby, yet under favourable conditions it attains the di-

mensions of a moderate tree from 30 ft. to 40 ft. in height. The marked character of the White Beam is the dense coating of silvery down on the under surface of its leaves, which gradually disappears with age. In the common form the leaves are merely toothed, as in *P. Hostii*, but there are varieties with the leaves more or less lobed. Respecting this tree, Selby says: "We consider it well adapted for nursing or protecting other young trees when first planted and in exposed situations, as it shelters them without interfering with their growth, always carries itself erect, and, from its stiff upright growing branches, is not acted upon by the most violent winds." If not an ornamental tree of the first order, it has its uses, and when covered with its white flowers in spring, or laden with its



Fruit of *Pyrus Hostii* (from tree in Messrs. Osborn's nursery, Fulham).

hibiting a gradual transition from the finely toothed leaves of the first set to the pinnate leaves of the third set. Let us now pass them in review, beginning with the subject of the plate.

BASTARD WHITE BEAM (*Pyrus sudetica*, Tausch; *Aria Hostii*, Jacquin; *Sorbus Aria* var. *suecica*, Linn.; *Pyrus Chamæmespilus* var., B. Koch; *Crataegus Hostii*, in Continental nurseries).—From the synonyms quoted it will be seen that this handsome shrub was known to and described by Linnaeus, yet on its rediscovery in Central Europe, in two different localities, it was redescribed and renamed. It occurs in sub-alpine situations in Sweden, Switzerland, Savoy, and Bohemia, but although so widely spread it seems to be rare and local. The first notice of it we find in horticultural literature is in Jacquin's

\* Drawn from specimens in Messrs. Osborn's Nursery, Fulham.











large red fruit, it is by no means unattractive. The following forms are regarded by some as varieties of this species, by others as independent species:—

**P. FENITICA** (syn., *Sorbus hybrida*, Fries; *Pyrus pinnatifida*, Ehrhart, according to Lindley).—Leaves much longer than those of the typical form, borne on longer, slenderer stalks, and cut into lobes, almost or quite to the midrib of the lower half. Sometimes the lowermost lobes are separated like distinct leaflets. *P. scandica* (syn., *P. scandica*, Fries; *Pyrus intermedia*, Ehrhart, according to Lindley).—Leaves only slightly lobed or doubly serrated. *P. rupicola* (syn., *Sorbus oblongifolia*, Reichenbach).—Distinguished by its remarkably obovate leaves tapering into a very acute base. There are several other closely allied species or forms, as *P. græca*, &c., but they possess no special merits. *P. lanata* is an allied species inhabiting eastern temperate Himalaya from Kashmir to Kumaon, at elevations of 8000 ft. to 10,000 ft. It differs in the lobulate leaves (like those of *P. latifolia*, Poiret) with regularly serrulate lobes, much larger flowers, and fewer very large fruits. *P. vestita* (syn., *P. crenata*, Lindley "Botanical Register," t. 1655, not of Don), from the same region, is an allied species having large oblong leaves and the petals woolly within. Both are in cultivation, though rarely seen.

**WILD SERVICE** (*Pyrus torminalis*, Ehrhart; *Cratægus torminalis*, Linnaeus; *Sorbus torminalis*, Dod, &c.).—Always easily distinguished from the white Beam by its much thinner leaves on slender stalks being divided nearly to the middle in a few acute lobes, which are again very finely toothed, and in having fewer larger flowers. It is also usually of larger stature, and inhabits the lowlands. In England it is confined to the southern half of the country. This grows well on stiff soils. *P. latifolia* (Poiret), a form found in the forest of Fontainebleau and a few other localities, is intermediate between the Wild Service and the White Beam. It has broad, thin, scarcely lobed leaves and large flowers, and is equal to any of the group as an ornamental tree.

**MOUNTAIN ASH OR ROWAN TREE** (*Pyrus Aucuparia*, Gærtner; *Sorbus Aucuparia*, Tournefort; *Mespilus Aucuparia*, Scopoli).—The elegant and graceful Mountain Ash is certainly the most ornamental of the group, and particularly so at this season of the year, when laden with its large loose clusters of cinnabar red berries, associated with the slender pinnate leaves. As it does not grow to a large size, it is admirably adapted for small gardens, especially as it will grow in all ordinary soils, but it does not succeed on wet heavy soils. In a wild state it affects rocky and hilly countries, and it extends as far north as Orkney and Shetland.

**TRUE SERVICE** (*Pyrus domestica*, Smith; *Sorbus domestica*, Linnaeus).—This strongly resembles the Mountain Ash, but it is a slower growing tree, and the leaves have fewer, deeper, straighter serratures, and are more flocculent when young. The fruit is much larger, pear-shaped, oblong, or spheroidal and flattened, according to the variety. Formerly this was admitted as a member of the British flora on the strength of a solitary old tree in Wyde Forest, but it appears to be truly indigenous only in the south of Europe and Algeria.

**AMERICAN MOUNTAIN ASH** (*Pyrus americana*, De Candolle; *P. microcarpa*, De Candolle; and, perhaps, *P. sambucifolia*).—This (or these) is also closely related to the European Mountain Ash, having broader, acute leaflets, and smaller bright red fruits. There are also some forms of this set in North-eastern Asia, all very closely allied, and only desirable in making a collection.

W. B. HEMSLEY.

## THE FRUIT GARDEN.

### THE BEST PEARS.

(Continued from p. 330.)

**The Crassane Pear** (Bergamotte Crassane).—*Synonyms*.—Bergamotte Crésane, Bergamotte de Crésane, Beurré Plat, Bergamotte Crassane d'Autonne, Crassane d'Autonne, Poire Plat.

**DESCRIPTION OF THE TREE.**—Wood, strong. Branches, numerous, upright at the tip, spread out towards the base, large, very long, flexible, light brown with a slightly grey tinge, finely speckled, the callosities not very prominent. Eyes, pretty large, blunt, ovoid, non-adherent with the scales usually swollen. Leaves, large, oval, slightly crenellated or denticulated, and borne on a long weak stalk. Fertility, average. This variety only fruits well when grown on an espalier, and bears scarcely any fruit as a pyramid, especially when grafted on a free stock.

**CULTURE.**—Very vigorous; it is better to graft on a Quince stock on which it forms fine well ramified pyramids well clothed with leaves. The development of the graft is very rapid.

**DESCRIPTION OF THE FRUIT.**—Size, above the average and sometimes pretty large. Shape, rounded, knobbed, flattened top and bottom, and sometimes having one side more swollen than the other. Stalk, long, thick, bent, very fleshy at the base, obliquely placed in a moderate depression with an irregular margin. Eye, medium, open or half closed, regular or twisted, placed in a very large hollow which is generally somewhat shallow. Skin, light yellowish green, veined and speckled all over with fawn colour. Flesh, yellowish white, soft, the grain of medium fineness, juicy, odorous, melting, and hard. Juice, extremely plentiful, refreshing, sugary, slightly sharp, and delicately perfumed. Season, from the middle of October to the end of November, often reaching into December. Quality, variable, sometimes first, and sometimes second rate.

**HISTORY.**—In 1861 M. Balc, Procureur-Imperial, spoke as follows on the subject of this Pear at a meeting of the Horticultural Society of the city of Dôle, in the Jura, while giving an account of some pomological notices written by M. Liron d'Airolles: "The Crassane derives its name," says M. Liron d'Airolles, "from the Latin word *crassus*, which means thick, but according to another opinion which I have heard expressed without knowing on what authority it is based, the Crassane is so called because the Roman General Crassus imported it into Italy or grew it from choice in his own garden" ("Notices Pomologiques," 1861). For our part we are strongly of opinion that Crassus, the celebrated consul, who died fifty-three years before the Christian era, had nothing to do with the Crassane Bergamotte. Had it been otherwise, the Roman agriculturists who came after this personage would have mentioned it, as they did in the case of the Dollabellian, Licinian, and Turannian Pears, which they tell us took their names from the celebrated Romans Dollabellus, Licinius, and Turannius. Two German authors, already quoted by us, Manger in 1783 and Sickler in 1802, have, it is true, supposed that the Crassane figured on the tables of the ancient masters of the world, not, however, according to them, under the name of the Crassane Pear, but under that of the Lateranus—a contradiction which clearly shows the valuelessness of much opinions, and leads us naturally to seek in some other direction for the origin of this delicious fruit, as well as for another etymological derivation for its very peculiar name. Let us see what says M. Eugène Forney, professor of arboriculture at Paris, and one of our most learned pomologists. In speaking of this variety in "Le Jardinier Fruittier," 1862, he tells us that it was introduced into culture by M. Quinte, gardener to Louis XIV. "We do not know," goes on M. Forney, "from what locality he obtained it, but there is every reason to believe that it came from the south of France. It is first spoken of by Merlet in 1667. The name Crassane appears to be derived from the Latin word *crassus*—thick, flattened."

We do not appear to be very far from the truth, but to complete our information on the matter it must be added that it was not in 1667, but in 1690, that Merlet first described this Pear as new under the name of Bergamotte Crésane, and stated it to be rare ("Abregé des bons fruits," 1690). At this period it had only just begun to spread, but it could not have been known very widely before 1675, seeing that in the edition of Merlet of this date he does not even mention it. As for the word Crassane, it may very possibly be derived from the Latin adjective *crassus*, a term which does not inaptly describe the stumpy appearance of these Pears. While allowing this, however, we do not think it idle to remember that in the department of the Nièvre, near Donzy, there is a small village called Crésane, and there is nothing against the Crassane having been raised and named there. This supposition is in some sort confirmed by the fact that Dom Gentil, a pomological contemporary of Merlet, speaks of it as the Bergamotte de Crésane in his "Jardinier Solitaire," published in 1732.

**REMARKS.**—Louis Noisette, amongst other observations which he makes on this tree and its fruit in his "Jardin Fruittier," 1839, quotes the following from a good authority on pomology: "It is a fruit that merits the reputation which it has obtained. It is easily propagated, and is an excellent subject when it unites all the qualities which belong to it in one tree. But certain trees and soils give nothing but insipid fruit, which also becomes bitter and gritty." In general, the fruit is at its best when grown in a soft, fresh, and even slightly damp soil. We shall complete this note by observing that we have sometimes found great mealiness and an excessive astringency in certain specimens of this, especially when gathered from trees grown on a calcareous soil, a kind of soil which by the way is preferred by many growers to a soil of a slaty or schistose nature for the cultivation of this variety. Be this as it may, it is perfectly certain that the Crassane varies greatly both in flavour and size. It sometimes attains considerable dimensions. In 1862, at the Horticultural Show at Chartres, there was one exhibited, the weight of which exceeded 1 lb. 5 oz. In the fruit room it must be handled with great care, as it is liable to decompose with rough usage.

**Bergamotte Esperen.**—*Syn.*—Espéren Pear.

**DESCRIPTION OF THE TREE.**—Wood, pretty strong. Branches, numerous, somewhat curved and almost erect, strongly geniculated, thick, long, chestnut, spotted with red. Buds, medium size, short, pointed, ovoid, non-adherent, and sometimes placed like a spur. Leaves, large, abundant, usually elliptical, slightly twisted with the edges indented or crenellated; the stalk long, thick, and provided with well developed stipules. Fertility, remarkable.

**CULTURE.**—Very vigorous; it may be grafted either on a free stock or a Quince. It always forms very good pyramids, and the growth of its shoots shoots is most rapid.

**DESCRIPTION OF THE FRUIT.**—Size, medium, but often much larger. Shape, rounded, knobbed, flattened at the base, and slightly knobbed at the top. Stalk, of medium length, thick, straight, implanted in a very small cavity. Eye, large, well formed, somewhat small, even on the edges. Skin, rough to the touch, dark greenish yellow, speckled with red, with reddish veins round the stalk, and often marked with blackish patches. Flesh, somewhat yellowish, fine, exceedingly melting and juicy, slightly gritty. Juice, most abundant, slightly acid, refreshing, very sugary, deliciously perfumed. Season, from the middle of December to April. Quality, first rate.

**HISTORY.**—This Pear, which is one of the best with which we are acquainted, belongs to the Belgian collections. "It was obtained," says M. Bivort in his "Album de Pomologie," 1847, "by Major Espéren in 1830, and was valued by him more than any of the other Pears which he had succeeded in raising. It was introduced into France in 1844, according to M. du Breuil ("Cours d'Ar-



boriculture," 1851). Major Espéren lived at Malines.

**REMARKS.**—The fruit of this Pear is pretty variable in size, and, as a rule, they do not exceed the medium; they, at times, however, attain very considerable proportions. For instance, at the Horticultural Exposition of Chartres held in 1862, M. Biard, of Châteaudun, submitted one to the jury which weighed two-thirds of a pound. In the third volume of his "Jardin Fruitier du Muséum," 1860, M. Decaisne states that he has often seen this fruit labelled by mistake King Edward's Pear, which has no soil of analogy with the Bergamotte Espéren. This remark reminds us that in Belgium even the late Adrien Papelen declared that the Bergamotte Espéren was the same as the Besy Espéren, a strange mistake, which was corrected some time after by Dr. Jahn, the German pomologist.

**Gansel's Bergamotte.**—*Synonyms.*—Bonne Rouge, Diamant.

**DESCRIPTION OF THE TREE.**—Wood, pretty strong. Branches, very numerous, spread out, thick, short, kneed, downy, light greyish brown, finely speckled, with the consinite only slightly prominent. Eyes, small or medium; wood, flat and downy, adherent, having the scales slightly disjointed. Leaves, large, abundantly oval, lanceolate, very wavy, channelled, twisted, with even edges, and the stalk short and very thick. Fertility, fairly good.

**CULTURE.**—Exceedingly vigorous. This Pear tree, the shoots of which develop rapidly, may be grafted either on a free stock or a Quince. It forms fine thick pyramids.

**DESCRIPTION OF THE FRUIT.**—Size, about the medium; shape, rounded, broader than long, regular. Stalk, sometimes short and oblique, but usually pretty long and thick, straight or curved, fleshy at the base, swollen at the top, and inserted in a large cavity. Eye, large, well opened or half closed, almost nearly prominent. Skin, light green, speckled, marbled with brown, often tinged with red on the side next the sun. Flesh, whitish, luscious, half melting, juicy, marcescent, slightly gritty about the pips. Juice, very abundant, sugary, vinous, delicately perfumed with Musk, but being generally somewhat acrid. Season, from the middle of September to the middle of October. Quality, second-rate.

**HISTORY.**—The celebrated English pomologist, Lindley, gives some valuable details with respect to this fruit in his "Guide to the Orchard and Kitchen Garden," published in 1831. "This delicious Pear, which is a native of Britain, as shown in a letter written in 1818 to Sir John Williams, of Pitmaston, by Sir David Jebb, of Worcester, in which Sir David states positively that the Gansel Bergamotte was grown from a sowing of seeds of the Autumn Bergamotte by his uncle, Lieut.-General Gansel, on his estate of Donnell Hill, near Colchester." The variety known to the French as the Bonne Rouge in no way differs from this Bergamotte. This latter name was given to it by the French growers as soon as they received it from England.

**REMARKS.**—In France the Gansel Bergamotte is rarely as good as it is in its native country. We have often found it to possess a disagreeable astringency, and is nearly always more or less gritty. It is by mistake that the Gansel Bergamotte has been made synonymous with the Bergamotte d'Angleterre and the Doyenné Gris, which are quite distinct varieties. These three fruits bear no resemblance to each other in any way either in themselves or in the trees which bear them.

**Summer Crassane** (Bergamotte Rouge).—*Syns.*—Bergamotte Musquée, Petit Muscat d'Autonne, Sicily Pear, the Colombiers Pear, Muskéd Sicily Pear, Crassane d'Eté, Bergamotte Dorée.

**DESCRIPTION OF THE TREE.**—Wood, pretty strong. Branches, numerous, very much spread out, thick, almost straight, slightly downy, light brown, finely speckled, with the callosities pretty prominent. Eyes, medium, ovoid, greyish, only slightly separated from the wood with the scales half open. Leaves, large, open, undulated, with the edges entire, and the stalk very long and usually thin. Fertility, remarkable.

**CULTURE.**—Very vigorous. It may be grafted either on the Quince or free stock. It grows quickly, and the pyramids it forms are fairly handsome.

**DESCRIPTION OF THE FRUIT.**—Size, average, and often very large. Shape, turbinate, obtuse, swollen, knobbed at the top, and sometimes completely rounded. Stalk, of medium length, thin, straight, or only slightly curved, swollen at the base, usually continuous with the fruit, inserted obliquely and surrounded with knobs. Eye, large, well developed, open, nearly prominent, wrinkled at the edges. Skin, greenish yellow, speckled, stained with red, tinged with bright pink, interspersed with dots and veins of a deep yellow on the side next the sun, and sometimes with brownish spots. Flesh, white, coarse grained, melting, very hard, and somewhat acrid. Juice, fairly plentiful, with an agreeable musky perfume, but generally wanting in flavour and delicacy. Season, from the middle of September to the middle of October, and sometimes even into November. Quality, first rate for cooking, but only third rate for dessert.

**HISTORY.**—We have found nothing in any way to enlighten us on the origin of this Pear. Le Lectier in his "Catalogue" mentions it in 1628, and only gives it one name—Bergamotte Musquée. A short time after, in 1675, Merlet, speaking of the same Pear, gives the synonyms of the Colombiers Pear, the Sicily Pear, &c., but who can with any certainty say whether it was from Sicily or from Colombiers that this Pear originally came? Duhamel describes it in 1768, and calls it Bergamotte Rouge, on account of its beautiful colour. Under the same name the Germans cultivate another Pear, which is figured in the "Illustrirtes Handbuch Obstknude," by Overdieck, published in 1860, but, after an attentive examination of it, it appears to us to differ notably both in its qualities and form from the variety planted in France under this title.

**REMARKS.**—Amongst Pears for preserving purposes, the Summer Crassane will always hold one of the first places on account of its fecundity, and above all for the facility with which it may be converted into a delicious preserve. Its keeping qualities are also great, and it is not an uncommon thing to see Pears of this variety kept in perfection until the end of November, a quality which is due to the somewhat dry texture of its flesh. The size of this Pear is very variable, the most usual dimensions being 2 in. by 2 in.

**The Chaumontel Pear** (the Bezi de Chaumontel).—*Syns.*—Beurré d'Hiver, Jenneret, Beurré de Chaumontel, Bon Chretien de Chaumontel.

**DESCRIPTION OF THE TREE.**—Wood, weak and greyish green. Branches, few, spread out, thin, very long, flexible, reddish, downy, and marked with pretty prominent veins, finely speckled, with the callosities well marked. Eyes, small, ovoid, blunt, non-adherent. Leaves, not very numerous, elongated, oval, deeply indented, slightly waved, yellowish green, often tinged with red, the stalk being long, stiff, and thick. Fertility, average.

**CULTURE.**—This Pear may be grafted more advantageously on the Quince than on a free stock, although it is only moderately vigorous. The aspect which suits it best is a southern wall, against which it should be trained as an espalier. It may also be grown as a standard, in which case it should be grafted on a free stock. The pyramids which it forms are generally but poorly ramified, but they grow well.

**DESCRIPTION OF THE FRUIT.**—Size, bulky. Shape, variable, but most usually elongated, blunt, knobbed, irregular, and sometimes sensibly crooked. Stalk, long or short, straight or curved, of moderate strength, nearly always inserted perpendicularly and level with the skin, but sometimes also placed obliquely and out of the axis of the fruit. Eye, large, but slightly developed, rarely much sunk, open, without folds at the edges. Skin, vitreous, yellow speckled, and marbled with fawn colour, marked with the same colour round the stalk, and extensively coloured with reddish-brown on the

side turned to the sun. Flesh, white, pretty fine grained, rather brittle, juicy, and hard. Juice, very abundant, sugary, slightly sharp, with a perfume which is as pleasant as it is marked. Season, from the middle of November to the latter end of January, and as an exception lasting until February and March. Quality, first-rate.

**HISTORY.**—In the edition of the "Abrégé des Bons Fruits" of 1675, the famous pomologist, Merlet, calls this fruit Poire de Chaumontel, and states it was raised from a wilding covered with thorns, a description which he completes fifteen years later on by telling us that the Chaumontel Pear, or Bezi de Chaumontel, which grows in the neighbourhood of Luzarches, is the offspring of a wilding grown at Chaumontel some years previously. This story is confirmed by Duhamel, who describes the Bezi de Chaumontel as follows: The Pears which I describe here are natives of Chaumontel itself, and were given to me by the owner of the estate, who was the possessor of the first Bezi de Chaumontel Pear tree, which still grows on the self-same spot where the first pip was sown, about one hundred years since. In the present year (1765) it has produced a fine crop of splendid Pears ("Traité des Arbres Fruitiers," 1768). In 1859, M. Decaisne adds to the foregoing the following interesting note: M. Leflamand, who was mayor of Luzarches in 1857, and who had just reached his ninety-second year, told me that the old Chaumontel Pear tree described by Merlet, and belonging to M. d'Assily, councillor of the Cour des Aides, died during the memorable winter of 1789 ("Le Jardin Fruitier du Muséum"). The origin of this Pear is therefore quite clear, and goes back more than two centuries. Chaumontel, which is a commune of the department of the Seine-et-Oise, is situated in the neighbourhood of Chantilly.

**REMARKS.**—M. Merlet tells us that in 1675 he had eaten this Pear about Whitsuntide. At the present time it is otherwise, for the tree bears much more slowly, and it is with difficulty that we can obtain Chaumontel Pears up to February. Van Mons, who made a special study of this variety, makes the following remarks upon it in one of his works: The Bezi de Chaumontel ought to ripen very quickly if we wish to enjoy all the best qualities of this Pear. It is one of the most delicate Pears, but which, if it does not ripen before the cold weather sets in, it remains stationary and turns bitter. Patches of Moss begin to cover the skin, and the flesh becomes permeated with black specks ("Des Arbres Fruitiers," 1835). This Pear often attains a considerable size. At country fruit shows specimens have been met with weighing from 13½ oz. to 1 lb. each. Poiteau tells us that in 1846 he saw one which weighed nearly 2 lb. and measured 5 in. in height. In Paris, says M. Decaisne, their price varies from 10 fr. to 12 fr. per hundred in good seasons, and when they are of medium size, but when they are large and scarce they cost 1 fr. a-piece, especially in the middle of the winter. The following singular fact with regard to this Pear, which is well worthy of being noted, is mentioned by M. Bivort in his "Album de Pomologie," 1849: "Mr. Rivers, the well-known horticulturist, of Sawbridgeworth, near London, assures me," says the writer, "that the finest Chaumontel Pears are grown in the island of Jersey, and are exported to London, where they fetch very high prices." It would seem, according to this, that the soil of Jersey is particularly favourable to the growth of the Chaumontel, a supposition which receives full confirmation in the fact that the Jersey growers buy a large number of young Chaumontel Pear trees every year from the nurserymen of Angers.

**Beurre d'Arenberg.**—Gloux Morceau, Beurré d'Hardenpont d'Hiver, Glout Morceau, Gouluc Morceau de Cambron, Beurré d'Hardenpont de Cambron, Goulu Morceau, Beurré Lombard, Goulu Morceau de Cambron, Beurré de Cambron, Beurré de Kent, Glou Morceau de Cambron.

**DESCRIPTION OF THE TREE.**—Wood, very strong. Branches, exceedingly numerous, erect at the top of the branch, spread out at the base, very thick and very long, kneed, greyish green, with



numerous fine lenticular markings, the constricts being prominent. Eye, medium, ovoid, blunt, with the scales disjointed, downy, adherent to the upper part of the branch, and sometimes protruding like a spine from the other end. Leaves, dark green, elongated, elliptical, usually twisted, having the edges strongly indented, the stalk short and well grown. Fertility, remarkable.

**CULTURE.**—This tree being vigorous and hardy thrives just as well when grafted on a Quince as on a free stock. It develops very early, and the pyramids which it forms are so perfect that it would be difficult to find their superior.

**DESCRIPTION OF THE FRUIT.**—Size, large. Shape, oblong, swollen, knobbed, irregular, but frequently mis-shapen and much depressed on one side. Stalk, short, thick, straight or curved, often swollen at the extremities, inserted obliquely and eccentrically to the axis of the fruit in the centre of a large basin, the edges of which are extremely irregular. Eye, very open, large, with divisions that are almost foliated, placed in a narrow basin, which is, however, pretty deep, and surmounted with knobs, or with the sides rather flattened. Skin, light yellow with a slight green tinge, speckled with red, streaked with the same colour in the cavity of the eye, stained with brown about the stalk, and usually tinged with delicate pink on the side next to the sun. Flesh, white, fine grained, melting, juicy, almost free from grittiness. Juice, always very abundant, slightly acid, sugary, sometimes sharpish, with a most exquisite flavour, and delicately perfumed. Season, from November to the beginning of February, and sometimes, but very rarely, up to the end of March. Quality, first rate.

**HISTORY.**—The three names by which this once little grown Pear is now known to the English, Belgian, and French have been the source of a flood of errors. It has always been mistaken for a long time for the Beurré d'Hardenpont d'Automne, raised by Van Mons as well as for the Orpheline d'Enghien. Now-a-days, however, that it is extensively cultivated all over Europe, and documents proving its origin being abundant, it is not difficult to clear up these various doubts once for all. The first name bestowed upon it was that of its grower. Van Mons states this in 1825 in the fourth volume of the "Bulletin des Sciences Agricoles et Economiques," then publishing in Paris under the direction of Baron Férussac. He says, "Beurré d'Hardenpont d'Hiver.—This valuable Pear was first raised in Hainault about 100 years ago by the Ecclesiastical Councillor Hardenpont at his country house at Paniselle, near Mons." Its second name, Glout Morceau, which was at one time supposed to have been given to it in England, was, on the contrary, bestowed on it in Flanders before 1819 by Parmentier, the Burgomaster of Enghien, and a great amateur pomologist, who sent it labelled thus to the London Horticultural Society in 1820. In vol. v. for 1824 of the Transactions of this society the same fact is mentioned, and the following of an error in the spelling of the name was sent in 1826 to Dr. Lindley, who was then assistant secretary to the society, by M. Dumortier Rutteau, of Tournay, who says in a letter sent to that gentleman in 1826 (op. cit. vol. vii.), "the real orthography of the name of this Pear is Glout Morceau." This correction is in accordance with the spelling to be found in most of the best French glossaries. According to these authorities, the word *glout* comes from the Latin *gluto* or the Celtic *gluth*, words which both mean savoury, agreeable to the taste. In French, Glout Morceau, therefore, is equivalent to *glout friand*, a tasty morsel, a tid-bit; in fact, a term quite in accordance with the exquisite flavour of this delicious fruit. If we now seek for the reason why it was called by its third name, Beurré d'Arenberg, an appellation under which it is now known in France in consequence of its having borne it for the last sixty years, we have only to refer to M. Auguste Royer, a Belgian pomologist, who in his "Annales de Pomologie Belge et Etrangère," 1854, tells us that "This Pear, which first made its appearance in our orchards about 1759, was for a long time unknown to our French pomologists.

It was only towards 1806 that Louis Noisetette introduced it into France. During a visit that he paid about this period to the chateau of the Duc d'Arenberg, at Hévelé, near Louvain, he remarked several Pears which were hitherto unknown to him, and which seemed to him worthy of being included in his collections. No one was then able to tell him the name of this Pear (Beurré d'Hardenpont); Noisetette, therefore, thought proper to christen it himself, and he consequently gave it the name of Beurré d'Arenberg. These particulars were given to me by M. Noisetette himself." M. Auguste Royer is evidently perfect in this statement, seeing that in 1839 M. Noisetette in his "Jardin Fruitière" definitely states that he considers the Beurré d'Arenberg the most delicious of all the Pears with which he was acquainted, and that he had introduced it into France in 1806 from the gardens of the Duc d'Arenberg in Belgium.

**REMARKS.**—There is no resemblance between the Beurré d'Arenberg and the Beurré Duval, a Pear which ripens at the beginning of September; it is, therefore, a mistake on the part of M. du Breuil, who, in 1854, in his "Cours d'Arboriculture," makes the latter more synonymous with the former. It is generally believed that the Beurré d'Arenberg will not yield fruit after the month of January. This is another mistake, for in Anjou, where they frequently only begin to gather it for eating about the middle of November, we have had it in good condition up to March, as may be proved by the reports of the Horticultural Committee of the Department of the Maine-et-Loire. This fruit frequently attains considerable dimensions; for instance, at the horticultural exhibition held at Chartres in 1862 there was a specimen in the collection sent by M. Baubion, which weighed nearly 1 lb. 2 oz., but it is very seldom that they reach this weight.—"Dictionnaire de Pomologie."

**A selection of Apples.**—The following might suit "S. C." for succession if his soil is suitable: *Kitchen*—Early Julien, Duchess of Oldenburg, Loddington, Warner's King, Wellington, and Yorkshire Greening. *Dessert*—July Pippin, Summer Golden Pippin, Mabbott's Pearmain, Cox's Orange Pippin, Mannington Pearmain, and Sturmer. If more were required I should recommend for dessert Mr. Gladstone, Irish Peach, Worcester Pearmain, Ribston Pippin, Reinette du Canada, and Sam Young. For kitchen, Manks Codlin, Lord Suffield, Cox's Pomona, Blenheim Orange, New Hawthornden, Lord Derby, Annie Elizabeth, and the Deux Ans.—L. A. K., Langley.

**Grape nomenclature.**—In the account of the Crystal Palace Fruit and Flower Show (Sept. 9) a Grape named Gros Colmar is mentioned as forming one of several in more than one prize exhibit. Is this Grape the same as that mentioned at page 113, Vol. IX., of THE GARDEN as Gros Colman? and are both these variations misspellings of André Leroy's Gros Golman? and if so, which of the three is the correct designation? Here (S. Italy) Gros Golman (a black Grape) bears small bunches, large berries, very showy and thin skinned, having a great tendency to split open and rot, ripening late and badly, and having a coarse flavour. A Grape which with us far surpasses it is Blussard Blanc (a white Grape), rather of the Sweetwater type, of very vigorous growth, bearing magnificent broad shouldered tapering bunches, varying from 3 lb. to 4 lb., with large very juicy berries. This is of course in the open without any artificial treatment in the shape of thinning out berries, &c. Is it under general cultivation in England? I rather doubt it, as I cannot remember having seen it mentioned in any list of Grapes worth growing, and it has been a constant puzzle as to how Gros Colmar or Colman (if synonymous with Gros Golman) could be so prized and Blussard Blanc totally ignored.—**TUBEROSE.** [On referring to Leroy's catalogues that we happen to have beside us, we find there mentioned a Grape named Gros Golman, which, from the description given, is no doubt our Gros Colmar; we are inclined to believe, however, that in earlier issues the name was spelt Gros Colman,

as Mr. Rivers spelt it, who received it direct from Leroy. In some catalogues it is mentioned under the name of Gros Colmar, but which is the correct or original name we are unable to say. It is a large and handsome Grape, with a decidedly coarse flavour, except when highly ripened. The variety you mention named Blussard Blanc we do not know in this country, but should be glad to receive it if as good as described. Blussard Noir we have; it is small and inferior.]

**Fruit in North-east Norfolk.**—The fruit season of 1881 will be remembered as a season of "plenty" in this part of Norfolk, all small fruits having been most abundant and of excellent quality. I scarcely ever remember having seen Raspberries so plentiful or good. The Strawberry season was short, but abundant, and the fruit of good quality. Plums have been good, but not so prolific as I have known them to be. Pears are excellent, both as regards quality and quantity. There are no cracked or mildewed Pears to be seen; in fact, they have not been so good for at least ten years as they are this season. Apples, too, are most prolific and excellent in quality. I have never indeed seen a finer crop both as to quality and quantity. Wild fruits, too, of all kinds are plentiful; the Mountain Ash and the Hawthorns are simply beautiful from the amount of fruit they are bearing. Elder trees are laden with juicy berries. Blackberries, too, are plentiful, but do not ripen quickly on account of wet weather. Holly berries are abundant this year, and Briers are completely covered with scarlet pips. Filberts yield good crops, also Walnuts, Horse Chestnuts, and Acorns. Medlars, too, are plentiful. The foliage of all forest trees is most beautiful. Conifers, particularly Piceas, have made satisfactory growth.—E. SENDALL, *Barningham*.

**Beechwood Melon.**—During the past summer we have grown the old Beechwood Melon rather extensively, and I find that it is quite able to maintain its well-established popularity amongst many of the new sorts. The Beechwood I found true to its character, as I remember it to have been years ago. It is a hardy, good-constituted Melon, well adapted for frames or pits, setting well for a full crop, and swelling off to a good size fruits from 3 lb. to 4 lb., beautifully netted and of exquisite flavour. Among the newer sorts that we find bear out the character given them are William Tillery, green flesh, very good; Bailey's new variety, called The Squire, green fleshed, handsome fruit. Gilbert's netted Victory, that I had marked last year as A 1, was this season very small and not netted. I do not know if anyone else has had similar experience with it, for if so, it must have been crossed with some other variety, or some other substituted. Of established sorts that I find always good alike I may mention Dell's Hybrid, green fleshed; Easton Castle, green fleshed; Read's, scarlet fleshed, a first-rate cropper; Cox's Golden Gem, a handsome Melon, with whitish yellow flesh, very melting. I may state that for early Melons the season was all that could be desired to secure first-class flavour; but for late crops it has been just the reverse, hardly any sunshine, and thick heavy atmosphere.—J. G.

**Diseased Vines.**—Something has gone wrong with my Vines. They were planted in March, April, and May, good healthy plants in an inside border, and had made from 1 ft. to 2 ft. of growth when planted. They made rapid progress up to the occurrence of the hot weather which we had. They are planted in two lean-to houses with a 24-ft. rafter. Two young Muscats have made wonderful growth—40 ft., with laterals 20 ft., girthing 1½ in. 6 ft. from the bottom. Muscat Hamburg grafted more, and these are at the east end of the house. Five other Muscats and one Foster's Seedling are as if scorched. They have made a good rod to the top of the house and more, and the wood is well ripened. All have kept their foliage from 5 ft. to 6 ft. good. I have a good crop of fine Grapes of Golden Queen and Alicante on old Vines in an outside border. These have healthy foliage and noble berries. In the second house, wherein are planted various sorts, all made



good growth, viz., over 21 ft. and fair rods. The are planted in an outside border. After getting the fruit off these I cut them down, and I have now rods from them nearly to the top of the house, but the foliage is poor. They have been grown from the first with top and bottom air admitted, but the leaves shrivel. The border is full of roots, and consists simply of turf, bones, and charcoal laid on sods placed over old bricks and mortar. The houses, which are new, are glazed with 21-oz. glass in panes 21x16. The wire trellis is 18 in. from the glass with a 2-ft. opening at bottom and 18 in. at top, but during the extreme heat the thermometer stood at 95° with all the air on possible. I shaded with newspaper, but it was a very poor makeshift. The hot weather, therefore, probably scorched the leaves, but I should be obliged by the opinion of some of your readers on the subject. I watered with water from the pump, but now I have plenty of soft water.—C. W.

**The Arundel Pears.**—For many years past the Pears at Arundel have been proverbially fine, but this season they have "surpassed" themselves. To particularise every variety would take much space. I therefore notice a few of the best: The place of honour must be given to Beurré Clairgeau, a pyramid of perfect shape, some 14 ft. high, and literally crowded with magnificent fruit, every one perfect both in shape and colour. I also noticed handsome pyramids of Marie Louise, Passe Colmar, and Thompson's Pear, all of good size and perfectly clear from speck or blemish. Duchesse d'Angoulême is grown largely—great trees of it loaded to the ground. These Pears, although fine for standards, do not come up to the French grown fruits; but on the south wall they attain such a size as to almost rival them.—R. GILBERT, *Burghley*.

## NOTES AND QUERIES—FRUIT GARDEN.

**The Ribston Pippin in Kent.**—Large and excellent specimens of this from Linton. The seasons may be averse to it, and never kinds may be pushing it out of favour, but the deterioration sometimes spoken of has no existence in fact.

**Best Peaches and Nectarines out of doors.**—*McL.*—For Peaches I recommend Royal George, Bellegarde, Violette Hative, Barrington, Stirling Castle, Walburton Admirable, and Late Admirable; for Nectarines, Murrey, Elruge, and Downton. The above kinds I have known for many years to bear fine crops of excellent fruit. M.

**Planting Vines.**—"J. B." need not hesitate to plant his vines between the front wall and the hot-water pipes. Air should not be admitted in front when too cold to go direct amongst the foliage. He will find it better to plant them as I have stated to provide for French Beans as advised by "M." W. R.

**Making a Vine border.**—Of what materials should a Vine border be made? Should it have concrete at the bottom? Is 2 ft. to 3 ft. deep enough? Can it be drained too much? I mean for ordinary Vines—not for Muscats. What is the best book on the Vine? I shall be very much obliged to any of your Vine-growing readers who will give me their opinion on these questions.—R. A.

**Vines between pipes and front wall.**—In small or medium-sized houses it is usual to secure the greatest possible length of rafter by planting close to the front wall. In large houses the pipes may be placed within a few inches of the wall, and the Vines can then be planted 1 ft. or more away from them. All other conditions being right, the position of the Vine matters little, provided it is protected from severe frost in winter and intense sun heat in summer.—W. C.

**Peaches dropping.**—Can anyone inform me why the October Peaches, grown in a house of the best modern construction, should fall off, quite soft, but only half their size, and bad in flavour? The tree is an excellent one. Can it be want of sun?—*SUBSCRIBER*.

[The lack of flavour might be attributable to want of sun, but not the premature dropping of the fruit; most probably the evil has been caused from the border having been too dry during the season of growth, but in that case the foliage of the tree would also have suffered. If such is not the fact, then the opposite condition, viz., too wet a border, is at the root of the evil.—W. W.]

## LUCOMBE & PINCE'S NURSERY, EXETER.

THE CAMELLIA HOUSE in this nursery is a large span-roofed structure with side walls 18 ft. or 20 ft. high, clothed with a dense growth of Camellias from top to bottom. In the centre is a wide bed of soil in which are planted large standard trees, and round this centre bed runs a walk all round the house. Between the walk and the wall are three rows of 4-in. pipes to furnish heat. The plants in the centre nearly reach the top of the house—in fact, quite trees. All are in robust health and well set with flower buds, ready in some cases to burst open. In the Christmas week about £100 worth of flowers are cut from this house, and altogether it yields about £400 worth of flowers every season. At each end is a plant of *Luculia gratissima* doing remarkably well, and I am told it flowers profusely every year.

**ROSE HOUSES.**—Tea Roses are grown here for their flowers in long, span-roof pits, their roots being in a bed of soil and the branches trained to wires under the roof in the way in which Vines are trained. When I saw them the lights were off, and had apparently been so for some time with the view of ripening the growth, which was hard and the buds well clumped up; under such management it was not difficult to understand that there would be plenty of flowers with the aid of artificial heat from Christmas onwards.

**STOVE AND OTHER INDOOR PLANTS.**—The specimen *Crotons* are wonderful examples of successful culture. The *Vallotas*, too, are large and handsome. There are also some fine *Gleichenias*. The collection of Ferns is indeed altogether large and in fine condition. *Lapageria alba* was, when I saw it the other day, flowering well; and the stock of *Dipladenia Brearleyana* is both strong and numerous. This appears to be taking the place of all others. *Eucharis amazonica* is quietly resting in order that it may furnish flowers for Christmas and Easter. *Poinsettias* are largely grown, as are also *Orchids*. The *Calanthes* are particularly good. In cool houses there is a large stock of plants of all descriptions. That devoted to small specimen *Azaleas* contains a fine collection of all the best varieties in what is called quarter specimen size, and well set with buds.

**OUTDOOR DEPARTMENT.**—In this any lover of plants and trees may spend a profitable hour or two. The *Coniferae*, for which this nursery has so long been famous, are still a strong feature, the climate and soil evidently suiting the majority of the best kinds. The rockery here improves with age. It is truly English, both in style and planting. The quarters of fruit trees are just what might be expected in the favoured climate of Devonshire; they are not overcrowded, each tree having room for proper development, and clean, well-ripened growth is the result. Pot Vines, both for fruiting and planting, are largely grown. Roses, too, as a matter of course, are in large numbers both standards and dwarfs. *Devoniensis* is still largely cultivated here; nor are hardy herbaceous plants neglected, and the collection of show and fancy *Pansies* is very large, indeed, it is an acknowledged fact that in this nursery may be found the most complete collection of this class of plants in the west of England. J. C. C.

**Ashes in the garden.**—Washed ashes have an especial value on sandy soils, and have a marked effect on Onions, Potatoes, and root crops. Their value is lasting, and the results of a liberal application will be noticed for years. Unleached (unwashed) ashes are especially effective when applied broadcast over Onions partly grown; in fact, they form one of the most valuable special manures for this crop, and are worth for this purpose twice the amount paid by soap-makers. For all garden crops they are valuable, Potatoes, Turnips, Beets, and Peas deriving the most benefit next to Onions.—A. B.

**Superphosphate of lime.**—Superphosphate of lime produces a very quick effect, and besides the fertility it adds to a soil, the rapid de-

velopment it ensures to plant life enables the roots to lay hold of much food they would not otherwise procure. In the garden it is of especial value to hasten growth while plants are still small and unable to reach coarser manures, and also to touch up and bring forward any portions of crops which seem to need further help. While depending chiefly on stable and green manures, yet we always find profitable use for more or less superphosphate. J. R.

## THE FLOWER GARDEN.

### HERBACEOUS PLANTS AT BIRMINGHAM.

MANY fine hardy herbaceous plants are now in flower in the Chad Valley Nurseries, and are daily the admiration of visitors, who rejoice to see these old-fashioned plants once more gaining favour with the general public. We have not altogether had a successful season's bloom, a circumstance due in a great measure to the long continued drought, during which the plants made but little progress in our light soil. The recent heavy rains, however (now unfortunately too frequent), soon started them into vigorous growth, and since then we have had abundance of bloom. Among the more conspicuous may be mentioned some large beds of double *Potentillas*, which have flowered profusely for the past three months, many of them being exceptionally fine, and varying in colour from deep canary yellow to orange, scarlet, deep crimson, violet, and other shades. Double flowered *Pyrethrums* are in bloom for the second time this season. They are of many shades—rose, carmine, and white predominating, sulphur and yellow hues appearing less frequently. *Anemone Honore Jobert* is very fine, and most useful at this season for cutting purposes; its variety elegans is a very pleasing shade of soft rose, and a very attractive plant. *Coreopsis lanceolata* is another plant which is always in flower. *Gaillardias* have been very fine, especially *G. grandiflora maxima*, many of the individual blooms measuring  $4\frac{1}{2}$  in. in diameter. This is without doubt the finest form at present in cultivation, and deserving a place in every collection. *Chrysanthemum* (*Leucanthemum*) *maximum*, a good autumn-flowering composite, has failed here this season; not one perfect bloom has opened on a specimen of it measuring 2 ft. 6 in. across. *Helenium autumnale* has, and still is, producing abundance of soft yellow flowers. *Geum coccineum* fl.-pl. is just going out of bloom. *Gypsophila paniculata* has been most attractive, and is much admired; it is largely used here in bouquet making, and is a decided acquisition. *Rudbeckia Newmani* is a striking plant, and here compact in growth; its flowers are orange-yellow, with a black disc. *R. purpurea grandiflora* is still in flower. Among *Rudbeckias* to be admired for their handsome foliage may be mentioned *R. laciniata*, which, when given plenty of room, forms a perfect pyramid of jagged foliage. It grows to a height of 5 ft. *Lychnis vespertina* fl.-pl. is also a most welcome plant, now finely in flower: *Asters*, too, form an interesting group, and amongst those in flower may be mentioned *Amellus*, *Mdme. Soyneuse*, and a species from Texas closely allied to the preceding, also *dumosus*, *Shorti*, and others. A few stray flowers are open on plants of *Gentiana acaulis*, and *Hyacinthus candicans* is slowly developing its last blooms. *Harpalum rigidum* (*Viguiera rigida*) has been very fine. *Tiger Lilies*, single and double, still continue to produce flowers, as does likewise *Delphinium nudicaule*. Several beds of herbaceous *Phloxes* from spring cuttings are also now flowering freely. *Lobelia Queen Victoria* is past its best, but it has been very good indeed. *Papaver umbrosum*, a showy and brilliantly coloured annual, has made a grand display. *Polygonum capitatum*, also an annual, is well adapted for massing on rockwork, where it flowers freely about this season. J.

*Parnassia asarifolia*.—We have good blooms of this from Miss Owen, who speaks well of it as an autumn flowering bog plant.



**Finely flowered *Lilium auratum*.**—Last autumn I gave some account of a plant of this Lily which I had in bloom. It broke early and strongly in the spring this year, and now it has 14 flowering stems, with blooms varying from 2 to 31 each, and all fine, the total number being 185. On the 24th ult. the plant had ninety-seven fully expanded blooms on it—a grand sight. The tallest stem is about 7 ft. high. It bears up against the continued wet weather in a very remarkable manner.—E. SENDALL, *Barningham*.

***Viola pedata bicolor*.**—This is one of the most beautiful plants now in flower at the Hale Farm Nurseries, Tottenham—the gem of the genus, in fact. The typical Bird's-foot Violet is pretty enough, but this two-coloured variety greatly surpasses it in the flowers, which are above 1 in. across; the two upper petals are of a deep violet, overlaid with a velvety surface like that of a Pansy, and the other petals are a pale mauve. The typical form has the flowers smaller and of a pale or deep lilac, purple, or blue. The leaves are deeply cleft into from three to five divisions, which are again subdivided—a circumstance which adds much to the graceful look of



*Viola pedata bicolor* (from The Cottage, Eastcott).

the plant. Both the type and the variety are natives of North America, but the latter is rare even in its native haunts. It is grown at Tottenham on the low parts of the rock garden.—W. G.

***Agapanthus maximus*.**—This is very superior to the old sort, the flower-stems growing taller, and the flowers larger and deeper in colour with a pale stripe in each petal. These plants should be much more frequently seen than they now are. When admiring some large beds of *Calceolaria amplexicaulis* on the Grass at Glasnevin the other day, and charming indeed they were—masses of soft beautiful yellow, it occurred to me that it is open to someone to make a sensation by dotting a big bed over with *Agapanthus* and planting amongst it this *Calceolaria*; it will be very beautiful.—T. SMITH.

**Culture of certain flowers.**—Will you kindly tell me where *Tricyrtis hirta*, *Ophelia nervosa*, *Francoa sonchifolia*, and *Viola pedata* are natives of? and also the way to cultivate them?—E. C. [*Tricyrtis hirta*: of the Himalayas open

border, moist, and rather shady, heavy soil. *Francoa sonchifolia*: Chili; sheltered border or rockery in partial shade, good loamy soil; grows freely as a window plant. *Viola pedata*: North America; moist, peaty, or sandy soil in a rather shaded spot in border or rock garden. *Ophelia nervosa*, an East Indian plant of the Gentian family, not much known in cultivation.—F.

***Colchicum speciosum*.**—How glorious this plant is just now. A large patch in the sunshine looks just like rose-coloured Tulips; the white centres also help to show it up to advantage. I heard the other day that there is a better than it. I should very much like to come across those meadows mentioned by "J. G." last week, where this plant has become a nuisance, and cannot be got rid of. If the locality once became known, this difficulty would, I fear, soon disappear; but, perhaps he had in his mind the common species.—T. SMITH.

***Calliopsis*.**—These are still gay when other plants are on the wane, and for massing or beds near town nothing can be so much depended upon to yield satisfactory results. There are two which have become favourites of mine from their freedom in flowering and good dwarf habit, and which I can confidently commend, viz., *C. Drummondii*, with yellow flowers and purple discs, and *C. coronato*, with yellow flowers. Some of the dark kinds are desirable on account of their colour, but are generally much taller in growth.—J. S. T.

***Cactus Dahlia*.**—I cannot divest myself of an idea that 20 years or more ago there was something very like this quite common in the neighbourhood of Birmingham; in fact, so far as my memory serves, it was the same plant, colour, shape, and habit. It would be curious should it turn out to have come from the midlands instead of Mexico. Perhaps the plant I allude to still exists in the locality, or someone who knew the plant will confirm what I say, or prove the contrary.—T. SMITH.

## NOTES AND QUERIES—FLOWER GARDEN.

***Eccheandia terniflora*.**—Can any of your readers supply me with a plant of this? I used to grow and seed it freely, but lost it several years ago.—H. HARPUR CREWE, *Drayton-Beauchamp Rectory, Tring*.

**Packing Carnations.**—I intend visiting Canada next spring, and wish to take some Carnations with me. Can any of the readers of THE GARDEN inform me how I can pack them in as small a compass as possible to take them over in safety?—JOSEPH LAURIE, 18, *Westbourne Park Road, Baywater*.

**Plantain Lilies.**—What is the best time for increasing by division the Funkias or Plantain Lilies? and what green-leaved kind is recommended for edging a moderate sized bed? Nichol's would be too large for my purpose.—J. H. W. THOMAS.

***Colchicum speciosum*.**—I presume that the note of "J. G." under this head (p. 325), refers to *C. autumnale*; otherwise I should be glad to negotiate with the owner of the meadows where this grand flower has become a nuisance for the removal of some of the bulbs eradicated as a "troublesome pest."—C. WOLLEY DOD.

***Rudbeckia Newmanii*.**—In the GARDEN (p. 326) this *Rudbeckia* is referred to as rather loose and straggling, generally attaining a height over 3 ft.; my experience of this is very different; my plants of *R. Newmanii* form dense cushions of leaves from which spring an abundance of orange-yellow flowers, and they seldom attain and never exceed 2 ft. in height. My plants may possibly be identical with *R. virginiana* also alluded to in THE GARDEN (p. 326).—E. JENKINS.

**Are Tuberous Begonias fertilised naturally?** Recently, standing before some fine specimens of both erect and drooping Tuberous Begonias with one of our most intelligent nurserymen, I asked him this question, pointing to the plants, and repeating, "Do you see any provision of Nature, except wind, bees, or artificial agencies, by which the pollen of the male plant can reach the stigma of the female and produce fertile seed?" His answer was in the negative. Would some reader who has observed the matter closely say, if to make certain of fertile or hybridised seed, artificial agencies must be employed? It can be readily seen how much depends on the decision.—W. J. M., *Clonmel*.

## THE INDOOR GARDEN.

### LILIES IN POTS.

I AM afraid that amateur gardeners who have the convenience of a small greenhouse do not grow Lilies so much as they ought to do, and especially the varieties of *L. speciosum*, or *lancifolium*, as it is commonly termed. It is easy to cultivate this type, and the return they make, if well managed, is in every respect satisfactory. Of *L. speciosum* we have four varieties, viz., *album*, pure white; *punctatum*, white, flushed with rose, a somewhat scarce but very pleasant form; *roseum*, white, spotted with rose; and *rubrum*, white, heavily flushed and spotted with crimson. The two last can scarcely be termed distinct, as it appears to be the practice to mark all the dark coloured varieties found among the roseums and send them to this country under the name of *rubrum*. The variety *album* is a singularly chaste and beautiful Lily. I have several plants in flower just now, grown from single bulbs in pots, that are producing several flowers, each of the purest white; the major part of the flowers have orange brown anthers, but one plant in particular has flowers with pure golden anthers, which is a very pleasing combination. I think that the white *lancifolium* and *L. longiflorum* are the two most charming Lilies an amateur can cultivate; the last for early blooming, the former for late blooming, with the fragrant *L. auratum* to come between them. Yet many amateurs are found complaining that they cannot grow these charming Lilies in a satisfactory manner; that they fail to grow, the bulb rots, or they make a good growth and fail to flower, and that they are killed in the winter. There are difficulties to be overcome, but they can be overcome by diligent attention and painstaking.

My practice is to flower the Lilies in an ordinary greenhouse, and when they have done flowering leave them in the greenhouse to mature their growth; then cut away a portion of it in early autumn, and place the pots in a cold frame for the winter, covering them up with leaves and Cocoa fibre when frosts sets in. It is during the winter that many plants are killed for want of adequate protection through lack of house room; in some instances frequently, it is to be feared, from lack of accommodation. In spring, just as the growth commences, I carefully repot, taking care not to overdo this, and potting sufficiently deep, so that a little fresh soil could be added when the roots thrown out at the base of the flower-stalk commences to form. When they have made a growth of 6 in., the plants are carried to the greenhouse, and encouraged to make a vigorous growth. This is a simple, but in my own case, successful routine of practice. I do not repot, but when the plants are fully established they are helped by occasionally dusting the surface with Clay's Fertiliser. Some adopt the practice of placing the bulb in the first instance in the smallest possible pot, and then to shift into larger pots as the plants progress in size, and the flower-buds appear, and then no further shifts should be given.

The soil I use is made up of some rich yellow fibry loam, leaf mould, peat, Cocoa fibre, sand, and some decomposed manure, taking care that the latter contains no insects likely to be injurious to the bulbs. The presence of grubs in the pots will often destroy a good bulb or two.

My selection, it may be remarked, is a somewhat limited one. It is so, but it can be extended with advantage. Add the early flowering varieties of *L. Thunbergianum*, of which there are a few. They are dwarf in habit, and produce extremely showy, handsome flowers on bold trusses. Other choice kinds can also be added as it is desired to extend the collection, but those named will be found ample to commence with. Notwithstanding so much has been written in praise of the culture of Lilies in pots, their cultivation in this form extends but slowly. If anyone wishes conclusive evidence on this point let them take the many flower shows, in the schedules of which prizes are offered for Lilies in pots. How seldom does a respectable collection put in appearance at the



season of the year when there should be no difficulty in having a group of four or six varieties. They are always objects of great interest at a flower show when presented in respectable form. R. D.

#### PERPETUAL FLOWERING CARNATIONS.

THE remark has frequently been made in THE GARDEN that fine old-fashioned flowers, like the Clove Carnation, are not grown in anything like the quantities they deserve to be, which is quite true; for taking gardens collectively as they exist throughout the country, it is a question if in one-half of them so much as a single plant of these flagrant flowers is to be met with. If this is correct as regards the outdoor cultivation of Carnations, it is even more so in the case of perpetual, flowering kinds cultivated in pots. Though there is no novelty about them, or any difficulty in their management, still it is only comparatively few people who have attempted their growth. Why it would be difficult to say, for they are easily propagated, and what is a matter of the greatest importance in these times, when an uninterrupted supply of sweet-smelling flowers that will last well when cut have to be provided, they are easily grown. This is not all, moreover, that can be said in their favour; unlike many plants that are forced so as to come in flower during the winter and early spring months, they rarely, if ever, come in faster than they are wanted, for the individual flowers on each spike which a plant produces come in gradually in succession, which, combined with the time they keep in good condition, enables the grower to use, if required, every bloom that is produced. In addition to this these perpetual-flowering Carnations are amongst the most manageable of plants in their time of blooming, as they can be either hastened on by a little additional warmth or kept back by cooler treatment. With a sufficient stock and the means of giving the plants the comparatively little artificial heat they require to force them into bloom in winter and early spring, they can be had in flower all but continuously; but to do this with certainty it is well to have always in hand both old and young plants, *i.e.*, to keep through the second winter the plants which were propagated the spring but one previous, and in addition to have young stock struck later in the season than that struck early in spring. The little room they occupy compared with many plants that give a glut of flowers for a time and then cease to bloom, is a point in their favour, and so far as endurance is concerned the advantages are all on the side of the Carnations. The robust, free-growing, and equally free-flowering habit of some of the newer varieties and the brilliancy of the higher coloured kinds place them much in advance of the older sorts. T. BAINES.

**Tydeas.**—These accommodating plants may be had in blossom at almost any season, but they are now especially useful for brightening up our stoves when flowering subjects therein are scarce. With this end in view, when started in the spring they should be kept cool, and given ordinary greenhouse treatment. During the summer they will make stout sturdy growth full of flower buds ready to open as soon as introduced into a little warmth. A light soil, consisting of about equal parts fibrous loam and leaf-mould, with the addition of a little sand, suits them perfectly, and when growing they may also be assisted with weak manure water.—H. P.

**Training Allamandas.**—"B." (p. 332) does not seem to be acquainted with any other way of training these beautiful plants except on a roof or twisted round a balloon. My idea is that they look much better, bush fashion, with a stake to each main shoot reaching to about two-thirds of its length, the ends being allowed to droop slightly from that point. I have a plant of A. Schottii in an 11-in. pot, with twelve main shoots about 4 ft. 6 in. high, and I counted seventy-seven fully expanded blooms on it this morning. It has been in full

bloom since the early part of June, and seems likely to keep on till Christmas. Is it possible that there can be two varieties of this plant, one more floriferous than the other? I am told that the parent of my plant is almost continually in bloom.—JOHN C. TALLACK, *Prideaux Place, Padstow.*

**Crape Myrtles** (*Lagerstroemias*).—Mr. Saul, perhaps, may not be aware that there is another fine Crape Myrtle besides those to which he alludes. I had it in India. It is very dwarf, small leaved like *L. indica*, but the flowers are almost as large as those of *L. regina*, and of the same colour. The specific name of this I never learnt. When in Florence I grew some young plants from imported seed of *L. indica*, and the varieties in the leaf showed that some interesting sorts might be got by growing from seed. In Florence I saw in the open trees of *L. indica* (pink), with stems as thick as a man's leg. I think this kind is harder than horticulturists think. In the Royal Botanic Garden, Regent's Park, I saw it kept in a hot-house. Certainly they never think of doing so in Florence, where the frost is often severe.—E. B.

**Flue heating.**—When I was in Florence I found that stoves and propagating houses were heated by the flue of the furnace, and not by hot-water pipes. The furnace is placed immediately outside a lean-to house; the flue passes under the propagating earth in front, and is turned back under the back propagating earth, and comes out the same end of the house at which it went in, only on the opposite side of the entrance. In short, the flue, which is of sheet iron, was U shaped, the entrance into the house being between the legs of the U. In other houses, I have seen only one branch of the U under the earth for forcing or propagating, and the other branch slanted up the back wall to heat the atmosphere. The dampness of the soil made the atmosphere sufficiently moist for all purposes. I should like to have a similar arrangement in Bournemouth, as it is cheap. Can anyone mention any objection to this system?—E. B.

**Brahea species.**—In a former catalogue I mentioned that this Palm had been sent me by a correspondent in California, who stated that, in his opinion, it was not known in cultivation. The seed was procured from Lower California, so it was said. For several years I have grown this plant, and now I do not hesitate to say that of all the fan-leaved Palms I know none are finer than this. It is perfectly at home in the Camellia house, keeping its lovely bright green colour all the winter, and pushing forth vigorous growth in the spring. Its large fan-leaves are hung with long white threads, just as in the case of *Pritchardia filifera*, but its constitution is much better than that of this much admired plant. Is this Palm, described as above by Mr. George Such, of South Amboy, New Jersey, in a recent catalogue, known to any of your readers?—H. H. V.

**Glasshouses and the Building Act.**—I should be glad if any of your readers would give me a little information respecting nurserymen's liabilities under the Metropolitan Building Act. I have erected at Putney a lean-to house, 100 ft. long, and have had two visits from the district surveyor, who has sent in an account for 10s. The site is a considerable distance from any building, street, or alley, and it seems to me a great stretch of the intention of the Building Act to bring a building of this kind under the law.—W. J.

**Bougainvillea culture.**—Can a *Bougainvillea glabra* be grown in a cool, or slightly heated greenhouse? or is stove temperature necessary for it? I am told the latter is now the case, and yet I have a perfect recollection of a large plant of it against the wall of a very moderately warm greenhouse at Glasnevin 10 or 12 years ago.—C. L.

**Action of glass on light.**—An American photographer makes some remarks on the value of different sorts of glass for the lights of photographic studios which may be usefully borne in mind as regards plant houses. All glass, he says, even the clearest and most colourless, is found to cut off some of the chemical (or actinic) power of sunlight; obscuring the glass by enamelling or grinding the surface causes a larger portion of the actinic power to be thus intercepted; the accumulation of dirt on glass will intercept nearly as much of the chemical power of sunlight as grinding or enamelling it.

## ORCHIDS.

**Clay slabs for Orchid growing.**—For years I have been using hard-burnt clay slabs in the growing of many varieties of Orchids, and the plants thrive on them remarkably well. These clay slabs are of a rich cream colour, and roughened to represent bark. Being thoroughly burnt, no root-destroying fungus is ever found on them. The slabs vary in size, being from about 5 in. in diameter up to 10 in. or more.—GEORGE SUCH, *South Amboy, New Jersey.*

**Orchid Culture.**—It was supposed, some years ago, that to grow Orchids well, houses of special construction were needed, and also the services of a learned cultivator; but now it is found that the cultivation of many of these wonderfully attractive plants is attended with hardly any more difficulty than the growing of ordinary greenhouse stock. In partial proof of this, I may mention that some of the finest cool Orchids ever flowered in this country were grown winter and summer in my Camellia-house for several years, most of them being in perfect health during the whole time. Such Orchids as *Aerides*, *Vandas*, and others requiring high temperature, thrive in the company of *Marantas* and other hot-house plants, growing and flowering finely under the same atmospheric conditions.—GEORGE SUCH, *South Amboy, New Zealand.*

**Orchids at Glasnevin.**—Among the Orchids in flower at the Glasnevin Botanic Gardens just now the following are very noteworthy, *viz.*: A particularly fine and almost ever flowering variety of *Vanda tricolor*, *Odontoglossum grande*, profusely flowered *O. hastilabium* (fine), *Saccolabium Blumei*, *Oncidium Wentworthianum*, *O. ornithorhynchum*, the useful autumn-flowering *Cattleya Loddigesi*, several plants of *Cypripedium Stonei* (fine), the pretty and continuous flowering *C. Sedeni*, and various others; the curious-tailed *Angraecum caudatum*, *Phalaenopsis Luddeemanniana*, and notably a very pretty little novelty in the shape of an unnamed *Cælogyne* from Burmah. The collection of Orchids is greatly increasing in extent, particularly in respect of that interesting section going under the name of cool Orchids. The health and condition of all divisions of the tribe are, we are glad to say, all that could be desired.—*Irish Farmers' Gazette.*

## GARDEN DESTROYERS.

**Plant-eating beetles.**—"W. E. G." in THE GARDEN of the 3rd of September, in a paragraph headed "Identification of a hitherto unknown enemy," mentions that larvæ which had attacked the tubers of his *Begonias*, and which were also very destructive to *Primulas*, had at length been identified by a Dr. Roussel, of the French navy, who states that the insect is the larvæ of *Otiorynchus sulcatus*. Why there should have been any difficulty in naming this well-known, and alas too common, insect is not easily understood. This insect is most destructive both as a grub and beetle. I saw a *Dracena* a few weeks since in a drawing-room, the foliage of which was much injured by the notches which the beetle had eaten in the leaves. Slugs and insects had been looked for in vain. I suggested searching the plant after dark, and the first evening this was done a specimen of the beetle was easily found. The grubs destroy the roots of various plants and are particularly fond of those with tuberous or fleshy roots. Both the grub and beetle were figured in THE GARDEN of May 3, 1879.—G. S. S.

**Cockroaches.**—If "W. A. S." will get a square tin, sprinkle a little oatmeal at the bottom of it, put in it a few live cockroaches, and place it in their principal haunts either sunk to the edge or with a made run, he will find them increase daily, when they can be destroyed with boiling water. I have had 3 in. deep of live cockroaches in at once. The secret is to put a few live ones in to start them.—JAMES SMITH, *Waterdale.*



—We have done more to eradicate cockroaches by the following plan than by any other. In a smooth flat-bottomed basin we put in the bottom  $\frac{1}{2}$  in. of water, and in the middle a lump of bread as an island; this we place near their haunts. Pieces of lath or other stiff material are laid round the outside sloping from the floor to the edge of the basin. Attracted by the bread they climb up there and drop into the basin. We have frequently in the mornings found over 100 thus captured; and whereas we used to be swarmed with cockroaches it is now rare to see one.—A. M.

**The Tomato as an insecticide.**—Some years ago we heard of the Tomato being an insecticide, and, with a view to test its efficacy as such, hung a number of leaves amongst the branches of Peach trees which were badly affected with green-fly. Not only did the cure recommended have no effect, but we found a few of the Tomato leaves themselves, on cutting them from the plants, infested, though not to a great extent, with green-fly. This would seem to indicate its uselessness in a raw state at least, but it is satisfactory to learn that an infusion of the leaves has proved effectual.—J. M. G.

**Ants' nests** (p. 363).—These are easily removed from any place where vegetation is not in the way, by a good sprinkling of petroleum. When amongst grass or other vegetation, a good dose of liquid manure from the stable will remove them. I repeat the dose three or four days together, and see no more of them.—JAMES SMITH, *Waterdale*.

## SEASONABLE WORK.

### FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Hardy fruit.**—By this time the ingathering of nearly all kinds of fruit will have been brought to a close, and the next important step will be the proper storing away upon the shelves until it is wanted for use. In the arrangement of the different kinds of Apples it is a good plan to place all the late keepers upon the highest and most out of the way shelves, and those intended for autumn use nearest to the hand and eye. Where space admits keeping Apples should not be laid more than one or two layers thick, but it is much easier to give this advice than it is to practice it, and when good fruit seasons were frequent we used to find it necessary to lay them in shallow baskets placed on a dry, boarded floor where they took the usual sweat and kept well until space could be found. The great points in the management of Apples and Pears are careful handling, gathering when the trees are quite dry, and storing in a dry, cool, well-ventilated room, in which the temperature is not easily affected by external changes. Advantages should now be taken of dry, open weather for getting all lifting, planting, and re-arrangement of fruit trees carried out before the earth loses its warmth, and the soil becomes wet and plastic. New roots will then be formed, and the trees will be less liable to be affected by drought than when this kind of work is put off until after the turn of the year. When trees are wrenched out of the ground in a nursery and sent a long distance the buds should be well up before they are disturbed, but the removal of a well-managed tree from one part of a garden to another is a very different affair, as roots, delicate fibres, and leaves are kept moist until the operation is made complete.

**Strawberries and Raspberries.**—The former having been divested of runners, and the latter of old canes, immediately after the crop was over, will now take a good dressing of rotten manure or heavy loam from an old pasture, enriched with nightsoil or liquid manure from the tank. Raspberries enjoy a well-drained, shady border where the fruit is fully exposed to the sun. They also revel in a lighter dressing than is usually given to Strawberries, but the treatment of the roots of the two should be precisely the same in every respect—that is to say, spade or fork should never be put into the ground from the time the beds are planted until they are broken up. Water should be given abundantly in dry

seasons, and the annual mulching should be laid on in time for the autumn rains to wash it into the roots.

**Melons.**—The Melon season now drawing to a close has been very satisfactory, the quality of the fruit having been much better than we have seen it for the last five years. With a continuance of fine weather, the late crop now ripening or approaching that stage will be good, at least where the plants are in pots and have plenty of bottom heat, but where the latter is sluggish, it will be unreasonable to expect high flavour. To secure flavour the foliage must be kept clean, healthy, and thin enough to admit of the free passage of light and sunshine, and the glass may be washed inside and out with warm water on a fine mild morning. Gradually reduce atmospheric moisture, also the supply of water to the roots, and keep up a constant circulation of dry, warm air, which should pass over the pipes before it comes in contact with the foliage. Melons in pits and frames in which the heat is now rapidly declining may be cut and removed to a Pine stove to finish off as soon as they show signs of changing for ripening, but it will not be advisable to remove them from the plants before this stage has been reached.

**Peaches and Nectarines.**—By this time the latest Peaches will have been gathered, and no time must be lost in getting all fruit-bearing wood removed from the trees, as late kinds which have been retarded will require all the sun and light that can be given to them. If infested with insects of any kind, ply the syringe freely, but guard against getting unheated houses wet and sloppy. Ventilate abundantly at all times and give the trees the benefit of the best and only ripening agent, warmth, by shutting up for a few hours on fine sunny days. If the houses are heated, fire heat can of course be applied until this important end is attained. The early house from which ripe Peaches are expected in May may be pruned and cleansed at once. The wood should be carefully washed with strong soap water, and when quite dry the usual composition may be applied if necessary; but unless the trees have been infested with scale, the barbarous practice of closing the pores and enveloping the buds in clay and lime is best left alone. For the last few years we have washed infested trees twice over with Gishurst compound, 12 oz. to the gallon, and find scale is less troublesome than when we washed once and painted afterwards. Get all root pruning and top-dressing finished, and prepare stations for large trees which have to be taken in from open walls. If healthy young trees are lifted every second year until they are wanted for forcing they may be transferred to the houses as soon as the fruit is gathered.

### PLANT HOUSES.

T. BAINES, SOUTHGATE.

**Stove.**—Such stove plants as have been in greenhouses and conservatories during the summer should, if not already done, now be placed again in the stove, for though there are many plants of the less tender kinds that might not at once show their inability to bear a low temperature, still injury may be inflicted that will not make itself apparent until so much harm is done that it cannot afterwards be repaired. This remark does not apply wholly to flowering plants, but also to the less hardy species of Palms, Caladiums, Dracænas, Aralias, and others of a similar character. The drier condition of the atmosphere kept up for some time now with a view to assist maturation will have helped red spider and thrips to increase, means should therefore be taken to extirpate them, especially in the case of plants of an ever-green character, for if the leaves of such are damaged there is no possibility of remedying the mischief; this refers to Crotons, Dracænas, Alocasias, and similar plants.

**Climbers.**—Any of these that were encouraged in summer to cover the roof with the view of improving the appearance of the house should,

where at all crowded, be well cut in; this will be absolutely necessary where the house has to be used for forcing winter flowers, as these need all the light that can be given them. In all cases where climbers are affected with insects advantage should be taken while their tops are denuded of all tender growth to dip their stems in a stronger solution of insecticide than the soft shoots and tender foliage would bear.

**Pandanus.**—Where there are large plants of any of the smaller growing species that in their younger stages are so useful for table decoration and similar purposes they will usually be found to have made during the summer more or less suckers, and if these are taken off now and put singly in small pots in a genial heat they will form roots and get established before spring, when there is usually a press of work and not too much room for propagating the numbers of plants that then demand attention in this way.

**Coleus, Torenias, Peperomias, Cissus, and Fittonias.**—If cuttings of these are now put in they will soon form roots and be in readiness for potting off early. It is always well to have a sufficient young stock of such plants in hand, so that if any accident befalls the larger examples there will be enough to take their place. When rooted they may be either put singly in small pots or allowed to stand until after the turn of the days in a state of semi-rest in the cutting pots. Another advantage in having young stock of these and similar quick-growing things in hand is that any old plants for which there is a difficulty in finding room may be discarded at once.

**Greenhouse.**—All plants liable to injury from frost should at once be housed, even in the south of the kingdom. It is much better to do this leisurely, setting each section in the places best adapted to their well-being, than to put off getting them in until the absolute presence of a low temperature necessitates the work being done hurriedly. Every pot should be washed, and the plant it contains examined to see that it is free from insects or mildew, either of which if allowed to remain gives much trouble afterwards. Aphides may now be destroyed by fumigation much more effectually than in spring, as the foliage being well matured, the tobacco fumes may be used stronger than at other seasons. A second or even a third smoking is often needed. Thrips, red spider, and scale can be best destroyed by dipping and washing with some or other of the insect killers now in use. Where mildew exists it is necessary to take means for its thorough destruction, for if ever so little of the parasite is present it will increase apace during the coming dull, damp months. Flowers of sulphur dusted on the infested foliage is the usual remedy. For applying it nothing equals the old-fashioned sulphur puff, by the use of which the dry powder can be made to reach every leaf however large the plant may be. But in the use of this remedy care should be taken that it does not get to the roots, otherwise death or serious injury will follow; to avoid this, each plant should be laid on its side, and when the dusting is complete all the sulphur that has settled on the surface of the soil ought to be carefully scraped off, otherwise it is certain to be washed down to the roots when the plants are watered. Such subjects as Heaths and the best varieties of other Cape, and also New Holland plants, ought to have the best positions in the houses in which they are to be wintered. Kalosanthes should be kept with their heads close to the glass, a situation which will have a marked influence on their blooming next summer.

### FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

**Herbaceous beds and borders.**—After all, there is no form of flower gardening equal to that which has been styled "old fashioned"; and the modern system, much ingenuity and taste are shown in the blending of colours, but there is nothing satisfying in it; the whole can be comprehended at a glance, whereas with a mixed



border of well-selected plants, which need not necessarily all be hardy kinds, something of interest occurs at every step one takes, and changes take place daily. Beds are all very well when they are few in number, and have plenty of space between them, but multiply them and you do away with the balancing colour, green, and destroy all repose. This is the reason why plants and flowers never look so well anywhere as in the foreground of shrubs, and therefore in villa gardens and others, where grass plots are of very limited extent, they should always be grown there, and the lawn left clear, unless large enough to have some nice ornamental shrubs here and there. The only objection to plants being near shrubs is that their roots rob the plants, but then there is always the ready remedy in the case of such as encroach, viz., cutting away their active feeders by trenching deeply in front. This is the first preliminary to starting with the border plants I am about to touch on, and it is a work that should be carried out thoroughly by beginning at one end of the

border and making a deep opening when the trenching can be done properly right through and finished off at the other end. It should be borne in mind that herbaceous plants not only require deep soil but they like it good: therefore, as digging proceeds manure that is decomposed should be mixed in at the bottom, and if the soil happens to be stiff, leaf-mould or refuse peat will be found to aid much in improving its texture and quality, and both are vegetable materials in which most plants delight. The trenching and any re-arrangement of the shrubs that may be necessary, completed the next thing

will be the planting of the border, which requires knowledge of the subjects to be used in order to place them in proper positions, as there is a vast difference in their habit and size. As the back row should of course be planted first, I will just mention a few of the most suitable for that particular part, among the most striking of which come the herbaceous Phloxes, which make a grand display through late summer and autumn. Delphiniums, again, such as *D. formosum* and *D. Belladonna*, are exceedingly beautiful with their magnificent spikes of lovely blue and white flowers: and then there is *D. cardinale*, a red, a much dwarfier grower. As a contrast to these, *Rudbeckia speciosa* comes in most usefully with its large yellow florets and black disc; also *Harpagium rigidum*, another Composite, something after the same character; and the perennial Sunflower, *Helianthus multiflorus* and its double form, both of which are very desirable. To divide these, *Tritoma Uvaria* should be planted. Lilies are likewise so gorgeously beautiful that they must not be left out, and among these there are many varieties, the old *L. tigrinum* and *L. candidum* being two of the most hardy and telling, and *L. auratum* the noblest of all. *Monarda*

*didyma* is another fine border plant for the back, growing about 3 ft. high, and this with the above named and some *Pæonies* and *Dahlias* will make a fine show. Next to these may be planted some of the *Michaelmas Daisies*, such as *Aster Amellus* and the beautiful *Anemones japonica*, *japonica alba*, and *japonica hybrida*, which have blossoms from 2 in. to 3 in. across. *Spiraea palmata* is a charming plant, and the

*coccineum flore-pleno* is very showy, and *Funkia ovata* is a valuable plant that lasts long in bloom. *Campanulas* *Van Houttei*, *Hendersoni*, and the *turbinata* section are all desirable, and there are hosts of *Primulas*, *Carnations*, *Violas*, and bulbous plants to fill up between, but enough has, I think, been said to show how gay and interesting borders may be made, and what a home they form for many floral treasures that are now seldom seen.

#### PROPAGATING.

All tender plants intended for stock or further use next season should be by this time secure from frost. *Echeverias* and other tender succulents will be found on being lifted to have formed a number of offsets around the collar, which may be taken off and dibbled in well drained boxes of sandy soil, and placed on a dry shelf, where they will root, and by bedding out time, though small, will be large enough for many purposes. At the same time, any that are found to be too

tall may be at once cut down; the tops should be put in comparatively small pots, and if kept free from damp during the winter will be rooted and ready for use in spring. One of the last plants propagated is generally the *Calceolaria*; for this a cold frame is best, as it dislikes heat; in fact, an error is often committed by giving cuttings of all kinds too high a temperature; a few degrees higher than that in which they have been—80°—is of assistance, but if much exceeded the chances of success are reduced. The better plan where it can be carried out is to keep the plant for a week or so before taking the cuttings

in the same temperature as the propagating house; of course, where planted out such cannot be done, but in the case of new or choice plants where the success of every cutting is a consideration such a practice should always be followed. Greenhouse *Rhododendrons* of the *Princess Royal* section strike readily from cuttings, and grow away as freely as those that are grafted. Take the cuttings in summer when the growth is moderately firm, i.e., half ripened, and as the new growth consists of a length of naked stem with a cluster of leaves at the top, it should be cut down close to the leaves of the preceding growth, and at the base of the cutting will be found two or three dormant buds, which, if retained, assist the formation of roots. Thumb pots, in which each cutting is inserted singly, are the best; they may be filled one-third with broken crocks or charcoal, and the remainder with fine sandy peat, space being left for a layer of sand on the top. Care must be taken to press the soil firmly down, and when the cutting is inserted, there must be no cavity left around its base. After being watered the pots and their contents should be placed in a close case, kept at an intermediate temperature, shading, watering, &c., as in the case of other cut-



*Gladiolus hybridus* Froelch.

*Aquilegias*, especially *A. glandulosa*, *A. chrysantha*, *A. cœrulea*, and the hybrids from these are most valuable. Irises, too, when in bloom are resplendent with colour, and among these there is any amount of variety. Dotted here and there should be dwarf Rose bushes, and vacant spaces left for *Gladioli* and any other summer flowers. We now come to the front rows, and here the double *Pyrethrums* should have a prominent place, as they are all remarkably good. *Geum*



ings, and they will be well rooted in about two months, when they may be gradually hardened off. When confined in close cases a sharp eye must be kept for their great enemy, thrips, which, if once allowed to effect a lodgment, soon disfigure the plants. On examination a few will be found to have emitted no roots, although there is a large irregular callus; in that case one of the best incentives to root formation is to take them out of the pots, cut off a few protuberances from the callus, and re-insert as before in fresh soil; so treated, roots will in most cases speedily push from the fresh surface. This principle may be followed out in the case of most subjects that root tardily. Another method by which I have been successful with subjects difficult to root is, after taking them out of the pots to put them in the Cocoa-nut fibre forming the bottom of the case; but if this be followed increased watching will be necessary; the fibre assists the formation of roots, but they speedily decay in it if not potted off.

All fruits such as those of Roses, Thorns, &c., should as soon as gathered be mixed with sand and placed in a heap outside, commonly known as the hot heap; in this not only does all the fleshy matter rot off, but the seed is kept moist all the winter, and when sown in the spring soon germinates; whereas, if kept in a dry state till sown its germination is much more irregular, and it will be found that many will lie dormant the following spring.—T.

#### THE ORCHARD HOUSE.

P. GRIEVE, BURY ST. EDMUNDS.

Now is the time when this structure should undergo any necessary repairs, improvements, or alterations which may be deemed necessary, such as painting, or at all events the thorough cleansing of the woodwork and the inside of the glass, &c., as by this time most, if not all, of the fruit will have been gathered. If a few late varieties of Peach trees still retain a portion of their fruit, or Grapes still remain on vines in pots, or on vines planted out, and trained to the roof or elsewhere, that need not prevent the repotting or surface dressing of other trees. It is unnecessary to wait until the leaves have all fallen before this operation is effected; on the contrary, it is, perhaps, better that it should be performed even before that has taken place, as the leaves may to some extent assist the newly repotted trees to form fresh roots, and to become to some extent established in their pots before the gradual diminution of temperature suspends for a time root action. Peach and other trees which may be planted out in borders, and to which it may be intended to apply portions of fresh soil, or in case of over luxuriance where a salutary check may be thought necessary by the partial raising of the roots, or judicious root pruning—all such work should have attention now rather than in mid-winter or in spring. All trees in pots or tubs which may have been placed in favourable situations in the open air, with the view of thoroughly ripening their wood, ought now to be brought under cover of some kind, in order that the soil may become somewhat dry, a condition which greatly facilitates repotting or surface dressing, as well as prevents injury to the roots through coming into contact with cold and saturated soil. In long established orchard houses some of the trees may have become unhealthy, and consequently unfruitful; and where that is the case they should be replaced by young trees. Some, also, though in the largest sized pots or tubs, and repeatedly surface-dressed, may nevertheless be what is known as "pot bound," that is, the pots crammed full of roots, a condition in which they will be likely to become unhealthy, and as it may not be practicable to repot them into larger pots, the balls of soil should be allowed to become tolerably dry; the pot should then be placed on its side and the ball of soil carefully drawn out of the pot, the inside of which will generally be found to be perfectly clean, but everything in the form of drainage will have disappeared, and the lower part of the ball will possibly be found to be one

solid mass of roots, the greater part of which it will be necessary to cut off, thus reducing considerably the ball of exhausted soil. Then repot the tree in the same pot, which should be thoroughly drained, without, however, using more material for drainage than is really necessary. The soil employed for potting should be good turfy loam enriched with rotted manure. This is an operation which in most instances may not require to be repeated for two or even three years, surface dressings being all that will be needed. In the case of younger trees, the pots of which are less filled with roots, surface dressing of a rich character will be all that is necessary, and before applying that as much of the old soil should be removed as possible. Healthy trees in comparatively small pots should at once be transferred into larger pots, using suitable soil for the purpose, such as light, rich, turfy loam, with a fourth part of well rotted pig or stable manure in it.

Where it is considered desirable to make additions to the stock of orchard house trees now is the time to select them. In most nurseries these may be obtained in small pots—healthy young well-established plants which have been some twelve months in their pots and require to be at once transferred to their fruiting pots, or a portion of maiden plants may now be potted up for the purpose. But of course a year will be gained by obtaining established plants in pots. In selecting maiden plants of such varieties as the Peach, Apricot, Plum, Cherry, &c., choice should be made of such as have formed a straight, well ripened shoot, some 3 ft. or 4 ft. long. Their roots should be neatly pruned or cut back, and they should be at once potted firmly in well-drained pots some 8 in. in diameter, not larger, as they are only intended to remain in such pots for twelve months, when they will, if they have succeeded well, be transferred to their fruiting pots. The soil used for them may be similar to what has been already recommended without, in their case, the addition of manurial materials. Top pruning should be deferred until the spring. Young plants of the Pear, Fig, and Vine, if intended for the orchard house may also be potted now, and large plants in pots may be repotted or surface-dressed, as may be considered necessary. If the soil used for potting was tolerably dry, and if the plants are still retaining a portion of their foliage, a good watering may at once be given to settle the soil about the roots, and to prevent anything like a severe check. Syringing may also be had recourse to, and the house containing them should be kept close for a week or two, and it will be unadvisable to place any of the trees again in the open air. But although kept under cover, so as to be protected from rainfall, &c., they need not as yet be arranged or placed where they are intended to be during the following summer; on the contrary, they may be placed close together, with the pots mulched or covered up with any light littery material at hand, so as to prevent undue evaporation, while air should be freely admitted to the structure at all times when the weather is not very severe. With the pots so protected, the trees may remain in this situation throughout the winter, and the rest of the space thus rendered available in the house may be used for the purpose of protecting Roses and the various other kinds of hardy shrubs, &c., used for the purpose of forcing during winter and early spring.

The Russian Mulberry is much spoken of in a Western American paper (*Iowa Homestead*), which I get. Do any readers of THE GARDEN know it?—J. H. D.

Prunus Simoni.—Messrs. Ellwanger & Barry, of Rochester, New York, furnished us with specimens of this Plum. It is a recent introduction from China, and botanically quite a curiosity. All visitors who have observed the two trees on the College grounds pronounce them to be Peach trees—the bark of the trunk and main limbs, and the whole expression of the tree reminding one of the Peach rather than the Plum, yet the fruit is smooth, flat, and would pass anywhere as a Plum or Apricot. Call it what we may, the fruit will be valuable for dessert and culinary use. The trees seem perfectly hardy. Our two specimens stood in an exposed position, and have made a strong growth this season, after enduring the worst winter we have had since 1855-6.—*Iowa Homestead*.

#### GLADIOLUS HYBRIDUS FRÖBELI.

VISITORS to London flower shows have expressed so much admiration for hybrid Gladioli, as exhibited by Mr. Douglas or Messrs. Kelway and Sons, that there is some danger of the natural species from the Cape being forgotten. All the typical species are worthy garden flowers, and such kinds as *G. cardinalis*, *G. ramosus* and its varieties, *G. trimaculatus*, *G. Colvillei* and its lovely snow-white variety, *G. Colvillei albus* are now well known and appreciated in all good gardens. Of the earlier hybrids Dean Herbert tells us much in his classical "*Amarylhidaceæ*," but of the early hybrids few are still so useful as *G. gandavensis*, one of the late M. Van Houtte's seedlings, and the still more brilliant and effective *G. brencleyensis*, raised and exhibited years ago by the late Mr. Hooker, of Brencley, in Kent. For many years after the introduction of *G. blandus*, *G. psittacinus*, and other old types, but little attention was paid to the introduction of new species, although many hybrids between these and other species were then raised, but more recently several new species have been introduced by the late Mr. Wilson Saunders and others. Of these *G. dracocephalus*, *G. Saundersi*, and the present species are the best known. *G. purpureo-auratus* was sent out by Mr. Bull, and although by no means so showy as many other kinds, is yet most graceful and distinct in port, and also in the shape and colouration of its flowers. In our deep sandy soil it attains a height of nearly 5 ft., and the flowers gradually developing themselves render the plant effective for at least three weeks from the time the first and lowermost blossom expands. As a graceful plant it well deserves culture. It is perfectly hardy—hardier indeed than many home-raised hybrids; but a warm deep soil and a sheltered position near the foot of a south or west wall are most congenial to its strong growth.

Apart from its beauty and grace it has been most useful to the hybridiser, the result being two distinct varieties raised some years ago by M. Victor Lemoine, of Nancy, and already figured and described in THE GARDEN. M. Fröbel, of Zurich, has also raised a fine variety of this race, growing 5 ft. high, with stouter and much branched spikes, the flowers of which are more openly campanulate, larger, and the blotches on the three lower segments of the blossom much larger and of a rich crimson hue. I have not grown M. Lemoine's varieties, but Mr. Gumbleton gave me that alluded to as raised by M. Fröbel, and I can speak confidently of it as a most robust and distinct kind, most effective when in bloom, useful for supplying cut flowers of good quality, and as it seems to be vigorous in constitution and its corms quick of increase, it promises soon to become well known in most good gardens. The annexed illustration gives a good idea of a part of the inflorescence, having been drawn from specimens sent from the College Botanic Garden, Dublin. F. W. B.

#### THE POTATO HARVEST.

I HAVE read Mr. Inglis's remarks on Mr. Muir's advice about allowing the disease to do its worst and lifting afterwards those that remain sound. Mr. Inglis seems to think that Mr. Muir is wrong in his practice, but is he really so? I understand from Mr. Muir's statement that he leaves the haulm on and allows the disease to do its worst on it; if such is the case, he could not do better than leave the tubers in the ground till the disease has done its worst on them also, for if they are lifted before that after the disease has thoroughly got hold of the tops every affected tuber will rot in the heaps and cause a considerable amount of labour in keeping them looked over, which is avoided by allowing the diseased



tubers to rot in the ground. I know that by storing Potatoes well dried and keeping them thin in a dry place the development of the disease which is already in them will be much slower than when put together in heaps and allowed to sweat, but they cannot often be placed under such favourable circumstances from want of room, especially where large quantities are grown and have to be stored. There is nothing which brings out the disease already in Potatoes more rapidly than this sweating process, so that it seems to me that if Mr. Muir has to store the Potatoes in quantity after allowing the disease to do its work on the haulm, he could not do better, as I have already said, than allow the tubers to remain in the ground till it had done its work on them too, thereby saving both time and labour in sorting afterwards. But why leave the haulm after the disease has commenced an attack on it? What is gained by leaving it? Every grower who has given any attention to the matter knows when once attacked how rapidly the poison spreads in the tubers, and what disappointment is felt when lifting a crop (apparently only slightly affected in the haulm) to find many of the best tubers diseased only slightly perhaps, but quite sufficient to condemn them for storing or show purposes. Why not cut off the haulm to the ground upon the slightest traces of the disease being found, and thus save the crop? If this be done and the Potatoes are left in the ground till time can be found to lift them, they will mature considerably, and when lifted little or no disease will be discovered. In the latter part of July we often get thunder showers; as soon as this is the case, if a dull day or two follows, the disease is sure to make its appearance, and if carefully looked for will often be found attacking the stems close to the ground before anything of it is seen in the leaves. My practice has been to cut off the haulm to the ground as soon as I detect the slightest traces of disease, and I have good reason to congratulate myself upon the results, for upon lifting the crop (about 3½ bushels to the pole) scarcely any diseased tubers were found.

After several years' experience with some fifty to sixty varieties, I find no Potato to beat the late Rose either for cropping, cooking, or keeping. Magnum Bonum comes next. Last year I divided a strip containing forty-eight poles; one half was planted with Magnum Bonum at 3 ft. apart, the other half with late Rose at the same distance; from the former we dug eighty-four bushels, from the latter ninety-six bushels. I have grown these two sorts with similar results for some years. The bulk of the ground here is light and suits the Rose. I am quite aware that it does not give such good results on strong soils. After these two kinds, Schoolmaster is the heaviest cropper of the older sorts with me; it is also a fair cooker, and seems to stand fairly well against the disease. Vicar of Laleham seems to be a promising sort; it is a heavy cropper, produces good large tubers, and I have not as yet found a diseased one. Purple Kidney is another heavy cropper, and as yet I have not found any disease in it.

Brookwood.

R. LLOYD.

#### ESSEX COUNTY POTATO SHOW.

THIS took place at Kelvedon on September 28. Essex, like Kent, is a richly fertile county, in which Potatoes are largely grown. No wonder, therefore, a society has been formed, and a schedule, consisting of some twenty-nine classes, issued, including a good number of special prizes. The competition for these prizes proved a remarkably good one, nearly 1000 dishes being staged, and many of remarkably good quality. Unfortunately, in the large class for 18 dishes, the judges had to disqualify the best collection, owing to its containing synonyms. One of the Essex papers states that "the show served to bring into prominence a fact which horticulturists generally will do well to properly regard, viz., that some of the professedly new Potatoes now advertised and charged for as new varieties are simply old friends with new names; in other words, are well-known sorts

re-christened." It would be well if the trade would take a note of this as illustrative of one of the disadvantages belonging to the practice. The tubers were all nicely arranged in plates in a spacious tent, in a way most convenient for judging. The best collection in the class for eighteen varieties was shown by Mr. Thos. H. Hill, gardener to A. W. Ruggles Bute, Esq., Durwards, Witham, but it had to be disqualified for the reason just alluded to. It contained good examples of King of Potatoes, American Purple, Trophy, Schoolmaster, Vicar of Laleham, Pride of Ontario, Emperor, Prince Arthur, Vicar, Salmon Kidney, Woodstock Kidney, Beauty of Hebron, Oneida, and Pride of America. An extra prize was awarded to this collection. A second prize was awarded to Mr. W. H. Scott, Kelvedon. In the class for twelve varieties, Mr. R. W. Bishop, Stisted, was first with a very good collection, consisting of Saint Patrick, Early Rose, Schoolmaster, Vicar of Laleham, International, Snowflake, Pride of America, Covent Garden Perfection, Blanchard, Magnum Bonum and Breadfruit. Mr. Hill was second. The foregoing varieties pretty well indicate the leading sorts shown in the various classes. Special prizes were offered by Messrs. Sutton and Sons, Reading; Messrs. James Carter & Co., and Messrs. Hooper & Co., London; Messrs. Daniels Bros., Norwich; Mr. R. Dean, Ealing; Mr. J. King, Coggeshall, &c., and these brought out many interesting features. The cottagers' classes were well filled, and some excellent Potatoes were staged in them. One of the classes for cottagers was for nine dishes, distinct, and as there were some six or seven collections, they showed the extent to which collections of Potatoes are grown by cottagers in the Kelvedon district.

Of the newer kinds of Potatoes shown on this occasion, we may mention the new American variety Matchless, shown also under the name of Holborn Favourite; St. Patrick, a large white American kidney; Trophy, very handsome; Radstock Beauty, Reading Hero, Reading Abbey, Covent Garden Perfection, Vicar of Laleham, Avalanche, Mr. Bresee, Bedford Prolific, and Woodstock Kidneys. Vicar of Laleham in particular was largely and finely shown. Messrs. Sutton and Sons, of Reading, and Messrs. James Carter and Co., Holborn, staged collections of varieties; the former several new varieties of great promise, such as Standard, Surprise, Fillbasket, Fenn's No. 3, 4, 5, 6, and 7, and others. Mr. B. R. Cant, St. John's Nursery, Colchester, sent a collection of cut Roses that were much admired.

If only public support be forthcoming, it is intended to make the Essex County Potato Exhibition permanent. In order to do this, it will be necessary to have a list of annual subscribers, about which there should be no difficulty in so enterprising a county. The committee must also obtain all the special prizes they can, as the general public are not so much attracted by a Potato show as to a general horticultural exhibition.

R. D.

#### FRUIT AND FLOWER SHOW AT VIENNA.

THIS, which was opened on the 29th ult., was an excellent exhibition, notwithstanding the failure of the fruit crop in many parts of the empire. Of Apples, Pears, and Grapes, the principal objects staged, there were 12,000 dishes, making on an average about from 60,000 to 80,000 fruits. An exporting house from Botzen, Southern Tyrol, staged a very beautiful collection of various fruits, including Citrons and Pomegranates, which ripen in that favoured locality. A large grower from Vöslau had a small but beautiful collection of well coloured Grapes; all others were good, but those just named were prominent. Some of the collections were separated by fruited branches of different Crataegus, of which there was a botanically interesting collection, as well as of other fancy fruits, from the prickly Pear to the Crab Apple, and from the Cranberry to the Alpine Currant. The groups of plants, flowers, and vegetables equalled those at any English autumn show. A Viennese speciality, *Ficus elastica*, was remarkably

well grown; also a few dozen *Eucharis amazonica*, grown in comparatively small pots as market plants.—MAX LEICHTLIN, *Baden-Baden*.

**Alyssum argenteum.**—This most desirable sub-shrubby plant grows into a bush 1½ ft. to 2 ft. high and proportionately wide, and bears large heads of pale yellow flowers so continuously that we might almost call it perpetual. It succeeds equally well in the open border or on the rockwork, and seems to be a long-lived plant, increasing in size annually until it becomes a cushion 3 ft. or more across. It is a very old plant, but not at all common.—T. SMITH, *Newry*.

#### CATALOGUES RECEIVED.

Ellwanger & Barry's (Rochester, N.Y.) Catalogue of select Roses.

George Such's (South Amboy, New Jersey) Catalogue of Stove and Greenhouse plants.

Gue's (Iowa) Homestead Manual.

Robert Mack & Sons (Catterick Bridge) Catalogue of General Nursery Stock; also a Catalogue of Roses.

James Walters' (Exeter) Descriptive Catalogue of Roses.

H. Cannell & Son's (Swanley) Autumn Catalogue of Winter Flowering Plants and Bulbs; also a list of Roses and Chrysanthemums.

Frederick & Co's (Zurich) Autumn Catalogue of Hardy Plants, Bulbs, Trees, Shrubs, &c.

Osborn & Son's (Fulham) Autumn Trade List for 1881.

**Names of Fruit.**—A. C. B. (*Reading*).—1, Catillac Baking Pear; 2, Belle of Brussels; 3, St. Germain; 4, Beurré Diel. —R. T. D. We do our best to name what you have sent, but please bear in mind that there is so much trouble connected with the naming of a collection of fruit, that we only undertake to name four varieties when several average specimens of each kind are sent. *Pears*: 1, one specimen, should have sent several average fruit; 2, Beurré de Capiaumont; 3, Conseiller de la Cour; 4, too small, see remark No. 1; 5, Beurré Diel. *Apples* (very good specimens): 1, Cox's Orange Pippin; 2, Court of Wick; 3, Minchall Crab; 4, Blenheim Orange; 5, Cox's Orange Pippin; 6, Hawthornden; 7, Manks Codlin; 8, Pile Russet; and 9, Golden Noble.

**Names of Plants.**—R. H. Jones.—Common Barberry (*Berberis vulgaris*).—J. E. Holmes.—Please send again. —A. K.—*Villanova chrysanthemoides*.—Messrs. Chas. —*Gymnogramma vestita*, Himalayas.—*Counting* (Woodford).—1, Silene Armeria; 2, Sedum oppositifolium. —Mac.—*Saponaria officinalis*; shrub is *Crataegus coccinea*. —H. E. B.—1, Aster Amellus; 2, Helianthus decapetatus. —W. B.—1, Odontoglossum cordatum; 2, Epidendrum cochleatum; 3, apparently Epidendrum raniferum. —F. R. S.—1, Aster multicaulis; 2, A. polyphyllus var.; 3, Corydalis lutea; 4, Artemisia (species).

J. C.—How can you expect us to name a plant we have not seen and of which you do not send either drawing or specimen? Write to the curator.

#### COMMUNICATIONS RECEIVED.

September 20: G. J. R. M., R. G. A. J. H., J. W. E. E. G. B. W. R. H.

October 1: J. C. G. S., H. H. D. O., H. H. J. C. C.

—H. W.—R. F. J.—G. S. S.—G. B.—N. H. E.—H. H. E.

October 3: W. C. J. S. E. H. W. W. T. C. C. B.

W. C. J. S.—W. B. W. E. G.—E. S. D. W. M. E. M.

—W. R. W. N.—E. H. W. W. T. J. G. T. S. W.

J. E. R. T. B.—E. H. W.—Max L. E. H.

October 4: W. R. J. G. B.—G. F. R. D. J. S. W.

—H. H. C.—C. B.—K. S. D.—J. S.—F. C.—B.—J. McA.

—F. H.—A. M.—D. L.—A. D.—R. F. S. W. T. J. Z.

—R. G.—P. N. F. T. P.

October 5: Mac—G. M. J. C. R. D.—F. A.—P. G.—

J. F.—T. S.—A. M.—W. B.—D. & Co.—H. & Son—H. E.—

F. H.—F. W. B.—E. J.—A. K.—R. L.—R. G.

October 6: K. G. Co.—H. & Sons—J. G.—F. R.—

H. G. B.—T. W. M.—T. S.—G. B.—T. W. M.—H. H. D.—

G. M.

IN my review of "Garden Pests" I took exception to the spelling of certain names. Owing to the misplacement of one letter by the printers I am made to spell two of these names incorrectly. In "Garden Pests" *Chematobia brumata* is spoken of as *Chemitobia trumata*, and *cincta* is spelt *cineta*. In my corrections these words appear as *Chematobi trumata* and *cincta*; they should have been as above.—G.



No. 517. SATURDAY, OCT. 15, 1887 Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare.*

## ON THE HARDINESS OF HIMALAYAN RHODODENDRONS.

THE paper (by Mr. Mangles), published in THE GARDEN 24th September last, is very interesting; and as I have taken much pleasure in cultivating and hybridising Rhododendrons for about 25 years, especially with a view to acclimatise those of Sikkim and Bhotan, I think the results at which I have arrived may be acceptable to some of your readers. In order to avoid occupying too much space, I shall first give the names, as furnished to me, of those varieties which I have found perfectly hardy trees without the slightest protection, although some of those which bloom early (about March) have their flowers occasionally spoiled by the spring frosts.

Alpinum	Falconeri superbum,
Æruginosum	not bloomed
Anthopogon	Glaucum
Arboreum album	Hodgsoni, grand, has
Roseum, very beautiful	not yet bloomed
Nepalense	Hookeri
Barbatum, magnificent	Keyi
Calyculatum	Lanatum
Camelliaeflorum	Lancifolium, not
Campanulatum	bloomed
Campbelli	Metternichi
Campylocarpum	Massangei, beautiful
Ciliatum	bloom this year
Cinnamomeum	Niveum
Cinnabarinum	Nobile, a grand plant,
Crispiflorum, not	never bloomed
bloomed	Ochraceum
Eximium, fine, like Falconeri	Roylei
Falconeri, grand	Virgatum
Fulgens	Wallichii, I think same
	as niveum
	Wightii, I think not true

The following were more or less injured last spring. Those marked \* I have not yet succeeded in acclimatizing.

Argenteum, much injured, growing well, not bloomed yet	Lindleyanum, much injured, growing well
Aucklandi, much injured, growing well, bloomed well 1878, 1879, 1880	Maddenii, much injured, growing well (I see no essential difference between this and Jenkinsi; centre of Jenkinsi flower rose, of Maddenii, yellow)
Calophyllum, apparently killed, but growing well	Nilghiricum, not bloomed, much injured
*Dalbousianum donot give this up	*Nuttalli, many plants killed, I fear hopeless
*Edgeworthii, I do not give this up	Thomsoni, much injured, but growing
Formosum Gibsoni, much injured, but growing well	Windsori, very much injured, but growing well
Jenkinsi, much injured, doing well, never injured in 20 years previous	Windsori leucanthum, very much injured, but growing well
Kendricki, I doubt its name	The last two plants appear to me less hardy varieties of R. arboreum
Longifolium, much injured, growing well, has not bloomed	

I have not included any European hybrids in my list, of which, between Himalayan sorts alone, I know many, and have a great number of my own rearing also, and the reason I do not give up Dalbousianum and Edgeworthii is that I have seedlings from crosses of them which promise well to be hardy. One especially, between Edgeworthii and, I think, calophyllum, which only lost its bloom buds last spring, I am very

proud of; its fragrance is far beyond any I know—Rollisson's fragrantissimum and Lindleyanum being, so far, the best. I have named it the Empress of India in honour of our Queen. H. H. Glenville, Fermoy.

## MIXED FLOWER BEDS IN AUTUMN.

AFTER an almost tropical July we had here a wintery August. The maximum on some days was not above 55°, whilst on many nights the minimum was hardly more than 40°. The cold rains and sunless skies caused the flowers to receive a severe check, from which many have not recovered. The late flowering Lilies suffered most; the buds and stalks were destroyed by disease, and of those which escaped, a great proportion will never reach flowering this season, the buds being still backward. Still, the autumn has been fine and seasonable, though not warm, and the first sharp frost, killing the Dahlias and Heliotropes, happened on the same night as last year, October 4. But the garden here is still full of flowers, the flowering of many of the more hardy kinds having been retarded. When shall we get our Asters rightly named? Out of forty or fifty kinds which I have, there are not ten concerning which there is a consent amongst botanic gardens and gardeners about the names. None is more showy than the tall *A. versicolor*, or prettier than the dwarf rose-coloured *A. longifolius*. A still dwarfer kind, not more than 1 ft. high, with compact broad heads of white flowers with pink anthers, is generally called *A. dumosus*, but, I believe, wrongly. A tall, clear, bright, lavender-coloured Aster with large flowers was sent to me by Mr. Robert Parker, of Tooting, as *A. amethystinus*, and is, perhaps, the finest Aster I have; but some of the small-flowered sorts, *A. ericoides*, *A. horizontalis*, *A. cordifolius*, are well worth the room they take. *A. sericeus*, with white silky leaves, is a most elegant plant. *A. Amellus*, *lævis*, *bessabicus*, and *Chapmani* are all good, but the genus is endless.

The largest flower of *Pyrethrum serotinum* I ever saw came to me yesterday from Devonshire. Here they are poor, for my plants are all two years old. Different treatment may suit the same plants in different soils, but in this soil, if I wish for good heads of fine flowers, I am certain that Asters, Phloxes, Sunflowers, Rudbeckias, Pyrethrums, &c., must be pulled to pieces every year. Much depends upon how and when this is done, and now is the time to do it. Of course I do not advise that it should be done to all the plants and the garden disfigured, but I will give an example; I have just been taking up a plant of *Rudbeckia speciosa* (generally called *Newmani*). It was a single crown this time two years ago. I have divided it into twenty-four plants, each with a good root, and planted them in a store bed of rich soil. In April these will be planted where they are to flower, and in August they will be fine plants 2 ft. across and covered with far finer flowers than the older plants will have. I treat the runners of the Japanese *Anemones* in the same way. They get well established before winter, and with liberal treatment make fine plants by next autumn. All these plants delight in being covered in late autumn with old leaf-mould. I find the increase quite prodigiously when I do this. Primroses appreciate it even more; the pretty little *P. farinosa* is sure to be pushed out of the ground by frost and lost without some such attention. That capricious and curious but beautiful plant, *Senecio pulcher*, is unusually fine with me now. The flowers do not mind a few degrees of frost. I have plants of which the opposite pairs of leaves cover a diameter of nearly 3 ft., and with five or six flower-stalks, each bearing three or four open flowers and several buds. This may be nothing

in Kent or Surrey, but it is good in such a climate as this. Still, out of fifty plants of this Groundsel I am satisfied if a dozen do well. Some damp off at the crown; others twist their leaves and flowers about in a most morbid way. I never can flower plants the first year from root cuttings, or if left out all winter, but cuttings taken now will be kept in pots till the spring of 1888, and many of them will flower that year. It is a troublesome, eccentric plant, but is worth all the trouble it gives.

Amongst the chief ornaments of my autumn garden are herbaceous Lobelias, not only the scarlet flowered which everybody knows, but which will never live through winters out-of-doors here, but also—dare I say it?—the hardy varieties of *Lobelia siphilitica* and its hybrids. The rich violet colour of some of these is very fine; others are as clear a blue as any Larkspur, and others pure white; and they are much admired in my garden both by the owner and his visitors. I may conclude by advising all who wish for variety in autumn flowers to raise perennials from seed, and to sow early. The seedlings of many will then flower the first year, and begin about the time their parents leave off. *Geum coccineum*, *Lychnis Haageana*, *Delphinium formosum*, and many others may in this way be kept in flower late into the autumn, and contribute to make the garden gay in the fine days of November. C. WOLLEY DOD.

Edge Hall.

## ALPINE PLANTS, SOILS, AND ROCKERIES.

I FEAR the advice given by Mr. Jenkins (p. 367) may lead many to be careless in the matter of soils and suitable situations for alpine plants. My own experience leads me to believe that too much care cannot be bestowed upon valuable plants when they come before one for the first time, in order that they may be properly planted. I have not seen the foreign catalogue recommended by Mr. Whitehead, but we have in England Messrs. James Backhouse and Sons' admirable "Catalogue of Alpine Plants and Perennials," which ought to be in every potting shed for handy reference when any new plants come to hand. It contains the exact information required; for example, "*Acæna* (sandy loam)," "*Androsacæ*, near allies to the *Primulas*, all enjoy fissures of rockwork, where they can root deeply in peaty loam and grit. The silky-leaved kinds should have their leaves (only) kept dry in winter;"—and so on. No directions could be better than these, thus tersely given; and it should be a pleasure for our cultivators to follow them most carefully. I have to mourn the loss of many early acquisitions from careless planting in unsuitable soils; and this leads me to study every new arrival, and to see that it has suitable preparations made, so that it may feel at home in its new location. If it be a limestone plant, I plant it on a limestone rockery, or I put some lime about it on the garden beds. Only this week I was telling a florist that very few of my *Tritomas* showed bloom this year, and that I had lost dozens of them. He told me that this was very generally the case hereabouts, and the reason was that they were not planted deeply enough. They may be planted in light soil like mine, he said, quite 2 ft. deep, and never less than 1 ft. deep. I believe this is the true explanation, and it shows the importance of correct information in such cases. It is quite true, as Mr. Jenkins points out, that alpine plants will thrive in the open borders; and if you cannot have rockeries by all means grow them so; but it cannot be denied that they do much better on rockwork. But even a border may be made suitable by very simple means which are at anyone's command. A few



rubble stones scattered over a flat border answer admirably, and I have at least 100 ft. of border so covered, for Anemones, Hepaticas, and other tiny alpine which would be lost altogether without this rough shelter. Then we have a great deal of simple rockery made up of old bricks, covered over with good soil to conceal them, and then loosely covered with large boulders, so as to form little cosy nooks for Saxifrages, Dianthus, and other such plants; and I find Aquilegias also like this sort of formation, as the rough bricks afford moisture for their long roots. Saxifrages should always be perched up high and dry, but with plenty of fissure space for their roots. They damp off on the open borders, although for a year or two they seem to flourish there. The late Mr. Leeds, of Longford Bridge, who devoted great attention to alpine plants, as he also did so successfully to the Narcissus;—had all his rockeries built up of old bricks. He commenced with a space about 5 ft. wide by 50 ft. long, and placed bricks about 6 in. apart on the ground level all round. The centre was then filled up with prepared soil to the level of the bricks, and another tier of brick pockets built, just resting upon the first, and so on until he had four tiers, the last forming the top, and the whole being about 3 ft. high. I have built such a brickery here, and it answers admirably, especially for Primulas, which seem to love the snug square pockets. The great recommendation of this kind of rockery is that you can withdraw the bricks which surround a plant, and you then have a square block of soil which you can remove intact, and either place in a pot or replant elsewhere without any fear of harming the plants. Mr. Leeds's rockeries, made forty years ago, are still to be seen, and I have recovered many valuable plants from them, although they are now overgrown, and not at all maintained as rockeries.

In these simple ways, therefore, one may readily provide suitable situations for every sort of plant, and if we thus carefully provide both suitable soil and suitable surroundings, we have all the greater chance of growing alpine plants successfully.

Didsbury.

BROCKHURST.

### NEPENTHES MORGANIANA.

I NOTICE that *Nepenthes Morganiana*, lately shown by a London nurseryman, was much admired; and so it should be, being both handsome and distinct. This is one of many fine hybrid *Nepenthes*, produced by Mr. James Taplin, when manager of my establishment, and the traveller for Messrs. Veitch & Sons saw it and others in my houses, and praised it highly. This plant was named by me *Nepenthes Morganiana*, and is, for the first time, offered to the public in my catalogue, just issued. I sold the original plant, having taken cuttings, to Mrs. Morgan, of New York, with the distinct promise from her gardener that neither the original nor any part of it should leave Mrs. Morgan's houses. Now it would seem that these Pitcher plants have peculiarities which, as Dundreary says, "No fellah can understand," for Mrs. Morgan's Pitcher plant, or part of it, manages to reach London, and gets introduced into the best plant society there.

Many other of these *Nepenthes* seedlings have gone from here to London in the usual commercial way, as Mr. Outram bought them from me on Mr. Williams' account, all being paid for. They are now much-admired members of London (plant) society, being well known as *Nepenthes Outramiana*, *N. Williamsi*, *N. superba*, *N. robusta*, and so forth. Under Mr. Williams' careful treatment they will doubtless live a happy life for many years, their progeny coming back to this

country, and going, at high prices, into the hands of those here who think that no plants can have merit unless they come from abroad.

GEORGE SUCH.

South Amboy, New Jersey, U.S.A.

[We are informed by Messrs. Veitch & Sons that they received the plant from Mrs. Morgan.]

### EDITOR'S TABLE.

AMARYLLIS FROM CALKE ABBEY.—One of the finest things that have come to us of late is a box containing tall handsome specimens of the brilliant *Amaryllis Ackermanni pulcherrima* grown in the open air. The stems were about 2 ft. high, and the foliage broad and strong. That such a plant should be grown in one of the north midland counties of England, and grown, as we see, perfectly well, is most interesting. Mr. Hugo Harpur Crewe, who sends them, says that the earlier bloom is better, larger, richer in colour, and fuller in form. The plant may no doubt be grown in many places, and we hope Mr. Crewe will favour our readers with a note on the conditions by which such a remarkable result has been brought about. No one to whom we have shown the specimens suspected that they were from the open garden.

SINGLE DAHLIAS.—A rich bunch of these on the 11th October from the gardens at Goldsborough Hall, Knaresborough, suggests the value of these flowers late in the year over a large area of the country. This year we often noticed them poor about London from being put out small and late. Mr. R. Goodall remarks concerning the above, "The seed was sown in heat on March 16, and by potting the seedlings off as soon as they were large enough to handle, they were good strong plants by the third week in May, when they were planted out. Some of the plants are now 4 ft. high by 3 ft. through, and one mass of bloom. I may add we cut the first blooms on July 6."

BELLADONNA LILIES FROM THE NORTH.—A bunch of these fine Lilies, delicate and fragrant, shows well the large extent of country over which, carefully placed and nurtured, they may be grown. We are accustomed to associate some of our plants supposed to be somewhat tender with the southern counties, but the *Belladonna Lily* claims a larger area for itself. Grouped with the splendid hardy scarlet *Amaryllis*, alluded to this week, it would help to form a fine feature in the garden in autumn.

STERNBERGIA LUTEA.—This fine old autumn flower comes to us from Mr. George Lee, of Clevedon, who naturally thinks much of it. It is a very bright little flower in autumn, Crocus-like, and yet distinct. It thrives unfortunately not freely everywhere—at least it does not flower well in all soils. We have noticed it best in sandy and gravelly soils. Where it does well it should be made more of. It is a plant we have never seen anybody treat as it deserves, that is to say, make tasteful or effective use of it.

PHLOXES FROM SEED.—Mr. J. Douglas brought on the 11th October a large armful of tall Phloxes raised from seed sown in March. This, with other evidence of the same kind, makes one think how much we could do in raising a fine stock of many flowers that we now only propagate from cuttings, and sometimes carry over from year to year in a tedious or expensive fashion. Apart from the vigour of their growth and beauty of flower, seedlings are worth growing for the chance of getting new and beautiful varieties; even if the grower is not

ambitious in that way, but only wishes to have a good batch of flowers, the mere raising of the plants from seed gives a variety and a hopefulness to collections which makes them more interesting than if we know everyone before it opens. Of course we may have our fixed races from seed too; at least it is to be hoped so. From what we have seen this year we are certain that there is a great improvement to be wrought in the direction of raising a great many more good flower-garden plants from seed than has hitherto been the rule. We may add that some of those flowers brought by Mr. Douglas were just as good as any of the fine-named sorts in their colour and form. A very noticeable advantage in these also is that they prolong the bloom. The ordinary cutting outdoor stock flowered in late summer or early autumn, whereas these seedlings come in and give a vigorous bloom very late.

THE CLOVE PINK.—Mr. Ware sends us specimens of the *Clove Pink*, which he finds flowers pretty freely in autumn. It is a plant we admire very much, and think it ought to be grown, like the *Clove Carnation*, in a special manner. We find it necessary to add that this is *not* the *Clove Carnation* in any shape, but a good border Pink, fringed, and magenta-rose in colour.

PRIMROSES AND POLYANTHUSES.—Mr. Horley sends us from Bedfordshire some coloured and other Primroses and some bordered Polyanthuses, all very fresh and varied. His very long season for these flowers is beginning early.

ROCHEA FALCATA.—This bright old plant used to cheer the autumn greenhouse before the many zonal *Pelargoniums* that now do that duty came into being. It should not be left out of cultivation; the colour is distinct and the habit very much so. It comes from Glasnevin, and is worthy of being grown well.

LOBELIA MILLERI.—This is one of the most interesting of the hybrids between the blue and red American tall Lobelias; the colour is rich and good, which is not the case with some of the reddish hybrids from Glasnevin.

ASTER ELEGANS.—A very graceful Starwort from Glasnevin—a delicate French gray. Among the Starworts now in flower in gardens there are a good many not so fine as this. Where is the old one we used to call *A. cordifolius* with whitish flowers and in drooping plumes? If this *A. elegans* is free in growth, it must be a very pretty one. A very rigid selection indeed is necessary in the case of the Asters; one out of about fifty species is worthy of cultivation.

MALVA HEILDRICHI.—A bold flower, very like a single Hollyhock, and might, indeed, pass for the parent of the race, so far as we can judge from a few flowers sent from Glasnevin—home of many strange plants. These great Mallows have a use in gardens, though not an important one, owing to their habit, but in a large botanic garden they are at home.

ARBUTUS CANARIENSIS.—A novelty from the houses at Glasnevin, with well formed racemes of large flowers, green in bud; it must be a very interesting plant in its native isles, and it is rare in cultivation.

CLERODENDRON BUNGEI (FETIDISSIMUM).—An old plant that does very well at Glasnevin, hardy, though with many tender relations. It has a disagreeable odour; well grown in a country a little warmer, it might be an effective plant.



FROM A NORFOLK GARDEN on the 13th of October we have the Flame Nasturtium (*Tropæolum speciosum*), the beautiful *Crocus pulchellus*, several kinds of hardy *Cyclamens*, some of the finest Starworts, including *Aster sericeus*, *Plumbago Larpente*, *Meadow Saffrons* (*Colchicum*) in variety, *Heaths*, the red *Honeysuckle* (*Lonicera sempervirens*), *Night flowering Stock* (*Matthiola tristis*), white *Chinese Larkspur*, various *Heaths*, *Tropæolum tuberosum*, *Gaura Lindheimeri*, and various others.

## SOCIETIES.

### ROYAL HORTICULTURAL SOCIETY.

OCTOBER 11.

THE fortnightly and monthly meetings held at South Kensington seem every year to grow in popularity and usefulness; even at this dull season they are full of interest to horticulturists. At ordinary flower shows one can generally form some idea of what is to be seen, but at these meetings there are invariably some little surprises in the way of novelties to be met with, and it is a matter of regret that they are not more largely frequented by the general public. For an October meeting, that held on Tuesday last was unusually interesting, owing to the great numbers of both flowers and fruits that were shown, especially Apples, of which there were some 500 dishes, representing most of the finest sorts in cultivation. These in themselves formed quite an exhibition. The Floral Committee awarded first class certificates to—

Messrs. Veitch & Sons, Royal Exotic Nursery, Chelsea, for—

**Nepenthes Rajah.**—One of the largest species known, the matured pitchers being capable of holding quite a quart of water. In colour, the pitchers are a deep red. It is a native of Borneo.

**Globba coccinea.**—A Bornean plant of the Gingerwort family, remarkable for the great length of time during which it continues to produce its scarlet bracts and yellow flowers. It is a very graceful plant and a useful one for cutting from.

**Masdevallia velifera.**—An extremely rare species belonging to the section with curiously shaped, but not very showy flowers—the latter of a bronzy hue, the attenuated sepals being inclined to yellow. Its vile perfume, resembling that of some of the Carrion flowers, somewhat detracts from its merits.

**Nepenthes madagascarensis.**—A new species from Madagascar, having handsomely formed pitchers of a deep blood red hue. Even in a small state plants of it seem to produce pitchers freely.

**Adiantum 'cuneatum grandiceps.**—A variety having the fronds terminated by a broad fasciated crest, rendering it very handsome, and quite distinct from any other.

Mr. B. S. Williams, Victoria Nursery, Upper Holloway, for—

**Cœlogyne Massangeana.**—An elegant Orchid having pendulous racemes of blossoms from 1½ ft. to 2 ft. in length. The flowers, which are about 1½ in. across, and produced numerously, are creamy yellow, the tip being surmounted by a golden crest.

**Davallia gibberosa.**—A Hare's-foot Fern with large fronds about 2 ft. long, the pinnae being finely cut, making the plant one of the most beautiful *Davallias* in cultivation.

**Amaryllis Mrs. Garfield.**—A lovely hybrid, raised between *A. reticulata* and one of the large-flowered class named *Defiance*. The progeny combines the particular characters of the two parents in a striking degree, the flowers being large and of a delicate soft rosy pink, chequered, as in *reticulata*, with a deeper hue.

Mr. Bull, King's Road, Chelsea, for—

**Odontoglossum vexillarium rubellum.**—A beautiful variety, particularly remarkable as being autumn flowering, a circumstance

which renders it a valuable acquisition. The colour of the blossoms is a deep rich rose, a tint that uniformly prevailed throughout the whole of the plants shown.

**Dion edule lanatum.**—A variety of a noble Cycadaceous plant, having the leaves more woolly than in the type.

**Lælia autumnalis' atropubens.**—A variety having large flowers of a much deeper and richer colour than those of the ordinary form. It is one of the finest Orchids in cultivation.

The General Horticultural Company (Mr. Wills) for—

**Adiantum Lathomi.**—A Maiden-hair Fern in the way of *A. scutum*, but differing materially from that species in the fronds being drooping instead of erect.

Mr. R. Lloyd, Brookwood, Woking, for—

**Coleus Dolly Varden.** one of the most distinct and beautiful varieties yet exhibited. The combination of colours in the foliage is quite indescribable, and the colouration seemed to be uniform in all the plants exhibited.

Mr. Turner, Royal Nurseries, Slough, for—

**Dahlia Beauty.** one of the fancy-flowered class, very distinct from any previously existing variety. The flower is large, of fine form, the florets yellow, quaintly tipped with white.

Mr. King, Wray Park, Reigate, for—

**Coleus Ada Sentence.** a brilliant variety having large leaves, with a broad medial band of the richest carmine, encircled by deep crimson, and edged with the brightest emerald green, a striking combination of colours.

Col. Trevor Clarke for—

**Pear.** an unnamed seedling from Marie Louise.

Miscellaneous groups of new or rare plants were exhibited by various nurserymen which created a fine display in the council room. In a group from Messrs. Veitch the most remarkable were the Orchids, particularly a fine collection of about a dozen distinct kinds of *Cypripedia*, mostly hybrid varieties raised in their nursery. These included *C. Harrisianum*, *euryandrum*, *porphyreum*, *Arthurianum*, *œnanthum*, *vexillarium*, *tessellatum*, and the charming little *C. Fairieanum*, one of the prettiest of all the species, but one which is, unfortunately, now becoming extremely rare. This fine group of Lady's Slippers shows well the work there has been done in originating beautiful new varieties by means of hybridisation within the last few years, and what is remarkable is the fact that all are distinct from each other, and, without exception, handsome enough for general cultivation. Other Orchids shown with these were *Cœlogyne ocellata*, a beautiful autumn species; *Odontoglossum crocidipterum*, *Dendrobium longicorne*, and *D. Curtisi*, a new species in the way of *secundum*, and another new species.

From the Victoria Nursery, Upper Holloway, Mr. Williams contributed a rich collection of Orchids and other beautiful exotics. Among the Orchids were such varieties as *Grammatophyllum Huttoni*, *Zygopetalum Gautieri*, *Cirrhopetalum Thouarsi*, *Miltonia spectabilis radicans*, *Oncidium chrysothrysus*, a species in the way of *varicosum*, very bright and beautiful with its rich yellow flowers. Of *Cypripedium Harrisianum* there was a good specimen with numerous flowers, also of *C. selligerum* and *vexillarium*, two handsome hybrids. That old and noble Orchid, *Odontoglossum grande*, was shown to perfection, its large and handsome blooms being a great attraction. Certainly few of the new introductions can equal this fine Orchid, and none can surpass it. *Oncidiums* of various kinds were represented, and a fine plant of *O. ornithorhynchum* was particularly noteworthy, while plants of the charming little *Pleione lagenaria* gave an aspect of brightness to the whole group.

A similarly fine collection came from Mr. Bull. Besides the certificated plants were *Dendrobium heterocarpum philippinense*, a variety that will eventually prove one of the most valuable of autumn-flowering plants; *Odontoglossum tripudians xanthoglossum* and a variety similarly named of *O. Halli*, both strikingly handsome. *Oncidium*

*varicosum* and *O. incurvum* were shown unusually fine, and the exhibitor was deservedly awarded a cultural commendation for both. The noble *Lilium neilgherrense*, with its large creamy white flowers, was represented by a fine plant from Mr. Bull's nursery, where it is grown numerously and well.

A group, consisting chiefly of Orchids, came from Mr. James' nursery, Lower Norwood, among which were fair examples of that unique Orchid, *Vanda cœrulea*, which is unfortunately far too scarce in this country. Mr. James appears to treat it more as an epiphyte than usual, a plan that seems to suit the Orchid well. Other noteworthy Orchids in this group were the rare *Odontoglossum hebraicum*, *Oncidium Rogersi*, and *O. Forbesi*, the latter particularly fine, *Saccolabium Blumei*, and *Oncidium Weltoni*, an Orchid that deserves general cultivation on account of its continuous flowering and handsome appearance.

The brightest display of the meeting was the collection of Dahlias, chiefly single varieties, from Messrs. H. Cannell and Sons, Swanley. The single Dahlias were a source of great attraction, as they always are when exhibited. Many of the finest sorts were shown, exhibiting a great diversity of colour and displaying that gracefulness that renders these flowers so valuable for cutting. A selection of the best sorts shown are *Paragon*, *Gracilis perfecta*, scarlet; *Alba*, pure white; *Yellow Dwarf*, Morning Star, bright scarlet; and *Painted Lady*, a new colour, a rosy magenta, very fine. A small double flowered sort of a brilliant red, named *Glare of the Garden* or *Fire King*, is said to be a first-rate sort for planting in masses, as the habit is dwarf and extremely floriferous. The singularly beautiful *Cactus Dahlia Juarez* was shown better on this occasion than it ever has been and made a brilliant display, some of its branches bearing as many as four flower-buds, thus refuting the statement that it is a shy flowerer. The above, together with collections of cut blooms of single and double *Begonias*, *Primulas*, &c., made up an attractive show.

Fancy and Pomponé Dahlias were represented by a numerous and excellent collection from Messrs. Rawlings, Romford, who grow this flower to perfection, particularly the finer named sorts. Among the large show kinds, the superb deep crimson *William Rawlings* was noteworthy, as were also such beautiful sorts as *Ethel Britton*, *J. Standish*, *Shirley Hibberd*, *J. B. Camm*, *Flag of France*, and *General Roberts*. The Pompones, too, were excellent, and included some of the finest sorts.

A few cut hardy flowers were exhibited by Mr. J. T. Riches, Grove Nursery, Tooting, among which were a new single Dahlia named *Lovely*, a beautiful flower of a rich reddish crimson, exquisitely pencilled with yellow; *Helenium autumnale*, one of the best of yellow Composites; *Aster Novi-Belgii roseus*, and *A. salsuginosus elatior*, both good kinds, and a remarkably fine flower-stem of *Senecio pulcher*, bearing a score or more of flowers and buds, one of the finest examples we have yet seen. Mr. Salter, Streatham, showed a new *Chrysanthemum* named *Lady Selborne*, a lovely flower, a pure white sport from that excellent sort, *James Salter*. New *Coleuses* were shown both by Mr. King and Mr. Lloyd; the former had, besides that certificated, *Mrs. Vogan* and *Columbine*, both with foliage of the most brilliant hues. The productions of Mr. King among *Coleus* seem each time to eclipse those preceding them, as the present fully exemplify. Mr. Lloyd's group of new sorts, too, were particularly fine and well worthy of certificates, though, no doubt, the committee think it not advisable to distinguish many of these popular foliage plants at a time. Mr. Balchin, Brighton, showed again his new double white *Mignonette*, which has been so much admired everywhere this year; and Mr. Goldsmith, Bletchingley, sent a plant of *Calla æthiopica* bearing triple spathes, a peculiarity which is said to be constant in this particular plant. A collection of new *Abutilons* from Mr. George, Putney Heath, contained some sorts an advance upon older kinds, *King of the Scarlets*, *La Grande*, and *Brilliant* being especially fine.



An extensive miscellaneous group of plants from Chiswick contributed largely to the attractiveness of the meeting, for, no doubt, Mr. Barron had no idea that other exhibits would have been so numerous.

**Fruit.**—Some wonderfully fine fruits of Pine-apples were shown. Mr. Coomber exhibited from Hendre Park, Monmouth, a superb fruit of the smooth Cayenne, which could not be less than 9 lb. in weight, and for which the exhibitor was appropriately awarded a cultural commendation. Mr. D. Wilson, gardener to the Earl of Fortescue, Castle Hill, Devon, showed as usual some splendid examples of the smooth Cayenne variety also, one weighing 8 lb. 2 oz. Mr. Roberts, gardener to the Baroness Rothschild, Gunnersbury, contributed a pair of Queens weighing respectively 5 lb. 12 oz. and 5 lb., both very handsome fruits. Lord Ebury's gardener (Mr. Mundell) exhibited from Moorpark, Rickmansworth, four grand examples of the Queen variety, which indicated well how skilfully this Pine is grown there.

**Grapes.**—The exhibition of Grapes from Messrs. Lane's nursery at Berkhamstead was an attractive feature, the examples being very fine. There were eight well filled baskets of the following sorts—Black Hamburgh, Alicante, Muscat of Alexandria, Trebbiano, Muscat Hamburgh, Barbarossa, Gros Colmar, and Golden Queen, the last being particularly finely coloured. Mr. Woodbridge showed from Syon House Gardens bunches of Foster's Seedling, that showed to perfection the high quality of this fine white Grape at such a late date.

**Apples.**—These, as we before remarked, constituted the main feature of the meeting, and the fruit was uniformly good throughout the whole of the collections. Messrs. Veitch contributed a splendid collection, consisting of about 160 dishes, and as many sorts grown entirely on young trees in their nursery at Fulham. The majority of these fruits were remarkably fine examples, having been grown on the English Paradise stock. Some few, however, on the French Paradise were exceptionally fine, and a finer dish of Ribston Pippins from trees on this stock would be difficult to find, as they were large, highly coloured, and of full flavour. The following are some few of the sorts we singled out as being in very fine condition: Of kitchen sorts, Barker's Seedling, a large handsome fruit of great excellence; Annie Elizabeth, also very fine; Beauty of Kent, Waltham Abbey Seedling, Golden Noble, Queen Victoria, Peasgood's Nonsuch, D. T. Fish, Lord Suffield, Tower of Glamis, and Lord Derby. Of dessert kinds, King of the Pippins, Margil, Cox's Orange Pippin, Worcester Pearmain, Scarlet Nonpareil, Adams' Pearmain, and Fearn's Pippin. A silver Knightian medal was awarded.

A similar award was made to a fine collection of Apples from Messrs. Lane's nursery, Berkhamstead, comprising about 100 dishes, all of fine quality, the finest including many of the sorts named above, and it was interesting to observe the difference in the quality between some of the Berkhamstead fruits and the Fulham collection, attributable no doubt to the stock, soil, and climate, and on the whole Apples seem to thrive marvellously well with Messrs. Lane. A collection of Nuts also came from this nursery. From Ealing Mr. R. Dean showed a smaller, but good collection of Apples and Pears; among them the American Mother and Beauty of Hants Apples were noteworthy for their fine growth, and the same exhibitor likewise showed a collection of Grapes grown on a south wall unsheltered. The kinds that seem to thrive and ripen their fruits best with him are Frankenthal, Royal Muscadine, and Buckland Sweetwater, of which there were some commendable bunches. This interesting display showed well what varieties are best suited for open-air culture. A bronze medal was awarded to Mr. Dean.

Mr. Steggles, Faulkner's House Gardens, Hadlow, Tonbridge, exhibited a good collection of Pears in about three dozen varieties. A remarkably numerous and fully grown collection of Apples, all legibly named, was shown from the

Society's garden at Chiswick. No fewer than 200 sorts were displayed, all of which had been grown in the Society's garden. As this is such a thoroughly representative collection, it was suggested that it should be allowed to remain for some time at South Kensington, in order to allow visitors to inspect it leisurely, and also to enable cultivators to name varieties from it. Various smaller exhibits and single dishes of fruit were shown; among others was a remarkably fine dish of Loddington Apples from Mr. E. Gandy, Boughton, Maidstone, showing well what a handsome Apple it is when well grown. Mr. L. Killick, of Langley, showed branches of Apple trees heavily laden with fruits, as examples of the great productiveness of his Kentish orchard. Some excellent fruits of Ecklinville Seedling came from Mr. Balfe, Dublin; and Mr. Smith brought from Mentmore some fine samples likewise.

A good dish of Peach Sanguine-Grosse, an American variety, was shown by Mr. Haycock, from Barham Court, Maidstone. The committee considered the flavour inferior, though it is a handsome looking fruit. The same exhibitor also brought a bunch of the Cheshire Plum, which seem to be an excellent sort.

**Vegetables.**—Two dishes of Onions from Messrs. Carter and Co., High Holborn, were shown. These were Tennis Ball, a rather large oval sort, and Giant Rocca, a handsome root of somewhat flattened shape. Messrs. Veitch had a large collection of Kales, representing most of the sorts grown, one, the Neapolitan, being considered exceptionally fine. Apart from their culinary value, these Kales are really very ornamental, and might be effectively employed in various ways in embellishing the garden. The group exhibited comprised a great diversity of foliage, both as regards the colour and the cutting, some being beautifully curled and crimped. A collection of some 120 sorts of Potatoes that had been under trial at Chiswick this season was also shown, and it, too, was a most interesting feature, as it comprised the best sorts in cultivation, besides many new kinds.

**Special prizes.**—The competition for Messrs. Hooper's prizes for a dish each of Hooper's Round White, Covent Garden Perfection, Pride of America, and Beauty of Kent Potatoes was held on this occasion. There were only two exhibits, the best being from Mr. C. W. Howard, Bridge, Canterbury; the other from Mr. G. Steggles, Faulkner's House, Hadlow, Tonbridge.

## THE ROSE GARDEN.

**Autumnal Roses.**—On the 7th instant I cut the following Roses in very fine condition at the Girtford Experimental Garden mostly from standards. Many of the blooms, and notably Alfred Colomb, were equal in size and superior in colour to those of the July gathering. The best were Alfred Colomb, Senateur Vaisse, Dr. Andry, Auguste Rigotard, Chas. Lefebvre, General Jacqueminot, La France, Baroness Rothschild, Charles Darwin, Dupuy Jamain, Marie Baumann, Paul Neron, and Duke of Edinburgh, all autumn-flowering Hybrid Perpetuals; Belle Lyonnaise, Bouquet d'Or, Mad. Berard, Gloire de Dijon, Souvenir d'un Ami, Devoniensis, Catherine Mermet, Anna Ollivier, Marechal Niel, Niphetos, and Triomphe de Rennes amongst Teas and Noisettes; and Souvenir de la Malmaison amongst Bourbons. These would have made a better stand of twenty-four than I could have gathered during many of the June and July days. I regret not to find that excellent new Rose Gabriel Luizet in the list; on the other hand, Mabel Morrison, although absent from it, has lately shown herself an improvement on her summer form, her autumn colour here being pure white and her substance greater. Bouquet d'Or and Mdle. Berard are, in my opinion, both superior in every way to their parent, Gloire de Dijon, as they are equally hardy and vigorous, the blooms richer in colour, but distinct from each other, and for one well formed flower of old Glory, ten may be cut from each of her descendants. The soil on

which the Roses at Girtford are grown is an unenriched boulder clay combined with the light sandy staple of the district—subsoil gravelly. The Brier cutting, seedling Brier, and De la Grifferaie are preferable to the Manetti as stocks for dwarfs, but standards on the Brier appear to furnish the larger portion of blooms, and certainly it is so this autumn.—T. LAXTON, Bedford.

**Roses in Pots.**—How should I treat a small quantity of Roses in 8-in. pots which through neglect have become full of worms? I have got rid of the worms, but unfortunately they have thoroughly impoverished the soil.—BOWDON. [It is too late in the season now to repot or to begin to shake the roots out of the sour, impoverished soil, but you might turn the balls out, remove the crocks, and see that the drainage is clear; then return the unbroken ball into the pot; remove 1 in. or 1½ in. of the surface soil and refill the pot with half loam and half rotten manure, and if at hand a sprinkle of bone dust. Put them under cover and set the pots on slate to prevent any fresh worms disturbing the soil.—GEORGE PAUL.]

**The Macartney Rose.**—This is full of flower now on a south wall at Loxford Hall.

## THE FLOWER GARDEN.

**Hardy bedding combinations.**—If not already done, no time should be lost in removing the summer occupants of the flower beds and transferring thereto the spring stock, which should be finely rooted and ready for the purpose. I have been amusing myself at this work for some days when other engagements permitted. I should premise I never dream of planting or transplanting a flower bed without previously manuring, and, when convenient, changing the surface soil. One bed I expect to be showy has a score of varieties of rooted Carnation cuttings—this year's—down the centre, then double alternate lines of Pansies (seedlings), with Japan Primroses outside. Another centre; Irises, next Alyssum saxatile, and then perennial Candytuft. Another, transplanted Phloxes in the centre, Dianthus multiflorus and variegated Arabis at the edge. Twenty more are to be filled, and I find no difficulty in finding materials, without any pretence to a collection.—W. J. M.

**Plantain Lilies.**—J. H. W. Thomas asks (p. 381), "What is the best time for increasing by division the Funkias or Plantain Lilies?" I reply, Now. If the plants have been long in their places, they will have become deeply rooted; after lifting them, carefully shake the soil well away from the crowns and roots, and divide them singly or as required with a knife; two good kinds for edgings of the small-leaved section are japonica and spatulata.—E. JENKINS.

**Lilies for woods.**—What Lilies are most suited for growing under the partial shelter and consequent drip in the more open spaces in a wood, the soil being sandy peat?—R. W. [Try auratum, superbum, pardalinum, Martagon and varieties, Browni, croceum, tigrinum and varieties, longiflorum, giganteum, Humboldtii, dalmaticum, canadense and varieties.—W. G.]

**Hardy red Water Lily.**—Having received a few seeds of Nymphaea alba var. rosea from Messrs. Fröbel, I should be glad to be told how to sow them; they came in water. They are meant to be grown in a tub on the lawn.—A. C. BARTHOLOMEW. [Sow the seeds in small pots on the surface of fibrous loam pressed flat, cover them with a sprinkling of fine soil, and then place the pots in a tub of water, so that about 1 in. of water may be above the soil. Keep the water at a temperature of about 60°, and carefully remove all coniferoid growth as soon as it appears.—W. G.]

**Browallia elata.** Mr. Ross states that this annual has turned out very well with him as a bedding plant this year, flowering well through the autumn at Highclere.

**Planting aquatic Irises.**—What is the best time of year for planting aquatic Iris roots out of doors? Would the present or next month do?—G. J. C. [The present month is as favourable as any, but any time almost will do.—G.]



## THE JERUSALEM SAGES.

(PHLOMIS.)

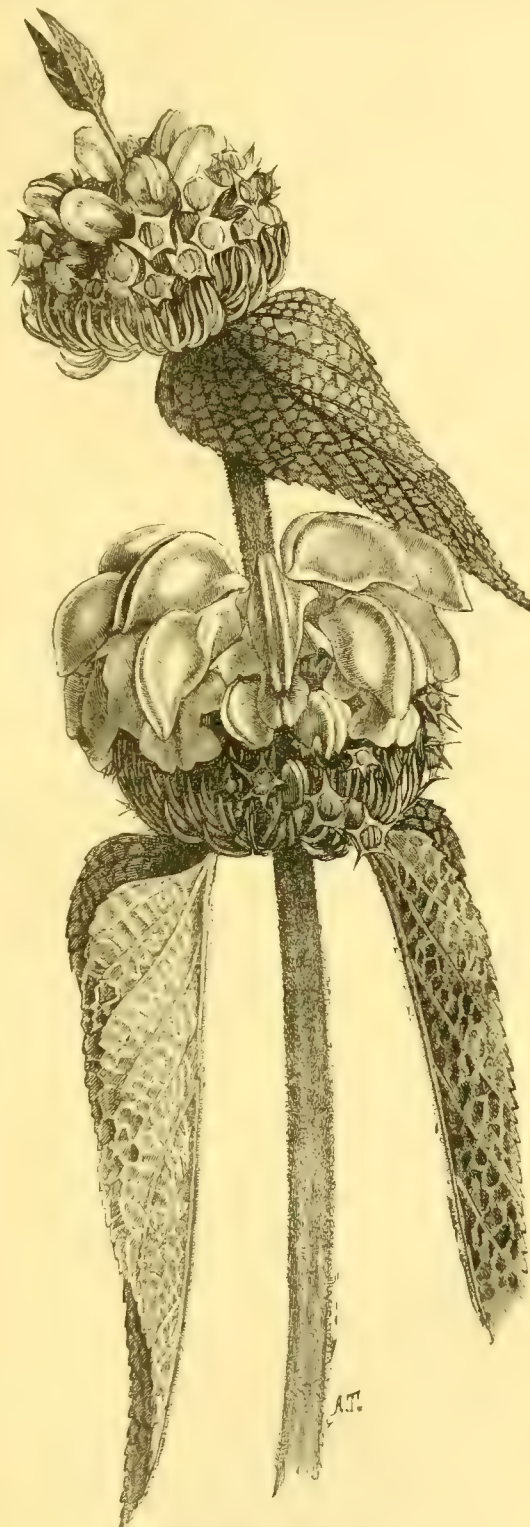
THESE rank amongst the finest of hardy plants belonging to the Sage family. Of Phlomis there are about a dozen species and varieties in cultivation, and amongst them great diversity of size and habit. Some, such as *P. fruticosa*, are shrubs, others noble herbaceous plants, while others again, such as *P. armenaica*, are sufficiently alpine in character to allow of their being grown in the rock garden. Phlomis, likewise, have a wide range of distribution. Most of them are natives of Europe, chiefly the south, and some are Asiatic. The most desirable of the species to cultivate is *P. fruticosa*, a half shrubby plant, growing from 3 ft. to 4 ft. high; its branches and leaves are covered with a rusty down, and the flowers are produced in large dense whorls, clothing about half the length of the branches. Their colour is a rich yellow, and they are very attractive during June, July, and August. This species is perfectly hardy, thrives well in any common soil, and may be either grown in the mixed border or associated with shrubs, but it should always be placed in an open spot. *P. ferruginea* is similar, but not so hardy, and, moreover, not such an effective plant as the preceding. There are a few other shrubby kinds, but none of them are so fine as *P. fruticosa*.

Of herbaceous kinds the best is *P. Herba-venti*, a strong growing plant, which forms an erect spreading mass from 1 ft. to 3 ft. high. Its flowers, which are borne in dense whorls, are a rich purplish violet. *P. tuberosa* and *purpurea*, both with purple flowers, are handsome plants when grown well, and, with *P. Herba-venti*, are excellent subjects for naturalising, as they flourish in any soil or situation. The best herbaceous kinds with yellow flowers are *P. Russelliana* and *P. Samia*, both of which grow about 3 ft. high and bear in summer a profusion of flowers in whorls. They are strong growers and do well for naturalising.

*P. armenaica*, a very dwarf species, has neat silvery leaves and reddish-purple flowers, and is very suitable for the rock garden. *P. cashmeriana*, a handsome species, has lately reappeared in cultivation. It is herbaceous and somewhat resembles *P. Herba-venti*, but the flower-heads are denser; the flowers, too, are larger and have a broad violet-purple lip. All the species are easily propagated—the shrubby kinds by cuttings and seed, the herbaceous sorts by division and seed, which latter they freely produce. W. G.

**Variegated Stonecrop** (*Sedum carneum variegatum*).—This is a pretty little plant, suitable for edging small flower beds in summer, or for hanging baskets in cool houses or apartments. Although hardy, it enjoys protection in the winter, losing its foliage in severe weather. The variegation is very constant, the stems being suffused with pink, so that when well cared for it has a very pleasing appearance. Where vases are made up with flowering plants for open-air decoration, this little *Sedum* should be extensively used, as when planted in good soil it grows with great freedom, and quickly forms a dense curtain of pretty variegation.—J. CORNHILL.

**Dahlia Juarezi.**—This beautiful Dahlia ought to find a place in every collection. The description of it and coloured plate in THE GARDEN of May 7, 1881, induced me to purchase two plants

Shrubby Jerusalem Sage (*Phlomis fruticosa*).

of it, and I can now testify that it fully bears out the description given of it. I feel sure that it cannot fail to become a universal favourite, as both when in bloom on the plants, and when cut and put in vases for drawing-room decoration, it is a marvel of beauty, and distinct from any other Dahlia in cultivation.—R. GREENFIELD, Warwick.

## PANSIES AND VIOLAS FOR SPRING DECORATION.

THESE are of so hardy a character, so dwarf and compact in growth, so free blooming, and so varied and pretty, that it is no wonder they are so much used for spring decorating. In order to have beds of even growth and similar in variety, plants of known varieties are preferable to seedlings, as the latter are somewhat uncertain. Those who have grown a collection for garden decoration during the summer will now have the plants in vigorous character, and throwing up a number of young growths. These may be divided and planted out at once, either in the beds in which they are to bloom in spring or in nursery beds, preparatory to bedding out in February or March. The soil in which they are to be planted should be light and free, and if it be firmly pressed about the divided parts, they will soon make root and commence to grow. A well-established plant will divide into many rooted growths, especially if the plants were top-dressed with some light rich soil two or three times during the summer. If there is nothing for the young growths to root into, there will be a lack of rooted plants in autumn. Those who grow Pansies know well that during the summer the old roots rot to a great extent, but the plants are renewed by the young growths throwing out roots near the surface; hence the necessity for top-dressing in summer. It may be added that in planting out now some Cocoa-nut fibre added to the light compost gives the divided pieces something into which they can root readily.

In order that the plants designed for spring flowering should succeed, it is well to dig the beds deeply, giving a dressing of well decomposed manure, and previous to planting placing over the surface a good layer of siftings from the potting bench. Plant somewhat deeply, and press the plants firmly into the soil. To have a good bloom in spring, the beds should be planted in October, so that the plants can get firmly established. For summer and autumn blooming, the plants may be put out from the nursery beds any time in February, March, or April. Top-dressing will always be found of great benefit at any season of the year. In early spring especially it will greatly aid in the development of the plants. Some very pretty new varieties of bedding Violas have been raised by Mr. William Dean, florist, Walsall, saved from a large number of seedlings. Among them are Clevedon Purple Compacta, very compact in habit and very free blooming; Golden Queen of Spring, a beautiful variety, of good size, of a deep golden yellow colour, a pure self of excellent constitution; Lord Darnley, a seedling from Holyrood, of a richer and darker colour, very fine; Queen of Purples, a seedling from Clevedon Purple, dwarf, compact, and very fine; Queen of Violets, a violet counterpart of the foregoing; True Blue, rich, bright blue, dwarf, compact in habit, very free, fine in form and continuous in flowering; Yellow Beauty, pale yellow, very good; and Yellow Dwarf, pale yellow, entirely free from markings, very dwarf, and an early, free bloomer. It is well that new varieties are continually being produced; there is plenty of room for improvement, and the nearer all ideal perfection

can be reached, the more welcome will all the varieties be to cultivators. R. D.

**Oxalis incarnata.**—This is, I believe, the name of a pretty little species of Wood Sorrel which deserves notice, on account of its extreme hardiness and suitability for growing in any damp,



half-shady spot, where it thrives well. I have had the plant now for several years, and it never fails to re-appear every summer, covering the ground with dwarf, compact cushions of the freshest possible green, and dotted over with delicate, whitish, or purple-tinged flowers. The leaves are usually produced in tufts from the short spreading stems, and the latter frequently bear little bulblets at their apex. — R. C., *Kensington*.

#### LIFTING AND STORING DAHLIA ROOTS.

THE time is drawing near when these operations must receive attention. Already in some parts there have been 6° of frost, and frost and storm will diminish the beauty of our Dahlias. Many writers on the cultivation of the Dahlia omit all mention of instructions as to the best mode of keeping the roots through the winter. The invariable rule is to leave the plants until the tops are cut back by frost, and then to lift them as soon as possible after this happens—the sooner the better. Some growers, as a precautionary measure, prefer to take up the roots before the frost attacks them while they are in a healthy state, and free from any taint of the decay frost will leave behind in the stems. But let it be done whenever it will, a fine and drying day should, if possible, be selected for the operation. The main stem and lateral branches should be cut away, severing the stalks about 9 in. or so from the roots, and then the roots should be carefully lifted, taking care to go wide enough with the spade so as not to injure the tubers. When lifted a pointed stick should be used to separate the soil from the roots, which should then be allowed to dry in the open air and sun as much as possible. The tubers should not be watered or made wet; the great aim of the grower should be to keep them as dry as possible. By leaving some of the soil adhering to the roots they are kept cool and a little moist, and do not shrivel so quickly as when the tubers are dried at once. Before removing them to their winter quarters the name of each variety should be placed on the roots. A wooden, metal, or leather label can be used, fastening them with lead or copper wire. Either of these is preferable to thin iron wire, as it so soon corrodes and rusts through.

The roots being thus ready for storing, the next matter is the proper place in which to deposit them for the winter. Our large trade growers have a cool, dry shed fitted up for the purpose with shelves, the walls lined with mats, leather, sacking, or anything that will exclude frost. In severe frosty weather a portable stove is introduced; nevertheless the roots are well covered over, for they are very susceptible indeed of frost, and are ruined for propagating purposes if injured by it. The amateur who has but a comparatively few roots can store them away in a dry cellar, but they should not be placed on a brick or stone floor, but raised above it. The floor might be damp, and the roots would become mouldy in consequence; a bottle rack, or a stage made like it, is the best place to place the roots on, and let it be remembered that the main stem, being hollow, should be turned upside down to allow the moisture to run away before the roots are placed in an upright position.

So very much depends on drying the roots previous to storing them away, that its importance cannot be too much dwelt upon. If the roots were taken up, washed clean, and then thoroughly dried, they would surely shrivel up, and be but of little value in March next. All that is required is to dry the surface of the tubers, and when they are finally stowed away the stem may be cut down to 3 in. or so—certainly right into the hard wood, so that none of the green portion remains, as this is certain to decay during the winter and endanger the crown, which is the portion of the root most necessary to be preserved, as it is from the immediate base of the stem that the young growths out of which cuttings are made spring. Those who have a greenhouse can keep the roots under the stage, which is a good place for the

purpose provided they do not get and keep wet; but they certainly give a slovenly appearance to the house, which should always be neat and tidy. Dahlia roots require to be wintered in a building perfectly free from frost—not too dry, or the tubers will shrivel; not too wet, or they will become mouldy. A dry cellar is one of the very best places in which to preserve Dahlia roots. It is a mistake to pack the roots away in bran, sawdust, sand, &c., as some have suggested. Damp is very likely to be engendered by any of these materials, and irremediable damage is done thereby. The roots cannot wither and lose their vitality if kept dry and cool; if put into a hot dry place, the result will not be so satisfactory.

Those who have roots of very choice and scarce sorts, or some select seedlings, can scarcely do better than pot them in large pots, when the soil is dry, without shaking the earth from them, and then place them in a cool dry cellar, where no damp can reach the soil. In the spring, when the tubers are turned out of the pots it will be found that they and even the small fibres will be preserved as fresh and perfect as when they were raised from the ground. This is a certain and safe way of keeping the most delicate and choice varieties, the trouble of potting and the space the pots occupy being the only objections. R. D.

#### LACED POLYANTHUSES.

I WAS much pleased to read Mr. Brockbank's remarks (p. 339) on the Polyanthus. It promises well for the future of this beautiful flower when such ardent florists as Mr. Barlow and Mr. Brockbank have taken it up; they have both the means and the will to do the best that can be done for it, both as to its culture and the raising of seedlings. It is quite true that all the best varieties have been raised in the north or the midland counties, but for this I think there is a reason other than merely local interest. Growers in the south of England, or at least near London, have the greatest difficulty in keeping their plants alive, leaving keeping them in health out of the question. It is difficult to keep red spider off the foliage in summer, owing to the hot dry weather; it buries itself in the woolly substance on the undersides of the leaves, and is dislodged with great reluctance. Notwithstanding the precaution we took of planting our Polyanthuses in the shadiest part of the garden, and giving them plenty of water, they are this season so debilitated by the attacks of red spider, that our bloom next year must be poor indeed. Mr. George Smith, of Edmonton, an ardent florist and admirer of the Polyanthus, has been even more unsuccessful. He has, I believe, lost all his seedlings, including the Duke of Wellington. This variety perhaps lacked the refinement of Buck's George the Fourth at its best, or Cheshire Favourite, but it was a distinct and good flower; probably it is now lost to cultivation. We thought very highly of Mr. Barlow's new seedlings when he exhibited them at South Kensington. Sunrise was considered to be a great advance on Lancer, the only red ground we have, and John Bright as a dark flower has been well proved in his own garden, and was also well shown at Kensington, where it received as well as Sunrise a first-class certificate from the northern florists themselves, and was much admired by everybody. We hope again to offer prizes for seedlings in London next season, and would be truly glad if Mr. Brockbank would either himself exhibit or prevail upon his friends who have seedlings to do so. In order to test the quality of seedlings, bring them to the exhibition, and place them against the best of the named varieties; if they beat them, as Mr. Barlow's seedlings did, that is the best evidence of quality that can be adduced. To many persons the fancy Polyanthuses afford a treat of no ordinary kind. As they were exhibited last season, they formed a very interesting part of the exhibition. Mr. Richard Dean, of Ealing, has taken the lead with these fancy varieties for some time, and I think his group of twelve varieties were the best ever exhibited, the colours being so rich and the form of the flowers more perfect

than usual. The best way to get up a stock of these fancy varieties is to raise seedlings. The old plants have an inveterate tendency to go the way of the laced varieties. All of them require a rich, moist, moderately clayey soil. J. DOUGLAS.

#### SINGLE DAHLIAS.

I QUITE agree with much that "A. D." (p. 340) says about the single varieties of Dahlia variabilis. Paragon is really a very beautiful form, and should be grown to cut from, although the flowers, even when cut, do not last well. On the plant they are over in a day. The single white is also pretty, but if a variety could be raised with smaller and more elegant flowers it would quickly be displaced. I do not know whether it is worth while to trace the history of this single white Dahlia; at any rate, the alba of the Oxford Botanic Gardens seems to be the same as a variety grown for some years by a Mr. Sidebotham, of Cheshire, under the name of Stella Bianca. It was introduced to the public under that name by Mr. Pearson, of Chilwell. If hosts of seedling Dahlias of this type are introduced to our gardens, they will soon be treated as weeds. D. coccinea and its dwarf forms are better adapted for producing cut flowers. The best forms of D. lutea ought also to be grown for the sake of variety. I would recommend four varieties of single Dahlias to be grown to produce flowers for cutting, viz., Paragon and Stella Bianca of the D. variabilis type, and D. coccinea and D. lutea; only the best forms of the two last should be grown. Even for the largest gardens I do not think more than these are required. The small flowered Pompones are excellent for cutting from, and those named in THE GARDEN (p. 340) are the best of them. They ought to be shown in bunches, as Mr. Turner exhibited them, when they would form a striking feature at the autumn exhibitions. I am sure "A. D." cannot have forgotten the beautiful exhibition of Dahlias and Roses, side by side, at the great International Show at Manchester; and not only so, but the Carnation, Pansy, Phlox, Hollyhock, and Gladiolus can all be exhibited together, as they have been in the past, and may be in the future.

J. DOUGLAS.

#### BEDDING PLANTS IN SUCCESSION.

OUR flower garden here is simple in design and laid down on grass, preference being given rather to a large space of well kept lawn than to flower beds. If spared, I am looking forward to the time when I shall be able to plant our flower garden without a single Pelargonium. For these last few years I have been and am still looking out for some fine old hardy, or half hardy plant that will make a bed in the flower garden and look gay from July to the present time or later, but I find that this cannot be accomplished without having at least two varieties of plants in the same bed. I have succeeded in accomplishing this to my satisfaction, and now intend introducing a third variety in order to have a full succession of bloom from the end of May until the middle or end of October, and such plants must be self-supporting, as nothing is so disagreeable as having a graceful plant tied up like a birch broom. I plant two, four, and six beds of the same varieties or combinations. We have six beds with a Golden Yew in each at the extreme angles of the walks—three planted with Campanula persicifolia alba fl.-pl. and Lobelia fulgens. This Lobelia grows from 4 ft. to 5 ft. high, the colour of the flowers being a rich scarlet, with deep dark bronzy foliage and stems. The Campanula grows 2 ft. high with slender bright green stems loaded with large, double, pure white flowers pushing through the deep dark bronze foliage of the Lobelia—a beautiful combination. The Campanula commences flowering in the end of June, and the Lobelia about the first week in August. The Campanula has now (Oct. 8) some fine flowers on it. The Lobelia is in the full perfection of beauty. The bed is also edged round with Sedum spectabilis in full flower.

RICHARD NISBET.

Aswarby Park, Folkingham.



**Bulbs for a grave.**—Snowdrops, Crocuses, and Daffodils of sorts will outlive many of the inscribed memorials. At Clyst St. George, Devon, many graves are decorated with such bulbs, and very gratifying and ornamental they are in the spring.—H. T. E.

**Romneya Coulteri and Argemone grandiflora.**—I have been much struck this autumn by the almost exact similarity existing between the handsome blooms of the above named two otherwise totally distinct and different plants. The first known as the great Canadian Poppywort, and well figured in Vol. XIII. of *THE GARDEN* (p. 449), is an almost hardy perennial, with stout woody stems, and small, deeply cut, glaucous foliage. The other, figured in vol. lviii. of *Botanical Magazine*, tab. 3073, and there described as a hardy perennial, is, as far as I am acquainted with it, only an annual, with large white-veined Thistle-like foliage, and is a native of Mexico, but the flowers are hardly distinguishable one from the other.—W. E. G.

**Clematis Viticella rubra grandiflora.**

—Of the many kinds of Clematis now in cultivation, few are so distinct or effective as this, and yet it does not appear to be extensively grown. Probably owing to the flowers not being so large as those of the Jackmani and lanuginosa forms, it is not held in such high favour as those kinds, but what is wanting in size is made up for in number, for this Clematis is one of the most free growing and free flowering of the family, and the colour of the flowers, a bright claret red, makes it effective. It thrives well in almost any soil. The Viticella type should be more worked than it now is by hybridisers, many of the varieties now raised, though very fine from the florist's point of view, being too deficient in stamina to be of much value for the open air. What we require is hardiness, with a free-blooming habit.—JOHN CORNHILL.

**Salvia interrupta, or Ash-leaved Sage.**

—This distinct and beautiful hardy perennial Sage has bloomed abundantly with me for the first time this summer, and is now ripening seed, a few grains of which I shall be happy to give to any reader of *THE GARDEN* sending me a stamped envelope addressed to themselves. The seed is of good size and vegetates readily, and the seedlings grow quickly and bloom the second year after being sown. This plant is figured both in the *Botanical Magazine* (vol. 96, tab. 5860) and in Sweet's *Flower Garden* (tab. 169), but the variety figured in the last named plate has white flowers, whereas that figured in the *Bot. Mag.* has flowers of a deep blue with a clear white throat. According to Mr. Baker, the variety figured in Sweet's work is incorrectly named and is probably *S. confusa*. *S. interrupta* was first introduced in the year 1798 from Morocco into the Cambridge Botanic Gardens, but had been for many years lost to European gardens, till reintroduced in 1867, from North Africa, by Mr. George Maw, of Benthall Hall, who sent seeds to Kew, where it bloomed in the following May. Should anyone sending for this seed wish at the same time for some seed of that handsome hardy border bulb *Galetonia* (or *Hycinthus*) *candicans*, they can have it in the same envelope. The seedlings of this plant if well grown for the first year or so in the house, sometimes bloom the third, but nearly all in the fourth year after sowing.—W. E. GUMBLETON, *Belgrove, Queenstown, Ireland*.

**Phloxes from seed.**—It ought to be better known than it is that nearly all our most beautiful garden flowers can be more easily propagated by seeds than by cuttings, and to the ardent admirer of any class of plants there is so much delightful anticipation in waiting for the opening of the first blooms of seedlings that anyone who has realised that pleasure will not, I think, afterwards relinquish the practice. Amongst others amenable to this treatment is the Phlox. The varieties of the late flowering or decussata section are now very numerous and good, and without doubt they are easily propagated by division of the roots, or

what is much better by cuttings, but in this way it is the same thing over and over again, whereas seedling plants will produce flowers all different from the parents and from each other. About the end of September or in October the seeds will ripen; the pods should be picked off singly from the best varieties; then lay them out in any airy room to dry, and sow their contents thinly on a hot-bed about the middle of March. We sowed some on the 21st of that month this year which produced 220 plants. As soon as the seedlings were large enough to handle they were planted out 3 in. apart in boxes of good soil, and kept growing for a few weeks in a cold frame. They were planted out in the open ground in June, and by that time they were from 6 in. to 1 ft. high. The weather was dry at the time, and the plants had to be occasionally watered, but they grew away freely, and the earliest of them began to bloom about the middle of August, when established plants of the named varieties were past their best. There has been a succession of flowers ever since, and the largest proportion of them are now (October 7) at their best, although the first flowers on many spikes are just opening, so that if the weather is favourable, we will have plenty of flowers up to November. We find, therefore, that it takes about five months from the time of sowing the seeds until the flowers open, and that they make a grand display for rather more than two months. Our scarlet Pelargoniums have been miserable during September, while the Phloxes have been delightful, both as regards beauty and perfume. Mark, too, the difference; the scarlet Pelargoniums had to be attended to all through the winter and spring under glass, while the Phlox seeds were wrapped up in a small paper packet, and the young plants only had the shelter of a frame for five or six weeks.—J. DOUGLAS.

**Autumn flowers.**—The borders here are very gay and have been so for some time past with single Dahlias, Antirrhinums, Lantanas, Delphiniums, Plantain Lilies, Campanulas, Cassia corymbosa, scarlet Lobelia, Mule Pinks, Anemones, tall Phloxes, *Salvia patens*, *Harpalum rigidum*, *Tritoma Uvaria*, and *Hydrangeas*. Added to these there is a good collection of Pentstemons, than which more showy plants cannot be grown for autumn decoration. Stocks and Asters we have too in quantity also, and roots of the useful summer blooming *Chrysanthemums*. All these are planted in large patches so as to have a good effect.—J. CROOK, *Farnboro' Grange*.

## NOTES AND QUERIES—FLOWER GARDEN.

**Gymnethrix latifolia.**—This fine Grass does well at Highclere, a fact worth noting, as it is natural to suppose it would require a warmer climate.

**Calceolaria scabiosæfolia.**—A bed of this in Mr. Gumbleton's garden at Belgrove, near Queenstown, is now described as bright and good—the best thing of its colour in the garden.

**Hedychium spicatum.**—Flowers of this hardy species come to us from Highclere, where it flowers in the open air. It is not handsome in bloom like the better known *H. Gardnerianum*.

**Tennis lawn** (p. 342).—In order to have a perfectly level tennis lawn, "Constant Reader" must take off all the turf, level the surface, and make it quite firm; then relay the turf.—W. R.

**Papaver umbrosum.**—"J." (p. 380) writes of this as a showy and brilliant-coloured annual, but surely this is a mistake; is it not a biennial? I saw it in Mr. Wolley Dod's garden this year and was much struck with it; he has kindly sent me seed of it, and describes it as a biennial.—DELTA.

**Herbaceous plants.**—Would it not be a boon if growers were to indicate not only what are worth growing, but those which ought to be avoided? Owners of small gardens—of which I am one—have to be select as regards their plants, and do not care to fill space with poor or difficult things. *Liatris spicata* has been very properly condemned. May I ask, Do any of your correspondents see any beauty in *Stobæa purpurea*? neither in foliage nor flower can I see anything, and shall now banish it.—DELTA.

## MARKET GARDEN NOTES.

**Late Strawberries.**—Late ripened house fruit of the best quality this year realised higher prices than usual. This fact will not surprise those who bear in mind how backward the spring was, and how ungenial the month of May proved. The harsh drying winds and cold nights which prevailed, and the almost entire absence of growing weather, not only retarded the progress of outdoor crops, but also materially affected the quality of the fruit, the consequence being that our fruit supplies from the earliest districts were late and deficient in quality. During the last week in May and in the first fortnight of June, good Napiers realised from 6s. to 10s. per lb., and so brisk was the demand that almost any amount would have gained a ready sale in Covent Garden at those prices. Very different is the case sometimes, for I have known the price to drop from 7s. per lb. to 3s. per lb. between the 30th May and the 3rd of June. This was, however, when the month of May generally was warm, and finished up by a burst of very hot weather, so that the Cornwall, Jersey, and French fruit, and the "pit" fruit came in in large quantities. Every year, too, new localities open up, so that instead of the earliest outdoor gatherings being, as was the case some years since, limited to France, the Channel Islands, and Penzance, Kent, Devonshire, Hampshire, and Surrey all furnish their quota. There is consequently now more danger of the market being glutted in the beginning of June than was formerly the case. Growers under glass generally get a good price when sharp frosts occur during the flowering period of the outdoor crops; the first flowers get cut, and as from these the finest fruit is obtained, the first gatherings are, of course, deficient in quality, and the time of gathering is thrown back considerably. The pit growers, who employ no artificial warmth, are especially benefited thereby, their seconds and small fruit realising good prices instead of being sold, as is oftentimes the case, at from 1s. to 1s. 6d. per lb. I consider it, however, a mistake to grow small fruit, especially on late plants. We never do so here; in fact, we rarely send a punnet of small or castways, as some term them, into market. Three berries to a truss are quite enough, and if the plants are well managed, tons of these will be firsts and the others seconds. It is large fruit that is in demand during May and later. Small fruit is a drug, and it is sometimes difficult to get 1s. per lb. for it, so that it is best to thin out well; nothing is lost by so doing.

**Hamburgh Grapes.**—Whether to the long continued depression in trade, or to the ever increasing importations of foreign fruit, is to be attributed the very low prices obtainable this autumn for home grown Hamburghs, I cannot say, but certain it is that the Grape trade at present is far from being in a state to encourage English growers. Black Hamburghs cut the latter end of September returned only 1s. per lb., and from this small amount has to be deducted carriage, portage, and commission, thus leaving a very small margin of profit indeed. It is true that the berries were not large, but they were well coloured and sweet, the bunches of good marketable size, and in some other respects in excellent condition. It must be remembered, however, that from the beginning of October to the middle of November Grapes are being pushed into market from all parts of England. Many of these are grown in plant houses, and the owners have to cut them soon after housing time to avoid loss from damping. This is especially the case towards the latter end of this month and the beginning of November, when a week or two of wet weather will fill the market to repletion. Market growers, as a rule, hold aloof at this time, for they know that quite as many good Grapes as are wanted are coming in from private sources. Wishing once to cut some Hamburghs the latter end of October, I took a sample of them to a fruiterer in Covent Garden, who asked what I wanted for them. I named a price. "Well," said he, "if you will keep them a fortnight longer I will give you what you ask, and maybe a little more. But just look at these; they



were brought to me to-day by the Marquis of A's gardener; he wants them cut in a week; there are about two cwt. of them. They are, as you see, rather better than yours, and I get them at 6d. per lb. less than you ask." The greatest enemy, however, to the English market grower at this time of the year is the Dutch Grapes. These, as a rule, are well coloured, firm, and fairly large in berry and bunch, and present a better appearance than many of the home grown Hamburgs; and when purchasers can buy them at about 6d. per lb., they do not care much about home-grown Hamburgs except of quite first-class quality. In Grapes, as in almost every kind of fruit, it is not the very fine samples that are seriously affected by foreign produce.

**Winter Lettuces.**—Where cold frames are not otherwise employed, they can be profitably occupied with Lettuces, crisp, fresh, bright samples of which generally meet with a ready sale. Those beautiful little Cabbage Lettuces that come from France during the winter are by many supposed to require a more favourable winter climate than our own to bring them to perfection. This is a mistaken notion, as I have more than once proved; with very little extra labour I have grown them quite as well in England as I did in France. Their great enemy is mildew, generated by excessive atmospherical moisture; but a timely dusting with sulphur will ward it off. To have them good in midwinter, the seed should be sown the last week in August, planting in frames about the latter end of September. This Lettuce has to be grown in the early winter, growth being progressive until about Christmas, when the heads should be well formed and ready for market. Speaking to a salesman about these French Lettuces once, he remarked that English grown heads would be of the same quality be preferred, and he appeared much surprised when I told him that I had some quite as good as the French. But, said he, "I do not think that it would pay Englishmen to grow them; we are selling these at a little over 1s. a dozen." Well, I think that would pay growers in this country. From the time of sowing to that of sending to market the glass would be occupied some three to four months only with them, and the crop would come off in good time for Strawberries, Cucumbers, Melons, or Tomatoes. The Parisian market gardeners make use of cloches for them, these being arranged either in long rows with space enough for a man to pass between, or in beds which, generally speaking, slope slightly. In either case some litter is thrown over them in severe weather, and very little air is given, for this Lettuce becomes more delicate in flavour and appearance when grown in a confined atmosphere. Under cloches, too, there is no fear of drip. I have, however, repeatedly grown them in frames, and by keeping the surface of the soil as dry as possible, and taking timely precautions as to mildew, I grew them quite as well as under bell-glasses. J. C. B.

**Turnip Rabiole.**—The *Bulletin d'Arboriculture* favourably notices this variety. It is an early kind, and is largely grown by many French market gardeners.—J. C., *Bullet.*

**Interesting aquatic plants.**—Mr. Robert Lindsay, who recently read a paper on these at a meeting of the Scottish Horticultural Association, said that they ought to occupy an important place in every garden, and should not be allowed to grow only (as they too frequently were) in outlandish places and in botanic gardens. *Victoria regia* required a large place to grow in; but there were other plants which could be grown in very small vessels—even a small tumbler could contain them; and in regard to the water needed for their nourishment, it could be either clean or dirty. *Pistia Stratiotes* (the South American Duckweed) accommodates itself to the size of the vessel in which it is placed. *Pontederia crassipes* is also easily cultivated. *Azolla pinnata* is a very fast grower; in fact, it is difficult to prevent it from growing and taking up space other than that set apart for it. *Salvinia natans* is a native of Italy; *Marsilea macropus*, the Nardoo of Australia; *Tri-*

*anæa bogotensis*, and *Herpestis stricta* are also interesting aquatic plants. *Ouvirandra fenestralis*, the Madagascar Lattice plant, was rather difficult to grow; the treatment which he had found it to do well with was a temperature of from 65° to 75°. Rain-water was preferable for it, and this required frequent changing, say a renewal of rain-water once a month. The water was all the better for being often stirred and kept clean. Attention to cleanliness was one of the most important points in its successful cultivation. It is propagated by division of the roots, and also by seeds. *Aponogeton distachyon* (the Cape Pondweed) is a beautiful plant and easily grown. *Hottonia palustris*, a British plant, with beautiful flowers; *Hydrocharis morsus ranae*, and *Vallisneria spiralis* were also described. Mr. Lindsay exhibited samples of all the aquatics referred to growing in glass bottles.

## TREES AND SHRUBS.

### BROAD-LEAVED SPINDLE TREE. (*BUONYMUS LATIFOLIUS*.)

It is a singular fact that such a handsome shrub as this, introduced to cultivation for upwards of a century and a half, should in our day need an illustration to fix its claim upon the attention of cultivators, but such is the case. It was only the other day that it was placed before the Floral Committee of the Royal Horticultural Society, when a first-class certificate was unanimously awarded to Messrs. Veitch for it. It is, without doubt, the handsomest of all the Spindle trees, of which there are about a dozen species in cultivation and a whole host of varieties. It differs from the common Spindle tree (*E. europæus*) in being much larger in size, in the leaves being much broader and more ovate, and in its fruit being larger. In autumn few trees or shrubs possess such a combination of grace and beauty; the fruits, which are bright red, are suspended on such slender stalks that they always droop, and when the capsules open and expose the orange-coloured seeds the effect is still finer; and the seeds hang a long time on slender threads, as in the case of the Magnolia.

It grows to about 15 ft. in height in this country, thus exceeding the height which it attains in its native habitat, the south of Germany and parts of South-Western Europe. Though strictly only a shrub, it should be treated as a tree—not crowded into a shrubbery, but allowed plenty of space in which to develop itself. It forms a handsome low tree for planting singly on a lawn—not quite isolated, but so placed that while it has plenty of room it appears but a portion of a group. In summer its broad leaves of shining green are handsome, and in winter its regularly arranged branches and clean reddish-green bark render it by no means an unsightly object. We have had bright bunches of berries of this Spindle tree lately from various sources—some from Mr. Ellacombe, of Bitton; others from Mr. William Paul, of Waltham Cross; and Mr. Lynch sent from the Cambridge Botanic Garden some fine sprays, from which the accompanying drawing was prepared. W. G.

**Pruning Camellias.**—Very few Camellia growers will, I think, care to see their plants so formal as the one referred to by "O. S." at Mentone. The most which cultivators would be disposed to do in using the knife about Camellia plants would be to shorten back inconveniently protruding shoots, or to thin out weak, useless wood. But when growing in the open air few hardy shrubs less need pruning than the Camellia. The growth is so steady and firm, yet so even, that the development goes on alike all over the plant, and the denser the growth and leafage the better.

Our insular tastes do not favour the free use of shears for the pruning of trees. Something natural and graceful is most appreciated. It may be added that of few blooming plants is more wood abstracted than from the Camellia when the flowers are cut, and that sort of pruning generally suffices. Plants in houses perhaps need rather more thinning, but out-of-doors there is little need for the use of the knife. A. D.

### THE SILVER FIR.

(*PICEA PECTINATA*.)

EVERY lover of trees will admit that the common Silver Fir is a noble ornamental tree; but few have recommended it as a remunerative plantation tree. No doubt in its infant state it is a tender plant, but when the tree is fairly established in a suitable soil it makes rapid advances, so much so that it is rarely surpassed by any other coniferous tree, the Douglas Fir excepted. Upon the Earl of Mansfield's estate of Logiealmond, at upwards of 1000 ft. above sea-level, at the base of the Grampian Hills, in a large Fir plantation forty years of age, the Silver Firs are growing luxuriantly, and are much larger in size than either Larch or Scotch Fir in the same plantation. Upon the estate of Lynedoch there are several magnificent specimens of this tree of large dimensions; the largest one was measured in 1878, when the height of its beautiful straight bole was 110 ft, girth 13 ft. 10 in. 3 ft. from the ground, and it contained 425 cubic ft. of timber in the bole alone. One commendable feature in its character is that on soils where Larch and Spruce are deteriorated with dry rot the Silver Fir is rarely affected with rot. It is seldom indeed that the Silver Firs planted in large masses alone, but when closely planted it can be reared up as straight and clean in the stem as either Larch or Spruce, and for producing shelter in belts no other tree will equal it. Twenty-one years ago I was employed to lay down belts of plantations for shelter upon a small estate of arable land near Perth in a very exposed situation. The belts were laid down only an imperial chain in breadth, and were enclosed with young hedges, composed of Thorn and Beech; the ground was planted with Silver Fir and Larch in equal numbers at 4 ft. apart. The estate shortly thereafter was sold, at which time my connection with the property ceased. Recently I paid a visit to the property on purpose to see the condition of these belts, which I found so far satisfactory. The hedges are strong and exceedingly healthy, but neglected. The Larch trees at an early stage of their growth made a very rapid start, and acquired the mastery over the Silver Fir plants, and as there is no resident forester kept on the property, the Larches were permitted to predominate for years in a crowded state, and in consequence many of the Silver Firs were retarded and stunted in their growth; but notwithstanding there are many of them very promising trees. The Larches now are all naked poles, whereas the Silvers are well furnished with green branches down to the surface of the ground, and together with the hedges are producing substantial shelter to the fields around.

The Silver Firs were originally planted with the view of being reared up as the ultimate crop for shelter. I saw one of the farmers on the property, who told me that were it not for the Silver Fir the shelter from the Larch would be now comparatively worthless. Silver Firs may be planted successfully on the following soils: On deep rich loam, on dry sandy soil, good moorland if well drained, &c.; but on humid land the plants suffer much from late spring frosts, and even up to a middle stage of growth their stems are frequently injuriously infested with the Silver Fir bug. Throughout the most part of the wooded counties of Scotland, where Silver Fir is found upwards of forty years of age, the trees generally surpass in size that of any other kind of conifer. The value of its timber is not so generally well known or appreciated as it deserves. I have tested its durability in many ways, and I prize its timber for many purposes next to Larch. On 17th April, 1877,



when men were engaged lifting old railway sleepers near Perth, and relaying with new Baltic sleepers, at the same time I was permitted to lay alongside the Baltic sleepers four well-seasoned Silver Fir ones, which were cut from a tree on the Logiealmond estate, to test their durability as railway sleepers. I visit these periodically at the

REMARKABLE TREES AT GORDON CASTLE. In and around the pleasure grounds are many splendid examples of remarkable trees. Oaks, Elms, Ashes, Limes, Beeches, Chestnuts, and others are all met with of stately proportions; some with tall, straight columnar stems, the *beau idéal* of a forest tree, others with no length of stem to speak

measured 16 ft. 4 in. at 5 ft. up, and the wide-spreading branches descending to the ground, and extending to more than 100 ft. in diameter, have taken root, and afford a substantial support to the parent tree, while the leafy canopy thus formed around the stem presents a tempting cool retreat from the blaze of the midday sun. Not far



Broad-leaved Spindle Tree (*Euonymus latifolius*).

end of each year, and last April I inspected them very minutely, and so far as I can judge they gave every indication of wearing out the Baltic ones. The price of Silver Fir hitherto has been much about the same as that of Scotch Pine timber; but so soon as its worth becomes known as railway sleepers it will open up an inexhaustible market for its timber, and its price will, I have no doubt, increase accordingly.—W. MCCORQUODALE.

of, but of giant girth and picturesque aspect, while many display great luxuriance in their umbrageous heads, with the lower branches sweeping the ground and completely hiding their massive stems from view. At a short distance from the castle stands a magnificent Lime tree, known as "The Duchess' Lime," which rises from the greensward to a height of about 90 ft., a perfect pyramid of light green foliage. The massive fluted stem

from this beautiful Lime stands a grand old Walnut tree, said to be the finest in the north of Scotland. It girths 12 ft. 8 in. at 1 ft. from the ground, and 13 ft. 6 in. at 5 ft. up. Many other noble trees which adorn the grounds and park were also seen and greatly admired, but no measurements were taken. A fine group of ancient Hollies attracted special notice by the gigantic proportions of their stems and the



hoary, aged appearance of their weather-beaten heads. The Holly appears to be indigenous here, and grows in great abundance. It forms quite a feature on the "Holly banks," along which a charming walk leads from the castle to a neat summer-house, on a commanding site in a distant part of the park, from which a magnificent view is obtained of the surrounding country, the broad expanse of the Moray Firth, and the distant mountains of Ross and Sutherland. The grounds around the summer-house are skilfully laid out on the site of an old quarry, and form an attractive and secluded retreat from the more open grounds around the castle. The steep grassy slopes are tastefully planted with choice trees and shrubs, among which the newer conifers are thriving admirably. A specimen of *Picea lasiocarpa*, about 25 ft. high, attracted special notice by its graceful habit, silvery foliage, and healthy, well-furnished appearance. In a hurried walk through a portion of the deer park a great number of fine trees were seen, several Larches being met with over 100 ft. in height, and girthing from 7 ft. to 8 ft. at 5 ft. from the ground. One of these Larches attracted considerable notice by its curiously picturesque habit, and great girth at the usually accepted point, 5 ft. up. On applying the measuring-tape at that height from the ground, the tree was found to girth 28 ft. This enormous girth was produced by a giant limb springing almost at right angles from the bole, and then shooting upright in tree-like form, at 3 ft. from the ground. This limb measured 10 ft. 6 in. in circumference at 1 ft. from its base. The true bole of the tree measured 17 ft. in girth at the smallest point between the ground and the base of the limb. Passing on through the open park, a plantation was entered in which it is safe to say the heaviest crop of Scotch Fir is now growing that is to be seen anywhere in this country. Straight, clean, cylindrical stems, towering aloft without a branch to a height of 70 ft. and more, and of great girth, stand so thickly upon the ground that the eye cannot penetrate far into the depths of the forest amid their colossal trunks.—*Journal of Forestry.*

**Juniperus pachyphlœa.**—This is at present very conspicuous, owing to the intense glaucous hue of its foliage; in that respect it even surpasses the glaucous variety of the Red Cedar (*J. virginiana*). It is upright in growth, but more irregular than its ally, *J. occidentalis*, or the upright variety of *Juniperus excelsa*; moreover, it is rather apt to lose the bottom branches. Despite this its colour is very pleasing, especially when associated with other and more sombre-hued kinds. *Juniperus pachyphlœa* is a native of New Mexico, and at present seldom met with.—ALPHA.

## NOTES AND QUERIES—TREES & SHRUBS.

**Hypericum uralum.** or *nepalense*, is inferior to *oh longifolium* and *patulum* in size of flowers, but compensates by their greater number. It is good for autumn flower. Mr. Moore sends it to us from Glasgow.

**The Mississippi Lime.**—This fine Lime (*T. macrophylla*, or a form of it) comes to us from Highclere, where there are so many fine trees; its foliage is very large.

**Lagerstroemia indica.**—Mr. Elkens informs us that this is hardy at Bitton, near Bristol, though it has not yet flowered. He believes it would flower in the Isle of Wight and near the south coast.

**Ceanothus Gloire de Versailles.** This shrub has been and still is beautiful here. The plant was covered with bloom early in July last; it will continue to flower while the weather keeps mild. It is planted against a south wall and was slightly protected last winter with evergreen boughs.—S. Ross, *Highclere*.

**Willow culture.**—Would some of your readers say: 1st, what is the best way to prepare ground for a Willow plantation? 2nd, how should the cuttings be planted and distance apart? 3rd, what are the best and most profitable sorts to plant? 4th, how much do they pay per acre? 5th, how long would it be before there would be any yield from the plantation? I have about 5 acres of wet ground which I am thinking of planting. T. P.

## COTTAGE GARDENS.

THE following paper is by no means intended for gardeners, or even for amateurs; it was an address to cottagers and persons who have but limited time and space at their disposal; who can only devote their leisure to the delightful pursuit of gardening, namely, the cottagers residing in a village near here. The pursuit is, however, one which can be followed by high and low. It may be the rich man's cherished hobby, or it may form the pleasant recreation of the man whose days are spent in bread-winning—of the man who in the stern battle of life is bearing the burden and heat of the day. Let every one whose lot is cast in the country where he can be the happy possessor of a plot of ground, cultivate a garden. Apart from the pleasure he will derive from this employment I may observe that the demands of the increasing population must be supplied, and that it is possible that the annual outlay in the purchase of imported fruits might be in some measure diverted from foreign channels to home production.

In these hard and perplexing times it becomes the duty of every man to study how he can increase the usefulness of the land under his charge, and I know of no better mode of doing this, to the great benefit of both proprietor and occupier, than by affording greater facilities for spade husbandry, and so paying more attention to the cultivation of fruits and vegetables; and here I may be pardoned if I digress for a moment to touch upon a subject which may appear rather out of the vein of thought I am following. I have spoken just now of our "hard and perplexing times," the burden of which seems to press equally on landlord and tenant. Their interests are, as I fully believe, identical. The possession of landed property entails great responsibilities; every landowner rejoices, or should do so, in the prosperity of those who live under him. There is no more delightful sight than that of a well managed estate; and it does appear to me to be desirable that there should be a greater quantity of smaller holdings for occupiers and for free-holders, so that the land, instead of belonging almost exclusively to the capitalist, should be more in the hands of the industrious, and that our return from the soil should be the result of labour rather than of capital.

The publication of the agricultural returns of Great Britain for the past year show an increase in both orchards and market gardens, and though it is idle to suppose that England can compete in fruit and vegetable growing with countries more highly favoured in climate, still more might be done in the way of improved cultivation and selection of the sorts of fruits and vegetables best likely to succeed with us.

Last year we imported 4,219,951 bushels of raw fruit, of which 1,406,289 came from America. Now what is the remedy for this? Where land is conveniently situated and within reasonable distance of large industrial populations, with facilities for land and water transit, the landlords could let their land in smaller holdings and encourage a higher cultivation of the soil. A portion of such holdings should be devoted partly to orchards, partly to gardens for market produce. The hedgerows might with profit and advantage be planted with Plum and other fruit trees. Notwithstanding the great benefits which railways have been to this country we cannot help regretting the large quantity of land which they have taken up and withdrawn from cultivation. As I travel along by the train I grieve to see so much valuable land lying waste, and often think this might be compensated for, if the embankments could be turned into gardens. This idea may appear visionary, but it is not so in reality. Many of these embankments are well drained and composed of the very richest and deepest soil, and the position in which they are placed, gently sloping to the south and west, admirably adapts them for the growth of the choicest fruits and those of the best quality—low-growing trees, especially Gooseberries, Currants, and Raspberries, with dwarf Apples and Pears trained as cordons. Our climate in the northern and mid-land counties is hardly suitable for the cultiva-

tion of Peaches, Nectarines, or Tomatoes out-of-doors, but in the south and west of England these would be very likely to succeed on trellises. At present these embankments are given up to weeds and rubbish, and left ripen to seed which summer winds and autumn floods disperse over the surrounding country. To show what might be done in a useful direction, I may mention here that the Great Northern Railway grew last year on the east and west side of a strong clay embankment, near Newark, a fine crop of prickly Comfrey, an abundant, early, and excellent green food for cattle. This plant merits more extensive cultivation.

## Soils and Successional Crops.

To ensure success in gardening we must possess some knowledge of the climate and of the composition and ingredients of soils we are to cultivate, also of the nature and functions of the organs of plants, the substances which constitute the food of plants and the manner in which this food is taken up and assimilated, before we can understand the principles by which cultivation is regulated. Soils are clay-soil or sand-soil. Clay has a strong affinity with water, and will retain fifteen times its own weight of moisture without dropping. There are many varieties of clay, and they present great difficulties to the cultivator. Sandy soils are loose in texture and admit the free passage of water; they are easy of cultivation. It would be too long and tedious were I to attempt a description of their variety or of their chemical parts; suffice it to say, that clay soils must be well dug and trenched, mixed with lime and manure, and thus improved in quality, so as to get rid of the superabundant moisture to enable them better to attract and retain the heat. Sand land, on the other hand, must be converted from fine earth into land of a deeper staple and a richer consistency. In this manner both clay and sandy soils are rendered more fertile. The power of absorbing and retaining heat and moisture is intimately connected with the fertility of soils. Stiff clay is heated with difficulty, owing to the large amount of moisture it contains. Chalky soils are also heated with difficulty, but retain the warmth longer than clay. Black soils receive heat freely and retain it more equally. Deeply coloured soils acquire a higher temperature than those of a paler complexion, and the more divided the soil the greater the process of absorption.

In arranging a succession of crops, as a general rule, a plant with a naked stem and a farinaceous seed must follow one with a branched stem and a fleshy root, which has been taken from the ground without bearing seed, and the cultivator will soon learn that plants of different kinds delight to succeed each other, and the land is bettered by some and impoverished by others. Crops in the garden should be arranged therefore in succession, that is, roots and bulbs preceding fibrous plants, i.e., Parsley, Cress, &c. The garden should be thus divided, one-third orchard, two-thirds kitchen garden. The land should be selected of good quality, deep, dry, loamy, and friable, or must be made so by deep digging and constant manuring with farmyard manure and vegetable matter. Here let me point out one mistake frequently committed in the application of these last. They are often spread on the land in the spring when the crop is sown; in this raw and crude state the full benefit is lost. Now, if the manure is applied after the crop has been removed and the plants and trees are in a dormant state, it becomes thoroughly incorporated with the soil, and in this way renews its exhausted energies and renders it fit for future crops. The aspect should be favourable, ranging from east to west. The orchard divided from the garden should not be allowed to overshadow any portion of the ground devoted to root crops. Apples, Pears, Plums, and Cherries, should fill the orchard, and Gooseberries, Currants, Raspberries, Strawberries, and vegetables should be planted in the garden. The Apple is essentially an English fruit, and that of the poor man; it is in season all the year round, and I shall principally confine my remarks to its cultivation. I do not doubt that it is a native fruit, of which the Crab may be the parent, and that a long course of patient cultiva-



tion, by means of grafts and selection, has changed the wild production into the fruit which now forms so useful an article of food. But this has not been entirely due to the labour of Englishmen. No doubt the Roman and Norman conquerors of our country have contributed their share to this work, for many kinds of the Apples we now possess have at different times been imported from abroad.

### The Apple and its Varieties.

The Apple succeeds in temperate or even in cold climates. Its blossoms, which do not appear until May, escape the spring frosts, which often ruin the other fruit crops, which bloom in April or earlier. The old adage runs thus :—

If Apples blow in March,  
For Apples you may search ;  
If Apples blow in April,  
Apples will be plentiful ;  
But if Apples blow in May,  
You may eat Apples night and day.

No other kind of fruit is so well adapted for cultivation in the gardens of all classes, and it moreover affords a general and lasting supply. Some varieties are fit for use in July, while others which ripen late may be kept until that month in the following year, or even later. Almost every district of the country has one or more sorts which have either originated there, or have become acclimatised, and which seem to be peculiarly adapted to the soil and climate. In selecting the kind of Apple it is desirable first to begin with those which are known to succeed well in one's own neighbourhood. The Normanton Wonder, for instance, is familiar to most fruit growers as being one of the best Apples in use. It will remain sound without shrivelling for six months even in the light. The tree is vigorous and a great bearer, and it is a good market Apple. It was raised by a person named Dumeller (pronounced Dumelow), a farmer at Shakerstone, in Leicestershire. It is there known as Dumelow's Seedling or Dumelow's Crab. In this county (Notts) it is called the Normanton Wonder, while in the London market, to which it found its way in 1820, it has been christened Wellington. We have an excellent Apple in our parts not generally known, but which bids fair to take a very prominent place in our orchards and gardens. It was raised at Southwell by a small cottager, a shoemaker named Bramley. He was fond of his garden, and perhaps liked to make experiments. One day he sowed two Apple pips; they grew into trees, side by side; both bore fruit; one was worthless, the other a valuable Apple. The original tree may still be seen. Messrs. Merryweather, of Southwell, having had their attention called to this Apple, took it in hand, and introduced it to the public as Bramley's Seedling. The tree is of vigorous growth, a good bearer, the fruit is of fair size, tolerable as a dessert Apple until December, excellent cooked, and being rather sweet requires little or no sugar. Its marketable value is so great that an orchard planted with it would be a profitable source of income to anyone. I must not forget our old friend, the Keswick Codlin. This is the prince of cooking Apples; nothing can, I think, be more delicious than the flavour. It is besides a splendid bearer, the crop never failing. When I first began housekeeping I lived in a small house which stood in the midst of a little garden. This was then overgrown with large and unwieldy plants and very old trees. Many of these had to be cut down, and the garden was completely replanted and made to look very nice. One thing still was an eyesore—a large Apple tree in the middle of the grass plot just in front of the drawing-room window. I determined to have it down, but wiser counsels than mine prevailed, and I consented to leave it for one more season. The next spring it was covered with a mass of pink blossoms, and when late summer arrived it was crowned with golden fruit. That crop never failed; bad seasons did not affect it. I had more Apples than I wanted, and gave them away. In time we began to look on the once despised tree as the greatest ornament of our garden. We had quite an affection for it, and when we left the house for

the one we now inhabit we felt we were parting with a friend. The Keswick Codlin was first discovered about the year 1800, growing among a quantity of rubbish behind Glaiston Castle, near Ulverston. It was brought into notice by one John Saunder, a nurseryman at Keswick, who having propagated it sent it out under the name of the Keswick Codlin. For dessert the Ribston and Cox's Orange Pippin cannot be surpassed. We are all of us well acquainted with the Ribston Pippin, though it is far less generally grown than it ought to be, and is more frequently found in old-fashioned gardens, where few changes are made, than among our modern collections. Its history is curious. About two centuries ago a few pips were brought from Rouen, in France, and sown in the garden of Ribstone Park, near Knaresborough. The trees produced were planted in the park; of these one only proved to be worth keeping. It grew, flourished, and bore abundant crops for many years; as late as 1810 it was still standing (a Nestor among Apple trees) in the park. In that year, however, it was blown down in a heavy gale and destroyed. One little sucker grew from its root, which has been carefully tended, and with proper care may become a tree, and occupy the place of its venerable ancestor. The Ribston Apple, long confined to the place of its birth, is tolerably well known, not only in England, but among our Canadian fellow-countrymen. In that colony it is especially fine, which shows that a northern latitude suits it better than a warmer climate. "It will," says Nichol, "grow at John o' Groats, while it deserves a place at Exeter or Cork." Mr. Cox, of Colnbrook Lawn, near Slough, planted two pips from the Ribston about the year 1830; both these produced excellent fruits. One is known to the gardening world as Cox's Orange Pippin, the other as Cox's Pomona; the former is by far the best. I might give you a much longer list, but space fails me. I have mentioned a few of the best Apples I know.

### Planting and Under Cropping.

The proper season for planting is October and November; the earlier the better. First take off the leaves from the selected trees. This simple process prevents the bark from shrinking and also stops the evaporation of the sap, so that the tree when planted again will not require to draw so much from the soil before it has had time to develop fresh roots. It is a common error to choose plants grown in a poor soil under the idea that they will thrive better when transferred to a richer soil; such will never grow into healthy trees, but will become hidebound and never equal those transplanted from a genial, moderately rich, and naturally good soil. Before transplanting, the ground should be well prepared by ploughing deeply and subsoiling one year or more, so that it becomes porous and open. Should it be heavy clay, it must be well drained. It is indispensable that the ground should be kept mellow and loose by cultivation until the trees are well established. Suppose you were to try the experiment of planting two orchards, one kept in Grass uncultivated, the other ploughed for the first five years, you would find that the trees in the latter would show rich, dark, luxuriant foliage and clean smooth stems, whilst those in the former would have a starved, sickly look. The trees in the ploughed orchard would be treble the size of the others, and would bear an abundant crop of fruit before the trees in the uncultivated plot of ground produced any fruit worth noting.

Fallow crops, such as Potatoes, Beans, Carrots, and the like, are preferable to grain crops—Rye, Wheat, and Oats—which are injurious; but whatever crops are grown in the orchard, it should be borne in mind that the roots of the trees, so far as they extend, must have the sole occupancy of the ground. A certain space round a tree equal to the size of the head should be kept clear of crops, weeds, and grass. When any tree shows signs of failure and decay the ground should be well top-dressed. The Apple tree is strong in its growth, and when planted thickly in an orchard and bearing heavy crops of fruit it soon exhausts the soil. In order that it may continue in a healthy bearing

state we must manure it as regularly as any other crop, and it will amply repay the expense. The poor, barren, and moss-covered trees in orchards, now neglected, but formerly productive, only require a plentiful supply of food by means of a substantial top-dressing, a thorough brushing of the stems and a careful washing with diluted soft soap to bring them again to a state of vigour and fruitfulness. As a rule the Apple produces a good crop every alternate year. Owing to the excessive crop exhausting the store of sap laid up by the tree, another season is required to collect and renew a sufficient supply for the formation of new fruit buds. When half the fruit is thinned out in a young state, leaving only a moderate crop, the Apple, like other fruit trees, will bear every year, as it will also if the soil is kept in high condition. It must be remembered that the result of thinning is to ensure a crop of large fruit instead of a small one; what you lose in quantity you gain in bulk, weight, and quality.

I may be allowed here to remind you of a little story familiar to some of us which bears on my subject. An old man lay on his deathbed; standing by him were his two sons; he thus addressed the elder one, "Sam, thee knows thou'st been a sight o' trouble to me ever since thou wert a little 'un, allus wayward and contrary, and now't 'ud sarve thee but thee mun go and mak thy way in Lunnun—where I hear folks tell there's a mort o' trouble to get on at all—but I'm a going whear now't as happens here 'ull bother me much. Now, I've been a poor man all my life, and a poor man I shall die. I've nobbitt saved a few pounds, and them's thine by good rights (thee being my eldest born), so tak 'em and my blessing wi' em." So saying the old man drew from his pillow a well worn leathern purse and put it into the hands of its son. He then turned him to the younger one, who, tearfully regarding his father, had seemed to pay little attention to his brother's movements. "Harry," said the dying man, "come here; thou's been a good 'un to me and never angered me at all, but done thy duty as became thee. I wish as how I could do for thee as I'd loike, but I hev'nt the power. I've now't to leave thee but this ere owd tumble-down cottage and the orchard behind; but thou'rt a steady lad, and Farmer Briggs 'ull allus find thee work when he hes it; so thou't do. Mebbe some on these fine days thou't pull down the owd place and build a bran new 'un on the same spot; any how, don't thee make' away wi' the garden and orchard, for my father, and his father afore him, both on em lived here, and 'allus tell'd me as there was treasure to be found below the surface of the ground if a man ud only dig. Eh! bless your life, when I was a young man, afore I married my Sally, I used to laugh at their owd tales. I used to mak believe to dig, but now't never came on it, so I gev it up; then when you two was little uns she deed, and I've never seemed somehow to hev the heart to try. Mebbe its now't but an owd wife's tale."

The younger son did not seem to pay much heed to the bequest, but he tenderly raised his father in his arms, and put a glass of water to his lips. He was a patient nurse, thinking little of his own ease and comfort, and much of the sufferer, who was soon to need his care no longer. It was but a little while and the two sons helped to carry their father to the village churchyard, where his grave was dug near that of his wife under the old Yew tree. Sam, the elder one, soon returned to London, where he had left his wife and family, and he was again engaged in the hard struggle for daily bread. Harry was left to himself in the old house. He determined to try to make the best of things, and began by first putting the cottage into order; he repaired it as well as he was able, and spent the spare moments of his leisure in thoroughly cleansing every part. He next turned his attention to the garden and orchard; these had been sadly neglected; the garden was overgrown with weeds to the entire exclusion of vegetables and flowers, and the orchard, in which some few Apple, Pear, and Plum trees grew, had had no care bestowed upon it at all. It took Harry a long time to clear the weeds and



rubbish away, but spring was approaching, and by husbanding his time and working early and late he managed to clean and plant the garden, laying it out to the best advantage. The orchard was a more serious business. The ground had never been properly dug, but was covered with a growth of weeds and Grass. The trees were Moss-grown and straggling; but perseverance and determination will do much. By the month of March the orchard had been carefully dug and the trees cleaned and deprived of their superfluous branches. As Harry was digging his father's words came into his mind, but no signs of the hidden treasure appeared, and he dismissed the idea as the idle fancy of a dying man. In the autumn Farmer Briggs, who had watched his proceedings with some interest, gave him a load or two of manure, which he advised him to apply to the roots of the trees. What was his delight after all his trouble to be rewarded the following year by a crop of fruit—not the poor dwindled specimens which the trees had produced in former days, but a crop of fine handsome Apples and Pears. The garden had long since repaid his care by providing him with plenty of good vegetables. It was a pattern of neatness, and many were the nosegays it furnished him with when he went to pay his respects to Miss Jenny Briggs, who had long been his sweetheart, and was now to marry him with her father's full consent. Being rather grand in her notions, she would have preferred to live in one of the cottages which stood in a row facing the village street, and had been recently built. "Nay, Jenny," said our hero, when she ventured to broach the subject during their evening walk. "Nay, I'll never leave the old spot. Why none of them bran new houses can so much as how'd a candle to it; and m'appen I've fun out the treasure as father talked about. I've dug, and dug, and found nowt, for the treasure was not below the ground, but above." Harry was right; the care and labour he had bestowed on his trees brought him ample return in the shape of excellent crops. This was the real treasure. It is written in a very ancient book, "The hand of the diligent maketh rich."

### Top and root pruning.

Apple trees in orchards require little pruning while they are young. They should be carefully inspected every year in March, and all crossing branches taken out whilst they are small. When the heads are properly adjusted and well balanced, the cutting out of dead limbs and the removal of branches which crowd and interfere with each other, is all that is needed. A somewhat different line of treatment must be followed with Apple trees in gardens. Their growth must be restricted and their fertility hastened. There is no doubt that root-pruning (though all gardeners are not agreed upon the subject) and tree-training conduce to early fruitfulness. It is also desirable to make use of the Paradise stock, especially when the trees are intended to be grown as bushes and cordons. As we cultivate the soil to encourage vigorous growth, so must we in like manner employ art in the management of the tree itself. The first function of the roots is to secure it firmly in the spot in which it is planted; the second to feed and nourish the top and its produce, and to raise the stature of its stem and branches. The deeper the roots descend, the higher the tree grows; the more simple and undivided the roots, the straighter and taller the top, the single stem above being the counterpart of the tap root below. Tap roots are mere holdfasts, and not feeders. The need of the tree for more food causes it to send out small fibres, which are the true feeders, and absorb water and other substances from the soil. Stones, hard sterile subsoil, impenetrable rocks and the like break off the points of tap roots and compel strong roots to break into smaller ones; these then throw out feeding fibres. It is found that strong growing tap roots, like vigorous growing shoots, have few buds. Break up the form of one shoot or root into many, and in the exact ratio you have the multiplication of buds or growing points. These are the embryo fruit buds, shoots, or root fibres, according to circumstances or acci-

dent of position. The greatest mischief to fruit bearing trees has arisen by overlooking these facts. The removal of natural obstacles to root extension, together with the richness, softness, depth, and friability of the fruit borders, tempt the roots to bore or run, and naturally force the top into timber instead of fruit. To remedy this evil, we must adopt the modern system of root pruning, by which process trees which are wholly wood growers become fruit growers. The time for root pruning is about a fortnight before the leaves fall; the state and condition of the tree should fix the exact date—the usual one is the last week in October. The tree must be approached from a considerable distance, 3 ft. or 4 ft. from the stem of an ordinary sized tree. At the depth of from 18 in. to 2 ft. work out the soil on the south side, where the strongest roots are generally found, cut off clear all the straight descending shoots and clear them away (dead fibres and wood being injurious to the trees), replace the soil if it is in proper condition; if not, add compost. When this is done treat the roots on the other side in a similar manner. It is a bad practice (though I have seen it followed) to stab and hack to pieces the roots at random by thrusting in sharp spades and other implements to sever the roots. It may not always be necessary to prune the roots; an examination will prove this point. The lifting them from a lower to a higher position, the disturbance of the soil, may check the tree and do all that is required. Over pruning of roots must be specially guarded against; the operation should be looked upon as surgical for an exceptional purpose, and having fulfilled that purpose, *i.e.*, forced sterile trees to become and continue fertile, it should not be resorted to again unless occasion for it should afterwards arise. Roots once removed cannot be replaced. Winter pruning, summer pinching, and other operations which help to diminish the vigour of the wood and concentrate the sap upon the parts retained will make the trees more fruitful and the fruit of a better quality.

### Uses of leaves.

I have on a former occasion pointed out the important function of the leaves of a plant in distributing the sap, and preparing it for the proper nourishment of the tree and the formation of fruit buds; also how winter pruning, summer pinching, and other operations which help to diminish the vigour of the wood, and concentrate the sap upon the part retained, will make the trees more fruitful and of better quality.

The preceding remarks apply, in most respects, to the planting, cultivation, and pruning of Pears, Plums, and Cherries. Success can only be achieved by taking an interest in the work, and by devoting thought, care, and attention to it. The mere planting of a tree in a piece of ground, and mechanically applying manure to its roots, will ensure neither growth nor fruitfulness. It requires watching, that it may be free from blight and insects; in one word, it must be cared for and kept in good health and condition.

Hillside, Newark-on-Trent. W. NEWTON.

**Spent Hops.**—Brewer's spent Hops are, in some places, so abundant as to be an important fertiliser, generally one load being equal to two of stable-manure. But I have found them most valuable, when well rotted, for raking into the surface of seed-beds in which are raised Cabbage, Celery, and other garden plants, since they retain moisture, keep the surface loose and light, and in every way favourable for the successful growth of plants. In like manner they are excellent for any plot where you wish a most vigorous growth—vegetables for exhibition, for instance—since they furnish abundant fertility, while they keep the soil in the best condition for growth.—J. R.

**Writing letters and MS.**—It would greatly facilitate our work if all letters, as well as all manuscript, were written on one side of the paper only. It is hopeless, we are well aware, to make many readers understand the necessity of this; still we make the request.

## THE GARDEN FLORA.

### PLATE CCVI.—TROPÆOLUM HERMINE GRASHOFF.\*

For years past a double flowered dwarf *Tropæolum* has been an occupant of gardens. It was of somewhat loose growth with large loose flowers of a dull and unattractive colour. It could be met with here and there, grown as a floral curiosity more than for any special usefulness, but it never found its way into general cultivation. Recently two new varieties have been introduced, both of Continental origin; one, known as *majus grandiflorum plenissimum*, with double yellow flowers; the other, *Hermine Grashoff*, with double scarlet blossoms—the subject of the annexed illustration. The former has full flowers of good shape, the colour yellow with a deep maroon blotch at the base of each petal. Its habit is exceedingly vigorous, and it produces an abundance of flowers all the year round.

*HERMINE GRASHOFF* was raised in Germany, and is one of those plants that must become popular, for it is of easy culture. Young shoots about 3 in. long will strike quickly in any ordinary propagating soil, and when rooted and put into ordinary rich soil, kept near the glass in a temperature of about 40° to 50°, they soon develop into good plants. The shoots should be tied out to short stakes, so as to form a bush, as the wood is rather slender; they will soon commence to bloom, and in early spring the flowers come very large, in fact, resemble those of a *Zinnia*, and having long wiry stems they are valuable in a cut state, and especially for bouquets and button-holes. Few plants having flowers of a like colour are more serviceable in this respect or last longer; and if planted on a sunny bank in good soil an abundance of flowers is produced.

OF CLIMBING *TROPÆOLUMS* now in course of cultivation for general decorative purposes, mention should be made of *Ball of Fire*, bright fiery scarlet; *Lillie Schmidt*, reddish crimson; *Cooperi*, brilliant orange scarlet; *Perfection*, brilliant scarlet crimson, perfect in shape, very free, and an invaluable variety for cutting from in winter; *Coronet*, deep yellow, very free and highly effective; *Triomphe de Hyères*, yellow; *Triomphe de Gand*, scarlet; and *Bowden Beauty*, deep scarlet, a good variety for winter work. There are two climbing varieties that come under the denomination of scented *Tropæolums*, viz., *Canariense Improved*, the colour bright yellow, with a deep crimson heart-shaped spot on each segment of the flower, which is handsomely fringed—a strong grower and a perfect bloomer, yielding a delicious perfume, particularly in the evening; and *Maye's Seedling*, like the foregoing, but of a much deeper colour, the flowers large and produced very freely. The old *Canary creeper* will, it may be added, long remain a great favourite in gardens; it has been very fine indeed this summer.

**DWARF BEDDING TROPÆOLUMS.**—Foremost amongst these is *Bedfont Rival*, a new variety of dwarf habit, very free of bloom, and continuous and vigorous in growth; colour, warm scarlet, the blossoms of fine shape. This, which has been greatly improved during the past year, will be distributed in the coming spring. *Hunteri* is also a good and useful variety, but lacks the vigour, size of flowers, and continuity of *Bedfont Rival*. *Vesuvius*, rich maroon crimson, is also very fine; *Luteum Improved* is a good yellow, but surpassed by the *New Golden*, which has larger and deeper coloured flowers and a better constitution.

\* Figured from Messrs. Cannell & Son's Nursery, Swanley.











All *Tropaolums* should be raised from cuttings. Seedlings always show much variation of character, and are generally of very robust habit of growth, even to coarseness. Plants obtained from cuttings have a more spare and wiry growth, and bloom much more freely. As a matter of course, it is only by means of seedlings that new varieties are obtained.

R. D.

## THE FRUIT GARDEN.

### THE APPLE.

**PROPAGATION.**—The Apple is readily propagated by means of seeds, but the produce of seedlings is generally inferior to that of the parent plant, and as it is rather a tedious affair waiting for seedlings to fruit, few attempt to raise them; indeed, many of our best varieties of Apples certainly owe their origin more to chance than to skilful cross-breeding. There is, however, a wide field of usefulness open to hybridists who will strive to get either very early or very late sorts, for our main force lies in varieties fit for use during the three last months of the year, while of really good kinds ripe in July and August the stock is even more limited, as is also that of sorts that keep well far into the spring months. As it is during the months of November and December that we are most likely to have our markets glutted with foreign produce, hybridists should aim at getting a race of Apples either very early like the *Kerry Pippin*, *Juneating*, or *Red Quarrenden*, or of the very late flowering and keeping race, such as *Court Pendu Plat*, with the quality of a *Ribston Pippin* or *Cox's Orange Pippin* in the class for dessert Apples, or in culinary sorts some that would equal *Norfolk Beefing* as a keeper with the quality of a *Wellington*. Such fruits would realise a fortune in the case of any raiser, and those not fortunate enough to get kinds of sufficient merit to retain could easily convert their seedlings into useful trees by grafting good old kinds on them. It is singular that while hundreds of hybridists are trying to improve such plants as the *Coleus*, that are as transitory as the rainbow, comparatively few devote any attention to improving fruits, more especially those belonging to the hardy section. As a proof of how vigorous seedling Apple trees are compared with grafted ones, I may mention that in many localities in which I have resided where Apples grafted on various kinds of stocks have made but very moderate progress, seedlings of possibly no great merit that had been planted in any hedgerow or out-of-the-way corner have grown vigorously and borne abundant crops, which proved most acceptable when those of better sorts failed. It would, therefore, be a good thing if raising seedlings were more the rule than the exception; even those who have no knowledge of hybridising with a view to raising new sorts might save the pips of any particularly good Apple, and bury them in a pot of mould or sand until the soil was in good condition for sowing in spring; then they could draw drills about 1 ft. apart and sow the seed thinly and evenly, covering it with about 1 in. of fine soil; the soil should be kept moist until the seed has germinated, and for the rest of the season the surface must be kept clean. If the seedlings have done well they will require transplanting in the autumn, selecting all the best and most promising plants, and after cutting back the tap-roots, replanting them in some open sunny position in lines 3 ft. apart and 1 ft. plant from plant. By allowing plenty of room between the rows, an intermediate crop might be grown the first year or two. Perhaps the best as well as the most rapid way, however, of testing seed-

lings is to graft or bud them on *Paradise* stocks, or even on old bearing trees when any that are worthy of culture may be increased, and the rest cut away or re-grafted. We have some trees that have twenty sorts of seedling Apples on them, all fruitful and healthy, but not distinct enough to add to the general stock. It takes a really good fruit to supersede many of our old sorts when well grown. Seedling varieties may, however, be more vigorous and fruitful in adverse seasons when our tender sorts fail.

**RAISING STOCKS.**—The raising of Apple stocks on a large scale is a branch of the trade confined to certain nurserymen, who carry on that business in such a large way that they are able to supply other nurserymen at wholesale rates cheaper than they could raise them themselves, when soil, seed, labour, and other incidental expenses are considered. The free or natural stock is the only one adapted for large orchard standards, and seedlings of the *Crab* or wild Apple are far more vigorous than seedlings of cultivated sorts; therefore when seed can be obtained it is undoubtedly the best, but failing this seed of hardy vigorous cider Apples make good substitutes. Seedlings raised from choice garden kinds act as dwarfing stocks, and are therefore useful where restricted vigour is the object sought. The tendency now, however, is all in favour of full sized standards and isolating them, *i.e.*, not mixing them with ordinary garden crops, both for market and private use. The best time to sow the seed is probably the autumn, and if not sown then it should be preserved from drying by covering it with sand or moist soil until the ground is fit for its reception. Early in spring sow moderately thick in drills 1 in. deep and cover with fine soil; keep the ground moist in dry weather and free from weeds, and the seedlings will be fit for transplanting into nursery lines the following autumn. The usual routine in nurseries is to plant the young seedling stocks in lines  $1\frac{1}{2}$  ft. apart and the plants 3 in. asunder; there they remain one or two years according to the growth they make, some seasons being much more favourable for developing rapid growth than others. The only attention necessary during this period is to keep down weeds and maintain a loose friable surface by means of hoeing or scarifying. At the end of the second year, or when three years old from seed, they are finally planted out where they are to remain for budding or grafting, and to form trees fit for permanent planting in orchards.

**PREPARING THE SOIL FOR STOCKS.**—This is an important item in the cultivation of young Apple trees, for a vigorous healthy development is more likely to produce trees free from disease than a starved or stunted growth. I was, therefore, not surprised when lately visiting Messrs. Bunyard's nursery at Allington, near Maidstone, where Apples, both on the free stock for large orchard trees, and on the most popular dwarfing stocks for bushes, cordons, &c., are made a speciality of, to find large heaps of short rotten stable manure lying ready for being trenched into the quarters now in course of preparation for the forthcoming planting season. For this purpose only the very best stable manure from London is used, and I was assured that no artificial manure yet tried had produced equal results in the way of promoting clean, healthy growth free from disease. Out of some hundreds of thousands of trees one could not find a stunted specimen; all were young, healthy, and vigorous, the bark having that shining look which denotes health in the best sense of the word. The staple of the soil hereabouts is a moderately stiff loam, not particularly rich naturally, but of good depth, and under good cultivation capable of making a most fertile soil, and, what is of even more importance

than the upper stratum, the subsoil suits fruit trees admirably, being mostly a soft, porous stone, locally called *hassock* or *Kentish ragstone*, or the same kind of material very much broken up and mixed with the soil, and locally known as *stone shatter*. In some places this is abundant even on the surface, and it is surprising how well it suits fruit trees; the roots cling to the stones, which provide efficient drainage, and also retain moisture during periods of drought; to this is mainly attributed the health and fruitfulness of the trees on this formation. In many places in this locality the subsoil is composed of a reddish clay called *red-pin*, a poor hard soil that bakes as hard as a brick when dried, and when mixed with the soil requires very careful management to get it into a friable state; if worked when wet it becomes a hopelessly sodden mass, but if exposed to frost or drought it mixes with the other soil like lime just slaked. Where this abounds young trees make extremely strong growths, but not very fibry roots. It is therefore to be avoided for nursery work, as the strength of the tree must not be expended in coarse, watery shoots, but such as will ripen up hard and brown to the very tips.

**ELEVATION AND ASPECT.**—The best aspect and elevation for young trees during their early stages is not necessarily the best for them when approaching the mature or fruitful stage, as the object in the first place is to get the young trees as quickly as possible up to the stage most suitable for transplanting to permanent quarters. If they set a crop of fruit while very young, it is severely thinned so as not to materially reduce the growth of the tree; merely a few fruits are left to prove that the trees are true to name, and in the case of those on dwarfing stocks a few trees are allowed to bear a full crop in order to let visitors unacquainted with that mode of culture see what kind of crops can be grown on miniature trees, specially prepared for fancy modes of training, such as cordons, bushes, &c. An open sunny position tolerably well elevated is the best that can be selected for young stock, for in addition to perfect drainage, and consequently higher temperature of the soil, the trees get a maximum of light and air, a condition on which thoroughly ripened wood depends, thereby avoiding canker and other ailments that follow severe winters acting on half ripened wood.

**PLANTING THE STOCKS.**—Having a suitable position well prepared by trenching, and that has previously been cropped with some kind of nursery stock different from the Apple, two or three-year-old *Crab* or free Apple stocks that have been bedded in thickly are then taken up carefully, and after the coarse roots have been shortened, replanted in rows 3 ft. apart and 1 ft. asunder in the row. This work is pushed on as speedily as possible after the leaf begins to fade or fall, for if got in early they get partially established before winter sets in, and where many thousands have to be replanted, every favourable opportunity when the soil is workable has to be embraced. In the case of adhesive soils much treading when saturated with rain is absolute ruin to them, and when that is the case the men are employed in preparing the plants, cutting sets, or making cuttings. I may mention that although 3 ft. apart may appear a wide interval for small plants, yet it is really the best in the end, as the plants get a free circulation of air, and above all it permits a set of hoes or a shallow cultivator to be kept at work during the growing season, thus keeping down weeds and providing a mellow surface of finely pulverised soil that greatly assists growth, and in periods of drought, such as prevailed in the early part of last summer, prevents cracking. Under favour-



able conditions these young stocks will be strong enough for grafting or budding after one season's growth in the quarters just alluded to, but if not, or from any cause they may not be required, they are left for another season. The Nonsuch and English Paradise, which although propagated from layers, cuttings, or suckers, are treated exactly the same as seedlings when received at the nurseries in the shape of one-year-old plants.

J. GROOM.

#### OUT-DOOR GRAPES.

THE present season should do something towards bringing out-door Grapes once more into favour, for not only are there good crops, but the fruit is ripening well; so well, indeed, that the ripest berries are quite sweet and pleasant eating, and that is much more than can be said of out-door Grapes in some seasons. With such good general results on walls and houses we should like to hear how the vineyard experiment at Cardiff Castle is progressing, and perhaps Mr. Pettigrew will not object to tell readers of THE GARDEN what are the present prospects of his vineyard crop, where, I believe, the Continental method of training to poles is adopted. Even with the warmest summers with which we may be blessed here, I think a sanguine mind is needed to have faith in the power of the climate of England to ripen Grapes in the open air so grown. There are the drawbacks incidental to such mode of culture, of wood imperfectly ripened, of injury by frost, of late starting, and little sun heat to ripen the fruit. Of course, if we can learn that even with these drawbacks Grapes can be well grown, freely produced, and ripened at Cardiff, then may we hope that as good results may be obtained on many other suitable spots in the south of this country. While last year showed considerable advance in warmth upon several preceding years, it did not give us many wall Grapes, but then the preceding year had failed to ripen the wood well, and fruit in any quantity last year could hardly be looked for. Last autumn the wood ripened finely, and this season it will be as firm and well matured as it well can be got in any vinery. Naturally, vines in the open suit their growth to their position. Such excessive wood development as is seen in houses would be undesirable, and would perhaps fail to ripen, but the medium-sized hard growth of the summer gets well ripened by leaf fall, and is well prepared to withstand winter frosts and to break strongly in the spring. Then, for the past two years, at least, mildew has been absent; at least, I have seen nothing of it in this locality. That it was rampant on outdoor Vines during cold seasons shows how much, like the Potato fungus, the Oidium is a creature of damp and cold, and how it feeds and grows when the sun is out of sight. Vine growers who get it badly in their houses ought to learn a notch from Nature in this matter and shut out cold draughts from the tender leafage. That such old hardy kinds as the Ciotat, the Black Cluster, white Sweetwater, and the Royal Muscadine should ripen their fruit is nothing new, but it is not every year that such a Grape as the Frankenthal ripens in the open air, and yet I have it here with medium-sized bunches getting black as Sloes and quite ripe. Madresfield Court has set well and the berries are just showing colour; I do not anticipate that these will ripen fully this year, but the young Vine suffered very much from spider owing to the drought. Bowood Muscat, as I believe it to be, has robust, clean foliage, bunches fairly well set, berries of good size, but far from being ripe. The Royal Ascot has set fairly good bunches and the berries are fast colouring, but these crack considerably. Then the Esperione is carrying a good crop, and the bunches, thickly set, are fast becoming coloured, while Sweetwater and Royal Muscadine are quite ripe and good. With such a fine ripening autumn I look hopefully for even better results next year; and although it is not probable we shall be able to rival Spain or Italy with out-door Grapes, there is with sunshine no reason why we should not have plenty of good fruit. A. D.

**Large Gooseberry tree.**—An old and still healthy plant of the Red Warrington Gooseberry, trained upon a brick wall with a north aspect, and bearing heavy crops yearly, may be considered worthy of notice, not only on account of its age and large dimensions, but also, and more particularly, for its usefulness in supplying the dessert with good Gooseberries considerably later than they can be had by any means of retarding that can be adopted in bush cultivation, the position of the fruit being effectually shaded and cool, and protection being easily secured by a covering of net. The bush or tree in question had been planted at a distance of 8 ft. from the corner of a west wall, where it had grown to its height of 12 ft., and filled the space to the corner, thirty years ago. The age, therefore, of this uncommon specimen cannot be far short of fifty years. Some of its branches near its base are still lengthening towards the east, one of them having reached the distance of 24 ft. 1 in. from the stem, while the corner of the wall has been made its barrier on the opposite side. The mode of training which has been adopted is the fan shape, but at a distance it has more the appearance of a tree. —J. WEBSTER, *Gordon Castle, in Florist.*

**Keeping Red Currants.**—Although it is generally recommended to have these on north walls for late use, I prefer having them in bushes in the open. During the last three seasons I have tried them both ways, on north walls and in pen bushes, and I find the fruits keep much the best on the latter; on walls they get so dirty and covered with cobwebs, that they become almost unfit for use. Not so on open bushes; on these they keep perfectly, and remain fresh and bright in colour till the end of September. Ours are the old Dutch Red. For late use I know of no variety to surpass La Versailles and Ruby Castle, although they are not so sweet as some others, but for this their large size more than compensates. I do not wish it to be understood that I condemn north walls for Currants; quite the reverse; as any one who has a north wall, and has ever so small a space on it to spare, should plant a Red Currant there. My object is to tell those who may not have a wall that they may have equally good late Currants on bushes in the open. In a season like the past, when bush fruit was a very large crop, it is useful to be able to keep a portion for late use. We have some Currants and Gooseberries planted in a open piece of ground for this purpose; just as the birds begin to eat them we run some wire netting round them. It is 27 in. wide, and it is kept upright by means of iron supports, and the top is covered with fish-net, fastened to the wire. In this way we can gather the fruit without taking off the net, and the net does not rot as it does when on the ground. —J. CROOK, *Farnborough.*

**New seedling varieties of fruit.**—From the address of the president, the venerable Marshall P. Wilder, at the opening of the 18th session of the American Pomological Society at Boston the other day we make the following extract on the aim and work of the raiser of new kinds of fruit. We often think of the great amount of work we have yet to do in raising new fruits, especially varieties of our great fruit the Apple. The quality of qualities—flavour—is neglected. Large Apples are continually being sent out, no improvement whatever in this respect: "The laws of reproduction we do not now fully understand, but from the improvements we have already witnessed we have reason to believe that we have only to become familiar with their operations and our efforts will be crowned with success. There may be a limit beyond which a fruit may not be improved; but the marvel is, that, considering the inferior character of the fruits of former days, we have been able to produce so many of the fine varieties which now grace our exhibition. But great as our acquisitions have been, still greater results are to follow. When we look at the advance in Strawberry and Grape culture, and the numerous fine kinds which have been originated from the seed within a few years who is not desirous of renewing his efforts in the prosecution of this good work? It is strange that Duhamel had so little

confidence in obtaining good Pears from the natural seeds, and we cannot account for his ill success in any other way except that of sowing the seed of poor varieties. But, thanks to Van Mons for his enterprise, although the improvement which he claimed from the process of amelioration by sowing the seeds of successive generations of the Pear, we believe came from the natural crossing of his best sorts in the same grounds. Thanks, however, everlasting thanks to him for his advice 'to sow, resow, and sow again the seeds of your best fruits, as the only means of obtaining good fruits.' Had we commenced sowing the seeds of our good fruits early in life in accordance with his advice, we should now have an abundance of excellent kinds adapted to our respective locations. The process of hybridisation is simple, whether by the air, insects, or the hand of man, and we have only to have due regard to the characteristics of the parents from which we breed. Thus, as it were, 'line upon line and precept upon precept,' I have endeavoured to impress on you the importance of this branch of our science, and as it was my first, so it shall be my continual and last advice—'plant the most mature and perfect seeds of the most hardy, vigorous, and valuable varieties; and as a shorter process, insuring more certain and happy results, cross or hybridise your best fruits.'

#### Standard Gooseberries and Currants.

—In THE GARDEN, March 20, 1880, there is an article on standard Gooseberries and Currants. Can any of your correspondents say in what nursery these can be had? I do not see them mentioned in any catalogue that has come into my possession. Failing to procure them in this country, where are they to be had in Germany? Economy of space is an important matter in most gardens, and it seems to me that the yield of fruit from the same piece of ground would be largely increased by planting dwarf and standard bushes alternately. —F. NEILL FRASER, *Rockville, Murrayfield, Edinburgh.*

**Large Apple tree at Barleythorpe.**—At Barleythorpe, in Rutlandshire, a huge Apple tree, 24 yards in diameter, is a very attractive sight upon a lawn at the north front of the house at the present time. The tree has lost one of its main limbs, but the loss is not perceptible at a distance. The tree has to be supported under the weight of its crop, which is something extraordinary, and which is the best example of Apple growing I have ever seen upon a lawn or anywhere else. Of course, size of fruit is not to be expected where the crop is so abundant. —W. H., in *Gardeners' Chronicle*. [Lady Augusta Noel, the sister of the late Lord Lonsdale, who used to live at Barleythorpe with her father, the late Colonel Lowther, says: "My father built his house about 1847 in an old orchard where this tree was standing, and has remained ever since." The history of the tree is, we fear, but little known.]

#### Best Strawberries for light soils.

—We often hear of the prolificacy of a certain variety in a given district or place, and of its being a good outdoor or forcing Strawberry as the case may be, while not many miles off the same variety may be considered but a very poor one, and almost worthless for either pot or outdoor culture, though in many cases the runners or plants may have been obtained from the same stock. This disparity may arise from various causes, but principally through the soils being different. Yet by making a careful selection a number of good and productive varieties may be chosen in accordance with the character of the soil at command. The following I have always found to be free and productive on light friable soils, and they are named in the order in which they ripen, viz., Black Prince, small, but still one of the earliest; Pioneer, a good market variety; Keen's Seedling, and Vicomtesse Hericart de Thury; this last, when potted for forcing, requires to be kept to one crown by removing all side growths, otherwise the latter greatly interfere with the full development and maturation of the former; President, Sir J. Paxton, Unser Fritz, Mr. Radclyffe, a finely flavoured



variety; and Helene Gloede may also be added. The last named produces finely flavoured fruit, but, unfortunately, the plant is very subject to red spider both outdoors and under glass. Mr. Radclyffe succeeds better than the British Queen on light soil, and is the nearest approach we have to that much esteemed variety in flavour. It is well understood that all Strawberries succeed best on a good holding and moderately rich soil, but where this is not at command the above mentioned varieties will be found, as I have said, most serviceable and prolific.—R. G.

## NOTES AND QUERIES—FRUIT GARDEN.

**German Plums.** Have any of THE GARDEN readers experience of German Plums? They are spoken well of in America.—W. N.

**Apple cordons at Normanton Park.**—In Lord Aveland's garden at Normanton Park a long row of horizontal cordons is so fertile, and the quality of the crop so good, as to afford the most ample testimony in favour of this system of growing the Apple. A prettier sight no one could desire to see, and I am told when the little trees are in flower they are even more beautiful than when in fruit.—W. H., in *Gardener's Chronicle*.

**Mulching fruit trees.**—F. C.—Farnyard manure is invariably recommended for mulching fruit trees, because it answers the two-fold purpose of preventing radiation and supplying a valuable stimulant to the roots; but as you find it difficult to obtain manure, you may stimulate your trees by top-dressing with guano, bone-dust, or other fertiliser, and you may prevent the escape of ammonia and moisture by covering the surface with short straw, decaying leaves, or mowings from the lawn. When artificial manure is used it should be well watered in before the non-conducting material is placed over it.—W. C.

**Vine and Peach leaves.**—A. H.—These are attacked by thrips. Tobacco smoke will kill them effectually, but it must not be used while there is any fruit on the vines or trees. Make the hot-water pipes or flues as hot as possible, and paint them with a mixture of one part lime and two parts flowers of sulphur, mixed with enough water to form a thick paint. The fumes from the sulphur will kill the thrips. Dress the vines and trees when the fruit and leaves are off with soft soap and flowers of sulphur in equal parts, to which add enough clay and mix with water to make a thick paint. This will destroy the eggs. Next season keep the houses well ventilated and not too dry.—G. S. S.

## PROPAGATING.

**Dactylis glomerata elegantissima.**—This useful variegated Grass is best increased in February and March. Any plants left over and those taken up from the garden in autumn should be wintered in a cool greenhouse and kept tolerably dry. They may then be placed in a temperature varying from 55° to 60° for a fortnight, and watered with a spouted pot—not overhead. When they have made a start turn them out, shake all the soil away, and divide them. Every crown will have made a good plant by May. Put them in 2½-in. pots, and place them on a shelf or stage in the propagating house till well rooted, when they may be removed to a frame, keeping them rather close at first and covered at night in case of frost.

**Mule Pinks.**—These may be increased in autumn by means of layers in the same way as Carnations, or by cuttings. Take off the side shoots and put six or eight into a 3-in. pot in sandy soil. They may be put either under hand-glasses or in a close frame. September is the best month for such work. They will emit roots in three or four weeks, and may be either potted off or kept in the cutting pots till spring, but the former is best. For spring propagation the stock plants should be got into a temperature of about 55° in January. When the cuttings are prepared they may be inserted all round the insides of 5-in. pots filled with fine sifted soil consisting of yellow loam, leaf mould, and sand in equal parts. Water and place them in a cutting box on a gentle bottom heat, where they will emit roots in fourteen days.

**Fabiana imbricata.**—To increase this successfully the cuttings should be put in in August. Prepare the quantity of 6-in. cutting pots required, drain them about one-quarter full, and put a layer of Moss or fibrous peat on the top; then fill up with a fine compost of yellow loam and leaf-mould with a good sprinkling of sand; press all down rather firmly, and put a little sand on the top. Select the cuttings from the sides of the leaders of the summer's growth about 1½ in. long; trim off six or eight leaves, and cut them across the base with a sharp knife. Before inserting them mark with the bell-glass where they are afterwards to stand; fill the pots with the cuttings thus prepared, and tighten them well in; give a good watering, and place them in a very close frame or hand-glass in a northern aspect under a wall or hedge; let them remain there till the first or second week in September, when they will be well callused; then take them into the propagating house, place them on a cool bottom, and cover with the bell-glasses. They may now be examined, and any that are too dry should be well watered; afterwards they will require but little care except wiping the glasses or lifting them off for an hour or so once a week. About the middle of January they will commence to grow, when the glasses may be left off by degrees, and they may be removed to the greenhouse and gradually hardened off ready for potting in March.

**Acanthopanax quinquefolia variegata.**—Besides the methods given in THE GARDEN (p. 359) of propagating this plant, there is yet a third, by means of which I have been more successful than in the case of either of the two mentioned. As soon as the plants commence to grow in the spring, I take them into a warm greenhouse in which the shoots speedily lengthen, and when they are from 2 in. to 3 in. long, propagation may be proceeded with. The sized pot I find most useful is a 3-in. one, which, after being well drained, should be filled with light sandy soil consisting of equal parts of loam, peat, and sand, moderately pressed down, but avoid making the soil too firm, as in that case the rooting of soft wooded cuttings is retarded. In preparing the cuttings, do not remove more leaves than is necessary from them; the bottom one will in most cases be ample, and dibble them around the sides of the pot; then give a good watering, and put them in the close case along with such things as Fuchsias, Verbenas, &c., mostly so much propagated at that time of the year. The case for such plants is generally kept at nearly a stove temperature, and under such circumstances the Acanthopanax will root in about three weeks, when it must be hardened off and potted in small pots, in which it will thoroughly establish itself during the summer.—T.

**Asparagus plumosus.**—In THE GARDEN (p. 354) it is said that there is no known method by which cuttings of this Asparagus can be rooted. Having struck a great many from cuttings, I find that there is no insurmountable obstacle to propagating them in that way. A couple of plants were cut down and the whole of the tops made into cuttings of from 4 in. to 6 in. in length; these were inserted in well-drained 4-in. pots and filled with sandy soil. After being watered they were placed in a close propagating case in the stove, and in about a month many were found to have formed a large callus; they were then plunged in bottom heat and soon commenced to throw up young shoots from the base, which grew away rapidly, the original cutting being nearly at a standstill. Success in this case therefore seemed due to the fact of the callus developing into a small tuber, thus forming a base from which young shoots could spring. After being potted off they grew away rapidly, and it is now impossible to distinguish them from divided plants.—H. P.

**Arnebia echioides from root cuttings.**—Many are aware that this can be propagated from cuttings of the shoots, but as these are produced in such comparatively small numbers the process is slow; be it known, therefore, that it can be quite easily increased from root cuttings. I lift a plant or two and take off all the strong

roots, cut these into lengths of about 1½ in., and insert them in sandy soil over the surface of a pot; now or a little later is a good time to do it. Set them during winter in a position equable in temperature and moisture; in the spring they will produce all round the liber a number of buds, only one of which, however, generally comes away. Last spring I was greedy, and tried splitting each root, cutting it into several strips with a bud each, but the plan did not answer.—T. SMITH, *Newry*.

## THE INDOOR GARDEN.

### VENTILATION OVERDONE.

I HAD the other day to tell an enquirer not to expose his Vines that seemed to be subject to mildew to cold draughts, and he at once asked, What is a draught? Now, how very much rule-of-thumb principles operate with our leading horticultural builders may be seen at any garden-structure exhibition. True, the ventilation, or rather air currents, can be regulated almost to a nicety, and that is an advantage, but then there is always found the same system—lots of bottom or side air, and less, though plenty, at top. This plan is based on the theory that in all cases air comes in below, and, purifying the atmosphere of the plant house, goes out at the top. This is a very simple theory, but the question is, Is it right? Now it is both noticeable and remarkable that our market plantmen and fruit growers—of all gardeners the most practical in building their houses—seem to proceed on an entirely different plan, for they give no special side air, and seem content to get all they want through the glass laps and crevices, and through the lifting glass on the top; indeed, I think their belief is that if you only permit the over-heated air to escape freely there will be no lack of pure air that will rush in to take its place, and that is reasonable enough, for Nature abhors a vacuum. In this way the possibility of having a cold current is avoided, and nothing can be worse in plant culture than to have a volume of cold air rushing in right upon plants in the way that is inevitable if side-lights are freely opened. How diverse is our method of ventilating frames and houses. With the former we can give no bottom air, and the plants seem none the worse for it. As a rule, frames are ventilated by simply tilting the lights behind; then there is no current, and if the air of a frame needs drying, there is no better method of doing it than by lifting the lights a few inches both back and front, and if this be done equally there is no draught, but simply a free circulation over the heads of the plants, drying the humid air as it ascends. We ourselves know what are the discomforts and common results of sitting in a draught. If any one were to sit at a partly opened window with another or a door opened at the opposite side, a chill and severe cold would probably be the result. Why may not plants equally suffer? and still further, do they not often do so? Even in house ventilation, how often are we reminded that heated air does not ascend so freely as we think it should? and that the very place devised for its escape serves but to admit a downward current of cold, heavy air that is most distressing to endure? The point for consideration is not so much that some plants need more air than others; that would be freely admitted; but it is rather whether the method of ventilation generally adopted is the best to serve its purpose or to secure the desired end. I think we may also put aside to a large extent the common notions about plants absorbing air. They can get all they want easily enough, no doubt. The chief objects in ventilation are to maintain an equable temperature and to dry a moist atmosphere. A. D.

**Ventilation for Violets.**—Mr. Groom in his notes upon forcing Violets in frames recommends the tilting of the lights behind, as giving ample ventilation. Perhaps it does, although it would seem that in this simple matter cultivators



differ. At Syon Gardens the Violet pits are fitted with a wood ventilator 6 in. in length, both front and back. This is fixed just beneath the frame plate, and swings upon an iron rod which runs through the length of the pit. By this means a current of air may be always maintained. At Surbiton Mr. Denning sets up his lights back and front by means of bricks, and in this way attains the same end.—A. D.

**Calceolaria violacea.**—In reference to this charming spring flowering plant, it ought to be mentioned that it only blooms upon shoots of one or two or more years' growth, that is, it throws up new succulent shoots each year; the first of these do not usually flower, but develop side shoots by the second season, and flower beautifully the third season. I have had these shoots 4 ft. long, and arching in a most graceful manner under the weight of their numerous blossoms. It is quite a fact that if its collar is protected with ashes, or other non-conducting material, it will live out-of-doors through the winter, but plants so kept alive never bear flowers, because the shoots which ought to bear them have been dead two years. The only way in which I manage to enjoy the beauty of this plant in the open air is to keep it as quiet as possible through the winter, and put it out at the earliest moment in the spring. It is such a delightful plant, that a little trouble bestowed on it is well repayed. —T. SMITH, *Nerby*.

**Scarborough Lilies.**—I have had two distinct varieties of the scarlet kind of Vallota or Scarborough Lily. One, a rosy scarlet, very regular in general outline; petals, regularly shaped; throat, white, with a broad red streak between each two petals; filaments of stamen and style of pistil white, and rather rosy towards the extremity; the petiole of each flower about 2 in. long. The other is of a deeper scarlet, irregular in general outline; petals, not nicely shaped; throat, red, without any darker stripes between the petals; filaments and style, red throughout; petioles of flowers only 1 in. long. Both varieties are grown under glass.—E. B.

**Balsams.**—Is it not the case that from home-saved seed of Balsams the greater portion of the flowers come single? I have saved seed on several occasions from plants with perfectly double flowers, but the following year, to my great disappointment, there has scarcely been a really good double flower amongst the plants raised from seed saved from home-grown plants. No doubt the Messrs. Carter & Co. have a good strain of Balsams, but can they guarantee two-thirds of the plants to produce good double flowers from seed saved from home-grown plants? I question if they can.—R. GREENFIELD, *Warwick*.

**Bougainvillea glabra.**—In answer to "C. L." (p. 382) allow me to say that this Bougainvillea grew and flowered beautifully in a small Fernery opening from a greenhouse, which was not heated all summer. It was planted out, and was a large plant when we bought it. It was trained on wires near the glass, and hung in long sprays from the roof. A Stephanotis also flowered in the same house, unheated, except in winter.—M. E. G.

## NOTES AND QUERIES—INDOOR GARDEN

**Gloxinia maculata.** This old lilac-blue kind is flowering freely at Loxford Hall. It is a good cool stove plant, blooms a long time, and is distinct and tall.

**Watson's wedge boiler.**—We hear a very good account of the work this new boiler is doing in heating some houses in the Pine-apple Place Nurseries, Edgware Road, and hope to say more of it by-and-by.

**Thunbergia fragrans.**—I agree with the remarks made (p. 352) respecting the value of this fine stove creeper. On looking over the Lawson Nurseries, Edinburgh, about a month ago, I was delighted to see it in one of the plant stoves, there it was in great quantity, healthy, well-grown plants, flowering profusely. It is certainly deserving of more attention than it has hitherto received in private gardens.—R. GREENFIELD, *Warwick*.

## FILMY FERNS.

OUR two native species of *Hymenophyllum* (tunbridgense and Wilsoni) are easily distinguished from other Ferns by their moss-like appearance; though small, they are perhaps the most interesting of British Ferns. The principal difference between the two species lies in the fructification. In *Wilsoni* it is placed on a short footstalk, and the covering, which is cup-shaped and formed of two round convex leaves, is never dentated, whereas in *tunbridgense* the fructification is almost destitute of a footstalk, and the edges of the fructification is dentated or jagged. The leaflets on the fronds of *Wilsoni* are also bent backward and the seed stands erect, but in *tunbridgense* both point upwards. These Ferns are rarely found growing more than 1 in. in height, although under favourable circumstances, especially in a damp, close atmosphere under glass the fronds of *Wilsoni* sometimes reach nearly 4 in. in length. Although never attaining a great height, these Ferns spread to a wide extent, single patches being commonly found covering upwards of a square yard of surface.

The roots are long, wiry, and by producing numerous fibres become matted to a great extent, almost forming a kind of turf on the rocks which these Ferns inhabit. Their native habitat is mountain districts, where they grow luxuriantly on damp, shaded rocks, especially those with a northern aspect, but rarely, as some suppose, on wet, dripping rocks. Soil does not seem necessary to the growth of these Ferns, as I have frequently found them on the perpendicular surface of a bare rock; the position, however, generally chosen is the mossy crevices, in which a little soil has from time to time accumulated. Although met with in their native state growing vigorously on the exposed surface of rocks and stones, yet when brought under cultivation, unless means are taken to preserve a close, damp atmosphere, success cannot be relied upon.

When potting these Ferns, broken sandstone and small pieces of crock should be used, placing on the top of this  $\frac{1}{2}$  in. of sandy peat, on which the plants are to be pegged firmly down; place the pot afterwards in a saucer, which must be kept constantly filled with water, and cover with a bell-glass. Grown as pot plants under glass and kept constantly shaded, or planted in a Wardian case, these lovely little Filmy Ferns appear to the best advantage, and well repay any extra attention bestowed on their cultivation.

H. *Wilsoni* is found more abundantly in Carnarvonshire than *tunbridgense*, especially in the Pass of Nant Francon. A more minute description of its habitat might lead to its extermination. *Penrhyn Castle.* A. D. W.

## BOOKS.

**Half-hours with Greek and Latin Authors.** By G. H. Jennings and W. S. Johnstone. London: Horace Cox.—This is a book based somewhat on the plan of English "Half-hours with the Best Authors," and, considering the great value of the writings of ancient times, it may be said to meet a public want. To have the more valuable writings of the greatest Greek and Latin authors in a convenient English form is a necessity, and the authors are entitled to credit for giving us a comprehensive series of extracts by various translators. The only thing that can make such a book impaired in value is the great imperfection of many of the earlier translations, and, indeed, the later ones. Nothing requires more the skill of a poet than a perfect translation of a masterpiece. This we know mainly, from the success attained by our own great poets, but where only Tennyson or Shelley should translate, a great many men, with few or no qualifications, did not fear to try, and the result is an immense number of translations which are not translations at all in any high sense.

**Where to find Ferns.** By F. G. Heath.—This will be found to be a useful little work by tourists searching for rare Ferns in their hiding-places, or even those which stand out with greater boldness in particular localities. Most welcome also to cultivators will be the description of soil and position in which the various species are found to luxuriate. Moreover, information is given as to the amount of light and shade, as well as moisture, which is most favourable to the healthy development of each species. There is also other information which will be of great assistance to the uninitiated.—W. J. B.

**Mr. Such's catalogue** (South Amboy, New Jersey, U.S.) is the best printed one we have seen. It is not illustrated, but the typography is admirable. The paper is not hard-glazed and shining like much of the American paper, but a soft creamy tone. Certainly our cousins are good printers! This is printed at the press of Francis Hart, of New York. Many of our own catalogues are well printed, but the use of woodcuts of a very rough order and wholly inartistic (in plainer English, untrue) spoils them.

## PRESERVED VEGETABLES AGAIN.

WHEN some time ago public attention was forcibly drawn to the occasional injurious effects of preserved "canned" goods, I undertook a lengthy series of chemical and physiological experiments to ascertain the cause of such poisonous action. The results having so far only been communicated to professional chemists (*The Analyst*, vol. v., No. 57), I hope you will allow me, by way of affirmation of the paragraph in *The Lancet* of September 24, to give a short summary of them in the columns of your journal, as I think they may be of interest, and of some degree of importance, to medical readers.

Very frequently the gastric disturbances, traceable to the consumption of preserved articles of food have been assigned to traces of lead dissolved from the solder with which the tins are closed, or present as impurity in the metal with which the can is lined. Now, although the occasional though very rare presence of lead in such articles cannot be denied, the effects should be attributed to the tin itself. Tin, even perfectly pure, is far more readily attacked by food matters than is commonly supposed; it is to be found in comparatively large amounts in an overwhelming majority of canned goods, irrespective of the nature of the same. Acid fruits, such as Peaches or Cherries, corrode the tins to an appalling extent; but even meats, nay, condensed milk, dissolve and become contaminated with serious quantities of the metal.

I base my observations upon the examination of the following foods: *Vegetable*, French Asparagus, American Asparagus, Peas, Tomatoes, Peaches (three different brands), Pine-apple (two kinds), white and red Cherries, and marmalade. *Animal*, corned beef (five brands), ox cheek, ox tongue (three kinds), collared head, tripe, oysters, sardines in oil, salmon, salmon cutlets, lobster, shrimps, curried fowl (two kinds), boiled rabbit, boiled mutton, roast chicken, roast turkey, ox cheek soup, gravy soup, sausages, condensed milk (three brands).

With the exception of the sausages, the whole of the samples contained more or less tin, many to such an extent that abundant reactions could be obtained from two or three grammes of the vegetable substances; whilst of the animal foodstuffs of the soups contained 35 milligrammes, one of the condensed milks 8 milligrammes, and oysters 45 milligrammes of tin to the pound.

Pure tin is readily attacked even by carbolic acid in solution, all samples of soda water or of other aerated beverages which I have tested giving distinct tin reactions. Aerated beverages are generally stated to be liable to lead contamination, but seeing that lead does not enter into the composition of any of the pipes or vessels of the machines made by modern manufacturers, I do not doubt but that the black colouration produced



by sulphuretted hydrogen in the beverage in question has usually been erroneously attributed to lead, and is in reality due to tin. Tin, in fact, prevents the lead passing into solution; it completely precipitates the metal from lead solutions, an equivalent quantity of tin being taken up.

The question arises, Is tin, when taken into the system, injurious to health or not? Forensic literature does not furnish a positive or satisfactory reply, but the following experiments appear to me completely to settle the point.

A half-grown guinea-pig took with its ordinary food seventy-five milligrammes of pure stannous hydrate in two doses of twenty-five and fifty milligrammes each. Death resulted under symptoms of irritant poisoning. Tin was detected in large amount in the faeces and in the viscera, notably the liver.

Another similar animal took within three days, in six doses, 450 milligrammes of stannic hydrate without serious effect, tin appearing abundantly

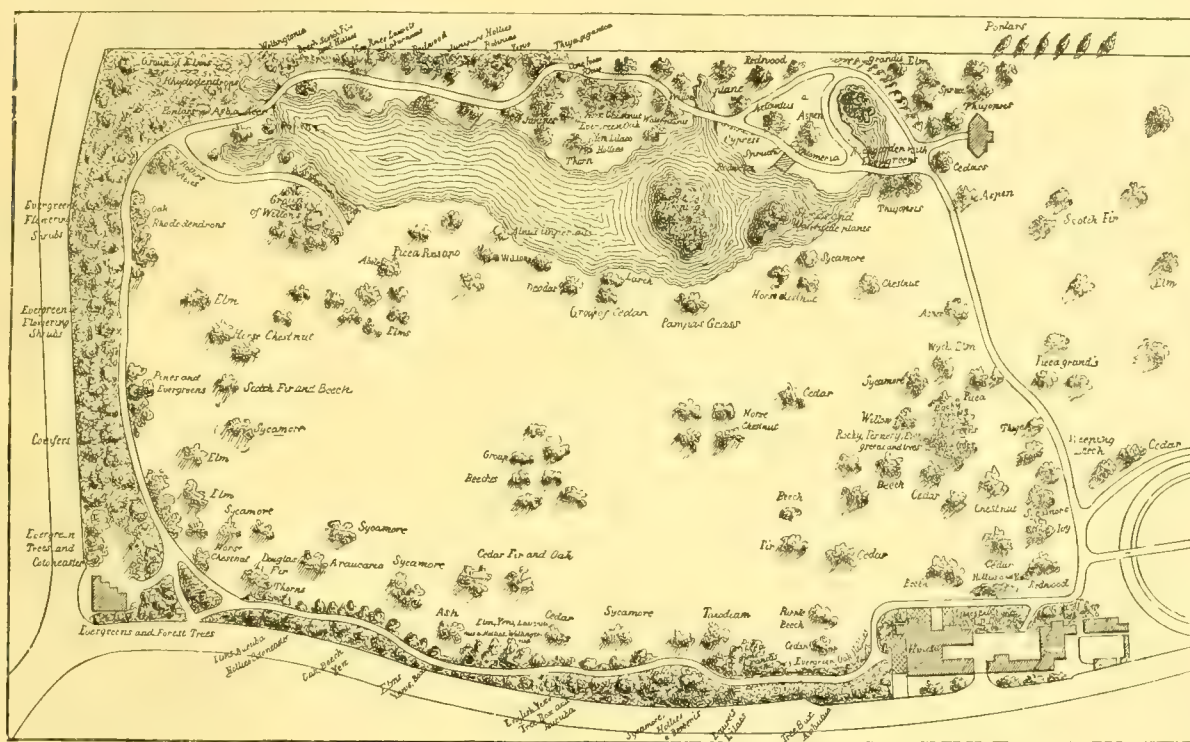
## GARDEN DESIGN.

### A WELL-DESIGNED LAWN.

It is often to its design alone that a garden owes its chief beauty. Next to situation the design is the most important consideration in the formation of a garden, be it large or small. Examples of good designs are few compared with the numbers of gardens that exist, and although this circumstance may be accounted for in several ways, it is generally in the hands of the designer to render a garden beautiful or the opposite, according as his design is good or bad. One of the worst evils in connection with garden design is laying the ground out to a set plan which, in nine cases out of ten, does not fit it. The ground being made to fit the plan instead of the plan the ground accounts for the stereotyped gardens that are frequently met with, particularly in suburban districts. What is most

exhibiting such a superfluity of projections and indentations as are often deemed essential to the outline of artificial water. The termination of the walk to the left at an arbour is thoroughly unconventional; in the majority of instances it would have been made to encircle the lake entirely. If this walk had been extended the view from the house across the fine breadth of lawn would have been marred considerably. The circuitous route of the walk is so arranged as to embrace the whole of the scenery of the garden, and yet at no part is it obtrusive. For three parts of its length it skirts the boundary, which is effectively screened by shrubberies and plantations that form, moreover, good shelter.

**Plant hybrids.**—I had just recently the pleasure of an introduction to the small garden at Kensington, in which Mr. Clapham endeavours to



Well-designed Lawn and Garden.

in the excrements. Accustomed in a manner to stannic salts, it quickly succumbed to fifty milligrammes of stannous hydrate.

It plainly follows that while stannic compounds are not injurious in the doses given, tin in the stannous condition is a virulent irritant poison.

These experiments lead me most strongly to support your demand for a better method of packing preserved food matters than in tin canisters. Tin invariably dissolves in the stannous condition in such solvents as occur in vegetable or animal substances, and the amount of oxygen in the sealed canisters being very minute, oxidation cannot render the metal comparatively unobjectionable.

I trust that the medical profession will object, unmistakably and strongly, to the administration of tin by grocers and oilmen to young and old alike, and, whilst acknowledging the enormous benefits conferred upon the masses by the introduction of preserved foods, will insist that the present system of packing be speedily abandoned. —OTTO HENNER, in *Lancet*.

needed in garden design is simplicity, complicated designs seldom producing happy results. Our illustration shows in a striking manner the beautiful effects obtainable from a simple design. It is typical of the true English style, and a rare example of correct taste. The walks, it will be observed, are few; indeed, there is uninterrupted lawn between the house and the water, the result being an imposing breadth of Grass, thinly planted with groups of select trees and shrubs. The whole place is comparatively small, but by skilful arrangement it is made to appear much larger than it is. To effect this, the house, as will be seen, simply occupies a corner of the lawn; whereas had it been placed more in the interior much of the green open space between it and the water would have been sacrificed. The kitchen and forcing garden to the right, though in convenient proximity to the house, is effectually screened both from it and other portions of the grounds. The ornamental water is particularly well designed, the margins not

work out his schemes in the matter of plant hybridisation. When at Scarborough he took in hand British Ferns, Aucubas, Mimuli, and other things with remarkable results, and his strain of Mimuli is perhaps the finest and most robust now in cultivation. Mr. Clapham's Aucubas are at Chiswick, one having received a first-class certificate, and his numerous hybrid Ferns are widely dispersed amongst lovers of that interesting race of plants. The Polyanthus has also received considerable attention, Mr. Clapham having striven to obtain flaked or striped flowers on this and the Primrose. The prevalence of maggots in his garden at Scarborough proved a great hindrance in his work with these charming spring flowers. At the present time the hybridist's efforts are chiefly devoted to the production of striped Pansies, and some very charming things have resulted. A race of perfectly flaked and striped Pansies would be a popular one if allied to good sized flowers and dwarf, robust-habited plants. A small back garden in such a populous suburb as Kensington is not the best place to enable Pansies to display their



beauties, but very small means suffice to originate a new strain. The bedding *Viola* has also come under manipulation, and amongst other results there is a white that is a decided improvement upon even such a good sort as *Pilgrimage*. Not least interesting, moreover, are Mr. Clapham's efforts to obtain a red Musk, and as he has already obtained one with good sized reddish buff flowers, the desired end may yet be achieved. Not the least pleasing amongst his seedlings is one having large flowers of a pure bright yellow. In each case the musk perfume has been well preserved.—A. D.

## SEASONABLE WORK.

### FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

THE weather must now be closely watched, as before the occurrence of frost, anything likely to suffer from it should be protected. Already *Alternantheras* are beginning to feel the effects of the cold, but, with the exception of these, carpet beds are still looking well, and may, with shelter afforded at night, be preserved in fair condition for some time to come. Laurel branches, stuck in or laid lightly on them, form an excellent covering, but the best is that rendered by the use of mats or cloths, either of which, with a few sticks stuck in here and there to bear their weight, may be thrown over quickly and removed in the morning. Succulent plants, such as *Echeveria metallica*, and any others that are tender and slow to get up to any size, had better be lifted and repotted, and there are many plants besides with fine foliage which, if housed before being injured, may be made to render good service during the winter in large greenhouses or conservatories, where plants of such bold type are wanted. Among *Pelargoniums*, the first to feel the frost are the tricolors and variegated section generally, and, if wanted again, should be taken up at once, shortened back, and have the principal portion of the leaves stripped off, when they may be packed closely with their roots in earth in boxes or potted singly in small pots, and thus stored safely on any light, dry, airy shelf near the glass till spring. The green-leaved sorts are the next to require attention, and as year-old plants flower with more freedom than young ones, it is important that they be preserved, and if cut in hard it is surprising what a number may be wintered in a very small space. In the mixed border, that grand herbaceous plant *Anemone japonica* is still gay, and holds its own in spite of the weather. The next things to come in are the *Chrysanthemums*, which, as the buds are now formed and prominent, will be greatly benefited by a soaking or two of strong liquid manure. This is best administered by drawing up with a hoe a low ridge of soil around each, so as to form a basin-like receptacle, as then the roots get all without any waste. In cases in which it is thought desirable to fill up vacancies in borders it may easily be done by means of spare *Chrysanthemums*, which, being fibrous-rooted, may be lifted with large balls and replanted without much check. The best time to carry out the operation is during a dull, showery day, when, by watering heavily to wash in the soil, the leaves will continue fresh without any flagging. To support the stems a few weak sticks are all that is necessary, as the branches may be looped up and held secure with very little tying. Where bulbous plants, such as *Hyacinths*, *Tulips*, and *Crocuses*, are grown for the adornment of beds and borders, it is high time they were got in, in order that they may form plenty of roots before the tops begin to work. If the soil of the beds in which they are to be planted is at all stiff it should be deeply dug or trenched, and during the process have plenty of leaf-mould and sand worked well into it to help the drainage. This is an important matter with bulbs, for should they lay wet in the ground, many will rot. To prevent this it is a good plan when planting to place a little sharp sand around each bulb. The proper distance for planting *Hyacinths* in beds to produce a good display is about 6 in., and

they should be placed at half that depth in the ground. To show them off to the greatest advantage, circular beds raised in the centre are best, and to hide the bare soil a carpeting of *Mentha gibraltaria*, or some of the dwarf spreading *Sedums*, forms a good setting. *Tulips* should be treated in the same way, as the fresh green helps to tone down and give fine effect to their gay colours. In borders *Hyacinths* and *Tulips* are the most telling in patches of three, which may be all of one kind or of distinct colours, according to taste, however arranged. They should be planted triangularly 6 in. or 7 in. apart, and at the same depth as in beds. As many bulbous and tuberous rooted plants get lost during winter and spring through digging and re-arranging borders, the site of each should be marked, either by means of a label or iron peg, in order that workmen may see where they are.

**Cleaning Walks.**—The weather has been such of late as to cause walks and roads on which there is little traffic to be full of weeds. Many break the gravel to destroy these, and incur much needless labour thereby, as well as discomfort from having the surface rough. Common salt, such as is sold to farmers for dressing land, and which may be obtained almost anywhere at about 25s. per ton, will eradicate them when put on regularly and carefully. The time to put it on when it is most effectual is during dry weather, when by dissolving gradually and soaking in about the roots of the weeds, they soon loose their hold, and the sun scorches them up. The most economical way of applying salt is to dissolve it in a tub of water, and then pour the weak brine on through a fine rosed pot so as to distribute it regularly; but however used, the thing to avoid is the injury apt to result to the edging if the salt or liquid is put on too close to it. In cases where Box is grown as an edging, salt is dangerous, but the risk to grass verges is infinitesimal, as the principal roots being above ground, they are very much out of the way of its influence. One great advantage in using salt for the eradication of weeds, besides the time and labour saved, is the brightening effect it has on the gravel, as by killing all mossy growth, destroying *conferva*, &c., it seems to cleanse it right through, besides which, it makes it bind all the firmer. I have heard of vitriolic acid being used to kill weeds, and I know that it does so thoroughly on lawns, where a single drop in the crowns of a *Plantain* or *Daisy* will quickly burn them up. The worst, however, of the acid is that it is bad stuff to have anything to do with, for if not handled carefully it destroys any clothing it touches and blisters the hands. In kitchen gardens all walks should have dead edgings, as then they can be dealt with by means of salt and always kept solid, bright, and clean at a very trifling cost.

### THE ROCK GARDEN.

T. D. HATFIELD.

THE following may be added to easily grown alpine alluded to (p. 334), viz., *Campanula garganica*, a charming plant for the base of a rock, and if planted partly under an over-hanging stone, it will show itself off to considerable advantage, clinging, as it were, to the under-surface of the stone. *C. fragilis*, often confounded with the *Garganian Hairbell*, is not so desirable for the purpose just mentioned, for its tendency is to hang, whereas that of the species in question is to grow in an upright manner. One great drawback towards this plant becoming more popular than it is, is its impatience of division, and the consequent necessity of propagation by cuttings. A bronze-flowered variety of the alpine *Wall-flower* is very ornamental and of easy culture. Amongst Pinks, *Dianthus alpinus*, a diminutive rose-flowered kind, grows in calcareous soil; so also does the *Cheddar Pink*, *D. caesus*, and upon walls. In Mr. Ellacombe's garden, at Bitton, I saw some fine examples of the *Maiden Pink* (*D. deltoides*) growing on a high wall, and the pale-flowered variety of this Pink would be equally well adapted, I should think, for walls. Whether

seedlings now appearing about this variety will come true to their parent, or revert to the type, has yet to be proved. Like the rest, it enjoys a lime soil. *D. neglectus*, the *Glacial Pink*, a beautiful species, is rather difficult to grow, that is, if one does not give it the soil which it requires. It grows upon the primary rocks. We can grow it in loam, but it fails in limestone; but the soil it likes best should be analogous to that of its native habitat, that is, peat, loam, and granite gravel. The same treatment will suit the nearly allied, quite as beautiful, and earlier flowering typical *D. glacialis*. *Epilobium Dodonæi* is a plant of very easy culture, seedlings springing up around the parents. Really, according to stature ultimately attained, it ought to be classed amongst border plants, but flowering early in the year and upon its young growths until September, and its seedlings flowering too in their early stages of growth, it is well worth a place in the rock garden. It is interesting to note how a nearly allied species, *E. Fleischeri*, under cultivation adapts itself to a limestone soil, while in its native habitat it grows on a soil entirely free from lime; its relative, on the other hand, prefers lime. If ever there was an alpine *Aster* (*Erigeron*) worthy of cultivation it is *E. glaucus*, a hybrid variety. It is harder than the type and more abundant as regards flowering. Its blossoms, too, are quite as large as those of the type, and possess a charming rosy tinge. The flower-stems are not erect, but decumbent, and while the type shows no sign of flowering until the approach of autumn, this flowers persistently from spring until autumn. The *Heron's-bills* are a genus worthy of more general culture than has hitherto been given them. Of the self-sowing group with finely divided leaves may be mentioned *Erodium cheilanthesifolium*, *E. petraeum*, *E. macradenum*, and *E. absinthioides*. There are also two biennial *Epilobiums* worthy of culture, rather coarse in habit, with ovate leaves, deeply lobed at the base, which sow themselves freely.

### PROPAGATING.

No time should now be lost in putting in such cuttings of stove or greenhouse plants as are to be increased, as if delayed longer it will be much better to wait till February. Cuttings of *Solanums* put in now, and potted off as soon as rooted, and placed in a light position, will make good plants to grow on for next season. Plants obtained in this way are from their floriferousness preferred to seedlings, besides which the cuttings may be selected from a few of the finest, and, if done carefully, may be so taken off as to in no way disfigure the plant. Store pots of seedling Ferns in their various stages of development will now require careful watching, as if allowed to form too dense a mass they are apt to fall a prey to damp, on the first appearance of which the young plants should be pricked off into other pots. Early in the year is the best time for sowing, the young Ferns being in a much better position to stand the winter than if sown later. Before sowing prepare some 6-in. pots by filling them to within 2 in. of the top with broken crocks, over which place a layer of fibrous peat, then fill up with soil consisting of equal parts peat and loam, with a slight admixture of sand, the whole being sifted through a sieve with  $\frac{1}{4}$ -in. mesh and pressed moderately firm. Many sow on very rough soil, but in that case some difficulty is experienced when it becomes necessary to prick them off; therefore, fine soil will be found most suitable. The spores grow most readily on peat alone, but in that case they are liable to be overgrown by *conferva*, which on loam are not so troublesome. All things considered, a mixture of the two is perhaps best. After the pots are filled give them a good watering, or rather water them several times with a fine rose till they are thoroughly soaked, then sow the spores. A good plan is to take a frond of each Fern in which the spore cases are just commencing to open, and lay it in a piece of clean white paper a few days before it is wanted. The spores when ripe will fall out, and the paper being white they will be readily recognised. The sowing should be done apart from



the Fernery, as Fern spores are always floating in the atmosphere, and a mixture would be the result. To prevent this, care must be taken to thoroughly wipe the hands after each kind is sown, and no more pots should be brought forward at a time than are wanted for the one sort. Sprinkle the spores as lightly as possible on the wet surface of the soil and place them in a close case, or a pane of glass may be laid on the top of the pot. They should then be kept always moist, and when water is needed it should be either sprinkled with a fine rose or the pots may be placed about half their depth in a pan of water which will percolate through the whole mass and give all a good soaking. This latter mode is to be preferred, as there is no danger of displacing the spores. It will be found as a rule that hardy Ferns do best in a greenhouse temperature, and temperate and stove kinds in that of a stove. In about a month the surface of the soil will be quite green with the growing spores. When that is the case they must be carefully watched, and if they commence to damp they must be at once pricked off, an operation which is best done in the following manner: Prepare some pots as for sowing, except that the soil should be put in them very lightly; then with a pointed stick take a mass about the size of the end of a lead pencil of the growing spores and place it on the surface of the soil; then press it lightly with the finger, and so continue till the pot is full, when it may be watered and returned to the case. They will require dividing and pricking off three or four times before they are ready for potting, and in that case large numbers of plants are obtained from a single pot. The above remarks regarding the season of sowing only apply to the evergreen kinds; the deciduous sorts should be sown when the spores are ripe, but the treatment required is the same in both cases. It is, however, not absolutely necessary to sow the spores as soon as they are ripe; many kinds will keep good for months and even years, but on the other hand some lose their vitality in a very short time. In the case of trees or shrubs that have been grafted, see that the grafts are not blown off, for even where the union is complete that part is weak for some time; therefore care must be taken that all are securely staked and tied, or in the event of storms the results may be disastrous.

T.

## INDOOR PLANTS.

T. BAINES, SOUTHGATE.

**Ferns.**—Where there is a regular Fern house the atmosphere should at this time of the year be kept considerably drier than during the growing season, but sufficient water must be given to the roots, for Ferns above all plants cannot bear to have the material in which their roots are growing dry; where this occurs the fronds are sure to assume a sickly hue, out of which they rarely can be got until fresh healthy growth is made. One of the great mistakes committed in the cultivation of Ferns is giving them too much warmth; when so treated it has the effect of causing an undue extension of the fronds. The strong growers therefore get so large as to become unmanageable and smother the weaker ones, added to which it favours the increase of thrips and makes the plants much more susceptible of injury from fumigation or other means taken to destroy them too. The growth made in more heat than is necessary is of a character that will not stand any length of time when cut. Davallias are very suitable for using in a cut state, and in the case of the deciduous kinds all the fronds can be so used after the season's growth is completed without material injury to the plants. Of all Ferns used for cutting none is such a general favourite as *Adiantum cuneatum*, but to have it in the best condition so that it will stand without flagging in bouquets, button-holes, &c., it needs to be especially prepared. This is best effected by giving comparatively little root room, so that the pots get thoroughly filled with roots, keeping the plants as near the light as possible whilst growth is being made with a considerable admission of air, and now letting them be as cool as they will bear.

The fronds of all Ferns used for cutting will last much longer if severed from the plants and steeped completely overhead in water for a few hours before being used. Ferns that are planted out on rockwork and that are inclined to get too large may have this disposition checked a good deal by periodically cutting away as many of the older fronds, whilst still fresh and healthy, as appearance in the house will permit.

**Tree Ferns.**—*Dicksonias*, *Cyatheas*, *Alsophilas*, and similar species have a fine appearance when planted out, as they often are, in houses, but unless the structures in which they are grown are very large, it is a mistake to so treat them, for it much encourages the fronds to lengthen, and the whole growth of the plants to increase so fast, that they not only overshadow everything near them, but soon get too large for the houses they occupy. By liberal feeding with manure water these plants may be grown quite large enough to show their natural habit in pots or tubs half the size generally used, and if in place of planting the pots are plunged, the appearance will be quite equal to planting out without the disadvantages; and, moreover, it gives an opportunity of altering the position of the plants at will. Where Tree Ferns are getting too tall for the houses, instead of discarding them, as is frequently done, they can be shortened. If large wire baskets are made open at one side that they can be fixed round the stems, and these are filled with a mixture of Sphagnum, peat, and potsherds, or charcoal, and fastened to the stems at such heights as may be deemed desirable to shorten them to keeping the material moist, they will root into it sufficiently to admit of the trunks being sawn off immediately below the baskets. The present is a good time to commence with such plants, as they will at once begin rooting, and be much better established in it by next autumn, than if the baskets were fixed on in spring. It requires a year to prepare them before they are cut off, without which the succeeding lot of fronds formed come small.

**Greenhouse.**—Should wet weather continue a little fire heat ought to be used two or three times a week to dispel damp, but in this, care must be taken that the heat is on early enough in the mornings, accompanied by additional top ventilation, to enable the pipes or flues getting cool before the time in the evening, when it is necessary to shut up the house, otherwise there will be a tendency to move many plants into growth that require to remain dormant.

**Cyclamens.**—Young plants of these raised from seed some fourteen or fifteen months ago will now be pushing up their flowers; a temperature of 45° in the night suits them. With *Cyclamens* it is necessary to be always on the look out for aphides. Where seed was sown about midsummer the plants will shortly be ready for pricking out; they are best put in shallow pans filled with a mixture of peat and sand, or where very good yellow loam can be obtained in addition to the sand a little leaf-mould may be used. Whatever soil is used I have found it necessary that it should not be adhesive, otherwise the roots get broken when removed to pot singly. Keep the young stock in an intermediate temperature near the glass, so that it may have plenty of light.

**Fuchsias.**—Old plants should be dried off, then pruned, and stowed away in their winter quarters. Young examples raised from cuttings struck towards the end of summer ought to be potted singly and set within a few inches of the glass in an intermediate temperature, so as to keep them growing slowly through the winter without being drawn.

**Berry-bearing Solanums and Aucubas.**—Where a good stock of Solanums is prepared they are for some purposes during the winter more useful than flowering plants. If a portion were propagated early, and another lot struck in the spring, the latter will attain their colour to succeed the former, and by this means a supply fully fit for use may be kept up from the present time until spring, as the late struck plants will

yet have their green berries. They are water-loving subjects, and whether grown through the season in pots or planted out and then repotted in autumn, the soil must be kept continuously moist, or the leaves become discoloured and the plants thin. Fumigate or dip into tobacco water until the stock is completely free from aphides. The female forms of *Aucubas* grown in 6-in. or 8-in. pots standard fashion, with stems from 1 ft. to 2 ft. high, make excellent conservatory and room plants; where they have been well managed they will be now fully furnished with ripe berries, and may be employed along with greenhouse-flowering and fine-leaved subjects.

## ORCHIDS.

J. DOUGLAS, LOXFORD HALL.

**East India house.**—Now that the season has advanced so far, shading may be entirely dispensed with. We remove all our blinds and rollers now, and store them in a dry place for the winter. Many keep them up, and let them down to cover the glass when a keen frost sets in at night; this is very well so far as the covering of the glass is concerned, but the blinds become frozen or soaking wet, and cannot be rolled up early in the morning, and the plants are robbed of a few hours' light, when every ray is of advantage to them. For this reason we prefer to remove the blinds altogether. In ordinary weather the temperature should range about 65° at night, rising to 10° in the day time or even 20° with sun heat. Atmospheric moisture, too, must be regulated by the state of the weather outside. Where it has been necessary to make the hot-water pipes very warm on frosty nights to maintain a high temperature, the atmosphere will be rather dry in the morning; therefore the paths and stages must be well watered just before the top ventilators are opened a little. We have no water in the evaporating trough after this time. Pay careful attention to the different species of *Phalenopsis*. If they receive too much water now, the roots are likely to rot and the leaves to spot; on the other hand, they must not be allowed to become so dry as to injure the Sphagnum, else the plants will perhaps suffer too, as they have not pseudo-bulbs like *Cattleyas* to support the leaves. They ought at this time of year to be placed as near the glass as possible, but not of course so near that the leaves will be injured by frost. Up to this time we have had *Cattleya gigas* in the cool end of this house, where it has made very fine growth. This most beautiful species is well known to be shy in producing flowering sheaths, but I was told the other day that this is generally owing to the plants being kept too warm in winter. Some of the plants have, therefore, been placed in the cool house where the temperature falls as low as 45°; they are kept there until they start into growth in the spring, when it is found that such plants invariably flower well. Of course, they must have very little water while they are in cool houses. It is best, I imagine, to keep *Odontoglossum Roezli* in the cool end of this house; that is the way in which we treat it, and our plants make very fine growths during winter, and throw up flower spikes in spring. *Lælia purpurata* that may be late in making its growths should be placed in this house; when necessary to water it be careful not to wet the young growths. *Calanthe veratrifolia* is now growing freely; we potted ours in good sandy loam, leaf-mould, and a little rotten stable manure a few weeks ago. The deciduous species, such as *C. Veitchii* and the *vestita* section, are now throwing up their flower-spikes. They lose their leaves as the flowers open, and as the decaying foliage is not attractive, we place the plants amongst Maiden-hair Ferns; they require but little water while they are producing their flowers.

**Cattleya house.**—About 55° is a good temperature for this house now. The quantity of water which any particular plant may require must be regulated according to the state of its growth; if making growth, it might cause a check if the plants were suffered to become too dry. Any of



the species that may have completed their growth should be watered with caution. The very beautiful *Odontoglossum citrosimum*, which does best in this house, should receive very little water indeed. When the growths are completed some place their plants in a cooler house to rest; they ought certainly to be placed in the cool end of the *Cattleya* house; 50° would be the best temperature for them in the winter. We have now the beautiful *Pleiones*, which produce their flowers very freely. They are all of very easy growth, but we prefer *Pleione maculata*, its flowers with their rich crimson markings on a pure white ground being so delicately beautiful. Our plants have lost all their leaves, and the flowers look best against a green setting of Ferns or small-foliaged plants. They have been kept dry at the roots up till now, but as the flowers open we give them water rather freely. Pay attention to the different species of *Dendrobium* in this house, and as the growths are completed let them be removed to a cool, airy position in another house. Some of them, such as *D. Wardianum*, *D. nobile*, *D. Ainsworthi*, &c., will start into growth again if they are not removed as soon as they have completed their summer growth. Our largest specimen of *D. devonianum* started to make a second growth a month ago, and we must keep growing the plant on until that second growth is completed. The various species of *Vandas*, such as *V. suavis*, *V. tricolor*, &c., are still growing freely, a circumstance quite evident by the larger healthy roots still thrown out from the main stem. While this is the case they must not lack sufficient water to keep the *Sphagnum* fresh. The Fox-brush *Aerides* (*A. Fieldingi*), *A. crassifolium*, *A. Lobbi*, &c., are now receiving the same treatment as the *Vandas*.

**Cool house.**—We find that the temperature of this house falls rather low on the mornings, following an outside temperature, not far above the freezing point, but we do not trouble about artificial heat so long as it is not below 40°; better, however, it should not fall below 45°, as we have *Masdevallias* which do not like so little warmth, and our fine plant of *Cattleya gigas* is in the same house. It is getting late now for potting, but if any plants are in an unsatisfactory state at the roots, it is better to pot them than leave them in that condition all through the winter. The beautiful bright scarlet *Sophranitis grandiflora* will soon enliven us with its dazzling brightness. See that the plants are well exposed to the light; they do best on blocks or in small pans suspended from the roof. We have numerous spikes of the very popular *Odontoglossum crispum* and *Pescatorei* well advanced towards the blooming stage. They must be very jealously guarded from slugs, and green-fly must be removed before the blooms open.

#### FRUIT.

W. COLEMAN, EASTNOR CASTLE.

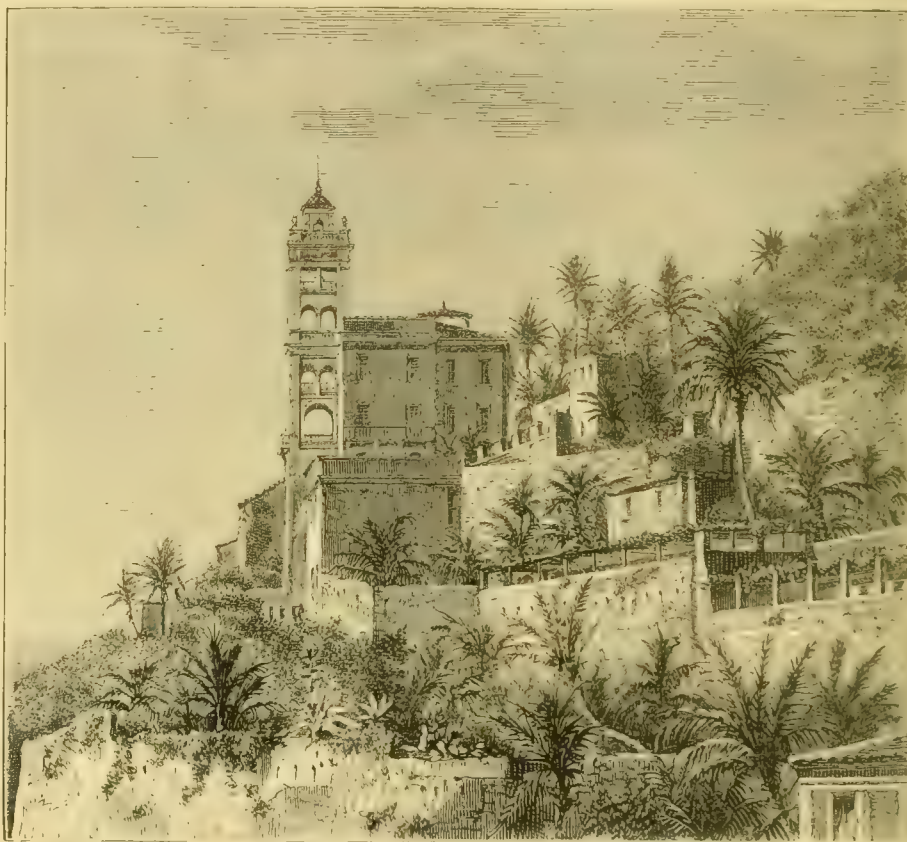
**Pines.**—If the final arrangement of the plants for the winter months remains incomplete, a single day should not be lost in getting the different sections together, fruiters and recent starters, where they can have plenty of heat and light and successions in light, well ventilated pits where atmospheric moisture from the plunging beds is always present. If any of the beds require renovating, great watchfulness must be observed, as an excess of heat, now the pots are full of roots, might soon do serious injury. In all cases the tan or leaves should be well worked and fermented in an open shed, and where the mixing of the old and new together is likely to produce too much bottom heat, the latter may be spread over the surface of the bed, and the general turn over may be deferred until January. Be careful in the application of water to the roots, but supply it freely when the plants actually require it. Keep them free from suckers until the plants become strong enough to throw up fruit, and then, in the case of ordinary kinds, allow one sucker to each fruiting plant. Scarce or shy kinds may carry two suckers, and when the fruit is cut divest the old stems of their leaves; lay them close together in shallow boxes filled with soil, and plunge in the

strongest bottom heat at command. Having done away with shading, give plants in all stages the benefit of the highest attainable temperature from sun heat by shutting up at 1 p.m. Make but little difference in the mean until the fine weather breaks, and then be prepared with suitable covering for placing over the glass by night.

**Vines.**—Where the first crop of Grapes is obtained from Vines in pots, the house in which they are to be grown should now be ready for placing them in position. Wash the young canes with soap and water, see that the drainage is right, and top dress with old turf and bone dust. If bottom heat is to be applied to the roots, each pot should be elevated on a firm pedestal of bricks, so as to admit of the removal or renovation of fermenting material without disturbing the roots later on. Suspend the rods in a horizontal position over the fermenting material, start with a minimum

sweeping and raking; remove pot plants of all kinds, at least if they require water, and keep the house dry, cool, and well ventilated. Where first-class autumn and early winter Grapes are in demand, Venn's Seedling should not be overlooked, as it sets, colours, and finishes well under Hamburg treatment, and keeps a long time after it is ripe. In a Hamburg house, from which we commenced cutting early in July, this delicious Grape is still hanging fresh and plump, never having lost a berry.

**Strawberries in pots.**—Although these plants will now require water less frequently, see that they have enough to keep the balls moist and to prevent them from shrinking away from the sides of the pots. The old system of drying off and stacking the plants in cones for the winter has been given up by the majority of growers, and the more rational mode of placing them in



Villa of M. Ch. Garnier, Bordighera.

temperature of 56°, and gradually increase it as the buds swell and show signs of breaking into growth. If the outside borders of early houses have been thoroughly moistened by the autumn rains, and top-dressing has been finished, get them covered up with dry Fern or litter, and place lights or shutters over and well above it for the purpose of throwing off rain, which will now have a tendency to chill the surface roots. Encourage the formation of internal roots by the removal of every particle of inert soil, and replacing it with fresh turf and bones, resting on good drainage. With some internal drainage is considered unnecessary, but this is a great mistake, as a well managed inside border will take 3 ft. of water in the course of the growing season, and the quicker it is carried off the more healthy will the roots be. Houses in which Hamburgs and other thin-skinned Grapes are hanging will require nice management to prevent the berries from damping. Look the bunches over twice a week, discontinue

cold pits has taken its place; but here even they should be fully exposed to the elements by having the lights thrown off them every day when the weather is not wet or intensely severe. If plunged to the rims of the pots in Oak leaves or spent tan, free from worms, and regularly attended with water, they will retain their roots in a healthy state, and the foliage will be free from mildew and spider when they are taken in for forcing. Where cold pits are not available, Strawberry plants will winter well plunged in an open, but sheltered place in the kitchen garden with skeleton lights placed over them for supporting Fern or mats in very severe weather. Here the latest kinds may remain, giving very little trouble until they throw up flower-stems in the spring, and tender kinds like British Queen and Sir Charles Napier will be more vigorous than they would be after passing three or four of the darkest months in a close pit or before open ventilators in a cold, arid house.



# KITCHEN GARDEN. R. GILBERT, BURGHEY.

FROST may now be expected at any moment, therefore it behoves us to be on the safe side. Proceed at once to lift and lay in all autumn Broccoli; some break the leaves over the heart, but this is not sufficient protection; much the better plan is to lift the whole and lay the plants in thickly, having dry Fern at hand to throw over them whenever the frost sets in. Endive should also be lifted as it is required, say from three to four dozen weekly, placing it in the Mushroom house, plunged in any light soil, sprinkled over with powdered charcoal to prevent damping. Look over all newly planted Cabbage, and wage war against the Cabbage grub. Lettuces are sometimes preferred for salads to Endive; therefore lift them in quantities and protect them under glass frames. Keep up good supplies of Mustard and Cress by sowing thickly in boxes in heat. When up shift the boxes to a cool, airy Vinery, where the plants will acquire the necessary colour. The seed should never be covered, but pressed down in the soil and sprinkled over with fine charcoal. Onions, I should presume, are now mostly harvested, therefore the land can be at once utilised for Cabbages, Lettuces, &c. Dig and manure all vacant borders or quarters, laying the soil up roughly for the winter. There is nothing that sweetens all soils so well as frost, which appears to quite alter their character, making the stiffest of clays like a bed of ashes. Keep up the stock of French Beans, and sow Fulmer's Early in small pots for shifting on to succeed those just potted. There is no enemy like thrips for damaging French Beans, therefore syringe them in the morning with the following solution: Procure one shovelful of fresh lime and half that quantity of soot, put them into a tub, and pour in say one gallon of water; then take an old broom and well mix them together; then add 40 gallons of clean soft water. In twenty-four hours skim it, and the colour will be like that of bitter beer. By syringing with this every morning you will kill, or rather drive away, the thrips, and at the same time add to the health of the plants.

# A GARDEN ON THE MEDITERRANEAN SHORE.

THE illustration on the opposite page shows the beautiful villa that M. Ch. Garnier, the architect who designed the Parisian Opera House, has built for himself on a rocky cliff covered with Palms at the foot of the Maritime Alps, and overlooking the Mediterranean. The house with its surroundings has quite an oriental aspect, and an admirable feature are the rocky terraces which support the building, being furnished not with a formally planted garden, but abounding in an infinite variety of vegetation all mingled in picturesque confusion. Date Palms are the most prominent; they grow abundantly about Bordighera and San Remo, and furnish the greater part of the large quantities of leaves that find their way to Rome and other places at Eastertide. Olives, Opuntias, Figs, and Agaves are among the other plants shown in the engraving, the whole creating quite an Eastern picture. Our illustration is from M. André's excellent work "l'Art des Jardins."

**Eradicating cockroaches.**—Let "W. A. S." procure some small pickle bottles or jam pots, into which put a little treacle. The bottles or pots should then be sunk in some mould or ashes convenient to where the cockroaches are most numerous. A little of the treacle might also be smeared on the edge of the bottles so as to allure them inside. "W. A. S." will, I am sure, be delighted (as I was) at finding the bottles in the morning half-full of furious cockroaches. I always burn the dead cockroaches, as the lady who told me of this recipe assured me if I killed and left

them lying about the eggs within them would hatch and come out in due time.—THOS. SPELMAN, *Solsborough, Nenagh.*

# NOTES OF THE WEEK.

**New Pitcher plants.**—At last the long-heard-of *Nepenthes Rajah*, which bears the largest pitchers of any known species, has been successfully introduced to cultivation, and in such quantity that there is no likelihood of its ever disappearing from our hothouses unless it proves unmanageable. It is from the island of Borneo, whence seeds of it were brought by Mr. Peter Veitch and Mr. Burbidge, who found it growing on Mount Kilu Balu when travelling for Messrs. Veitch, of Chelsea. From these seeds plants have been raised which even in their infancy betoken how grand fully grown plants must be, the pitchers being about 1 ft. in length and holding not less than a quart of water. The colour of the young pitchers is a deep red, and no doubt this colour prevails in the matured pitchers. Both a young plant and a dried pitcher were exhibited at South Kensington on Tuesday last, where they excited a good deal of interest. The other new Pitcher plant is *N. madagascariensis*, which, as its name implies, comes from Madagascar. It is a most attractive plant, the pitchers being of an extremely handsome shape, and stained with a blood-red hue. Not the least remarkable point about it is the fact that it bears pitchers from the tips of every leaf, even in a small state. This also was exhibited.

**Phalænopsis at Clapton.**—Again the spacious houses in Messrs. Low's nursery devoted to this class of Orchids will shortly present one of the finest floral displays imaginable, as may be inferred from the fact that of *P. Schilleriana* alone there are upwards of 1000 flower-spikes developed on plants occupying one capacious stage. To overlook such a vast assemblage of magnificent bloom is a rare treat, and no doubt the collection will, when in flower, present a great diversity with regard to variation both in size and colour of the bloom. *P. amabilis* and *grandiflora* are other species represented in similarly vast quantities, and all the plants indicate such a vigorous healthy growth with spotless leaves and healthy succulent roots that were it not for the miserable examples often met with one would think that these Phalænopsis were amongst the easiest Orchids possible to manage. At the date of our visit there had been a recent importation, comprising some thousands of plants, which did not have the appearance of newly imported plants, so faultless were they in every respect. These will soon re-establish themselves, and another season will no doubt replace the plants that flower this year.

**Petunia Mount Beauty.**—Is this beautiful Petunia much known? If not, it well deserves to be, as it is one of the prettiest varieties imaginable. The blossoms are large, single, and of a rich satiny violet-purple, with a conspicuous white eye. It is almost a perpetual flowerer, and, moreover, possesses a distinct habit of growth which renders it specially adapted for training to a support. It was in great beauty the other day in Mr. Joad's garden, at Wimbledon, in a house, the rafters of which were adorned with a brilliant variety of *Tropæolum*.

**Viburnum plicatum.**—Like the Guelder Rose (*V. Opulus*), this *Viburnum* presents by the bright and varied hues of its foliage an attractive appearance in autumn. Some standard plants of it in the nursery at Coombe Wood have been effective in this way for some time past, almost rivaling in this respect the rich colouring of the Japanese Maples, which at this season wear a brighter garb than at any other time of the year.

**Two rare Vandas** are in flower among the Orchids in the Kew collection, viz., *V. Batemani* and *V. Bensoni*. The former we have noticed on a previous occasion, some three months ago, and it is a remarkable fact that it is still in flower, no fewer than thirty-two blooms having been pro-

duced on one spike, thus affording a striking instance of the protracted habit of flowering which some Orchids possess. The other species, *V. Bensoni*, is a pretty flowered plant, the colour of the sepals being a soft brown, that of the lip a delicate rosy pink, a combination of colour that is very harmonious and pleasing.

**Ceanothus papillosus.**—Among the many kinds of *Ceanothus* at Messrs. Veitch's, Coombe Wood Nursery, this one was the finest in bloom a week or so ago. It is a neat growing species, having tiny leaves and dense small clusters of rich blue flowers produced in great profusion from every twig. It is planted against the wall of one of the houses, and though a little injured last winter is hardier than some of the other species. It has a more refined aspect than some of the varieties and hybrids related to *C. azureus*.

**Passiflora kermesina.**—Those who require a stove climber of simple culture, and one that is almost a perpetual flowerer, should possess this which is certainly one of the most valuable plants with which we are acquainted. In the garden at Oakfield, Wimbledon, is a stove, the greater part of the roof of which is overhung with it, and whenever we see it it is invariably carrying a crop of bloom, sometimes full, at other times scant, but always some. The rich carmine tint of the flowers is almost unique among stove climbers.

**Rosa polyantha.**—In addition to the myriads of pretty white flowers which this Rose bears in summer, it produces in autumn an abundance of tiny red fruits that hang like wreaths of coral midst the green foliage. At the Coombe Wood Nursery, a large plant of it in this condition is highly attractive, as some of the shoots are several feet in length, and gracefully spread out in all directions, producing a charming effect.

**Muhlenbeckia complexa in flower.**—This elegant New Zealand plant is so seldom seen in flower, at least about London, that the circumstance is quite worthy of notice. A fine plant of it is now covered with tiny, waxy, white flowers in the rockery house in Mr. Joad's garden at Wimbledon. It is planted high on the rockery, and the long wiry branches and elegant foliage fall over the rocky ledges in a most graceful manner. It is a capital plant for such a position, but is scarcely hardy enough to plant outside entirely, though a large plant of it existed in the open air at Kew previous to the winters of 1879 and 1880.

**Hardy Heaths** continue to cheer our gardens till late in the year. Messrs. Dicksons, of Waterloo Place, Edinburgh, now send us some beautiful kinds from their nursery, among which Searlei, a variety of the common Ling, is extremely pretty, with its tiny silvery bells nestling amidst the deep green foliage. *E. multiflora* is a bright little plant, with dense whorls of rosy-pink flowers.

**Chinese Primula Meteor.**—We have just seen flowers of this beautiful variety—by far the finest with which we are acquainted. Its flowers are not remarkable for large size, but the colour, a brilliant carmine crimson, is quite unique, and makes a fine contrast with the symmetrically formed centre of yellow. The edges are fringed and crimped in a charming manner. It was raised in Mr. Little's garden, Hillingdon Place, Uxbridge.

**American Mother Apple.**—We lately had a fruit of this Apple from the young trees in Messrs. Veitch's nursery at Fulham, and we think it one of the most delicious of all Apples, the flesh being of delicate texture and exquisite in flavour. It is, moreover, a very handsomely shaped Apple, highly coloured, and of large size. This is one of the few American Apples that ripen well in this country.

**The autumn tints of the Pontic Azaleas** are now highly attractive, especially in the north. Messrs. Dicksons send us from their nursery at Edinburgh some twigs, with highly coloured foliage; also an Indian species of *Vaccinium* is highly coloured, the foliage possessing many shades of red.



**Maxillaria venusta**, as sent to us from Glasnevin, is a beautiful Orchid, having large ivory white pointed sepals and a golden yellow lip. The blossoms are deliciously scented, and greatly liked in a cut state.

**Cutting Pinks.**—From Messrs. Dicksons, Edinburgh, come two pretty Pinks, which they call "cutting" Pinks, as they are useful as cut flowers, we suppose. Mrs. Grieve is a good deeply coloured kind; and a light kind, Tom Welsh is also good and large.

**Double Matricarias.**—Messrs. Dicksons, of Waterloo Place, Edinburgh, send us two forms of this now popular hardy flower. Besides the ordinary type there is a variety called Grievei with larger blossoms. It grows but 1 ft. high. Double Matricarias flower very freely in autumn, but there is a want of quality and fragrance in them which makes us care little for them.

**Potentillas in October.**—Mr. G. Jenkins sends us some very showy Potentillas from the Chad Valley Nurseries, Birmingham. These flowers are good in colour, but very deficient in form, owing to their irregular doubling, so to say. They usually have neither the pure good form of the single species nor the boldness and massiveness of a good double flower. Mr. Jenkins says Phloxes are very fine now "from spring cuttings."

**Single Stocks.**—Some of these I consider very lovely. By selection we might establish a good strain, and it should be worth the trouble of seed growers to do so. I have gathered some today, and they are excellent in floral arrangements. The colours are brilliant and clear, while the perfume is delightful. The tide of favour has fairly set in for single flowers, and these appear to me deserving of notice.—R. I. L.

**Bolbophyllum umbellatum.**—This, from Glasnevin, is one of those queer little Orchids which require a lens almost to discover their beauty. When magnified, the flowers are seen to be exquisitely spotted with chocolate on a pale ground, and the tiny lips of a bright violet-purple, oscillating as it were on a hinge. The flowers, about half a dozen, are produced in umbels on slender stems. It is, we believe, a very rare species.

**Apios tuberosa** (the Ground Nut) is a desirable plant for trailing on a trellis or a pillar. It is neat in foliage, and during summer produces numerous bunches of sweetly-scented blossoms similar to that of Violets. It is quite hardy, but enjoys the protection of an unheated house. In one of Mr. Wilson's Lily houses at Heatherbank, Weybridge, we lately saw a fine plant of it clambering over the supports of the house and hanging very gracefully.

**National Auricula, Carnation, and Picotee Societies.**—The annual and general meeting of these societies was held at South Kensington on the 11th inst. It was decided to hold the Auricula exhibition on April 25, and the Carnation and Picotee exhibition on July 25, 1882, in the gardens of the Royal Horticultural Society. There are no alterations in the schedules, except that some restrictions are placed on the exhibitors of show Auriculas in the interests of small growers. "Exhibitors showing in the classes for 12 and 6 are not allowed to exhibit in 4 and 2." The prizes for seedlings are to be continued as usual.

**Tomatoes from Canada.**—We saw at Kensington on Tuesday a very interesting box of Tomatoes, and another of Apples, both packed in a curious way in layers of cells formed by brown mill-board. The Apples came perfectly; the Tomatoes had decayed in many instances; but in others, strange to say, they came as firm and good as we have ever seen a Tomato. This is an important fact. It may be possible to ascertain the exact condition of the fruit at starting which kept so firm and well, that one could have made a first-rate Tomato salad for an epicure with them, and to select fruit for travelling in the same condition. If Tomatoes can be sent across the Atlantic in good condition we shall have them selling as cheaply as Potatoes. The mode of packing is very ingenious—

stiff paper boards mechanically fixed to form cells just about big enough to contain a fruit.

**Callirhoe involucrata** is an excellent late autumn-flowering plant for the rock garden. It is of neat, dwarf-tufted growth, and bears a profusion of large rich magenta blossoms, cup shaped with white centres. It seems to be perfectly hardy at Tottenham, where, at Mr. Ware's nursery, we lately saw it in beautiful condition.

**Dahlia gracilis.**—This excellent single Dahlia is now in flower in the Botanic Garden, Chelsea. It is the best habited among singles, and, moreover, the foliage is very pretty. Fine as the original species is, however, it has been greatly improved by Mr. Moore. He has *D. gracilis* superba crimson scarlet; there is also a yellow variety, and a buff or fawn coloured form.—J. DOUGLAS.

**Presentation to Mr. John Dominy.**—At the meeting of the Royal Horticultural Society, on Tuesday last, Mr. Dominy, the well-known Orchid hybridist, who has recently retired from the employ of Messrs. J. Veitch & Sons, Chelsea, after forty-three years' service, was presented by Sir Trevor Lawrence, M.P., with a testimonial, consisting of 200 guineas and a watch of the value of £50, subscribed by 116 friends as an acknowledgment of the services he has rendered to horticulture in general, and to Orchid growers in particular. Sir Trevor Lawrence (with whom the testimonial originated) in making the presentation made some appropriate remarks upon the value of hybridisation both to horticulture and botany; he considers that we shall have to rely entirely upon the skill of the hybridist for new varieties when the fields of exploration have become exhausted. Dr. Masters commented on the value of hybridisation in relation to scientific research in determining the limits of genera and species, and remarked that formerly the botanist looked askance at the work of the hybridist, but now his labours are valued.

**An October Nosegay.** I recommend pink China Roses with a bough of flowering Ivy. G. J.

**Lobelia syphilitica rosea.**—Mr. F. G. Moore writing from Glasnevin praises this plant, which has lately been in good bloom with him.

The Cactus Dahlia flowers strongly and freely in some soils, though with a bad name in these respects about London; it is a question of putting out strong plants early.

**Alonsoa incisa** is the best of all the species, being brighter and more floriferous than any; it also flowers for a greater length of time. Even now about London it is remarkably gay with bloom in the open.

#### FROM MID-NORFOLK.

By this post I forward a few of the flowers now decorating my garden. Many flowers supposed to be delicate here with very slight root protection have withstood the last two winters, and my garden is by no means warm. *Eucomis punctata*, now in full bloom, *Zauschneria californica*, just over, *Plumbago Larpenae*, *Tropæolum speciosum*, *Jaborosa integrifolia*, just over. I may cite as instances; [contrary, however, to the experience of your correspondent of North-east Norfolk, here the foliage of all deciduous trees except Oaks is very scanty this year. Nearly every Lombardy Poplar is killed, other Poplars and Ash trees much injured, Limes, Horse Chestnuts, Elms, boast but thin foliage. Here Campanula pulla does best under a north wall; the same is the case with the dwarf white variety pumila. *Fritillaria Meleagris* is so common in all the Oxford meads, and especially in the Christchurch meadows, that in early spring they present the appearance of Red Clover fields. *Colchicum autumnale* is very common in the neighbourhood of Wells, Somerset. On a hillside between that city and Shepton Mallet the variety abounds. The wild Tulip is found, I am told, in many parts of Cheshire.

It would be a kindness, I am sure, to many besides me if you would point out the distinction between Violet Giant, Victoria Regina, and Giant; between Empress of Germany and Blandiana;

between Violets Russian, De toutes les Saisons, and Devoniensis; between Violet Czar and the common white wild variety; between Belle de Chatenay, double white, and La Reine.—NORMAN.

[We welcome a new correspondent who sends a very beautiful series of flowers from the open ground cut on October 12.]

**Gardening at Normanhurst Court.**—Many tell us the time has gone by for growing Peaches on outside walls, but let me recommend those who say so to go to Normanhurst, when I feel sure Mr. Allen will at once dispel from their minds such a notion. On September 19 I there saw some grand examples of Peach culture; most of the good old varieties are there represented, and many modern ones also. Well trained Pear trees clothe the walls, and I noticed Comte de Lamy, Glou Morceau, Marie Louise bearing full crops of fine large fruit, besides a whole host of pyramids of both Apples and Pears in the very best state of health. In the kitchen garden department there is generally seen walks overgrown with weeds, and the kitchen cropping jumbled together as if unworthy of attention; but that is not so here. Among other things the break of Celery astonished me. Sandringham White is largely grown, not over 16 in. high, but remarkably thick and well blanched; in fact, I begged two heads and brought them home for seed. Major Clarke's Red is also capital. I also saw large breadths of Broccoli of the leading varieties, and an extra good strain of Brussels Sprouts looks like being most useful in the depth of winter. I noticed likewise full crops of Parsnips and Carrots—the latter worth the name; and above all plenty of good Parsley. In fact, I never looked over a more complete or better managed garden.—R. GILBERT, *Burghley*.

J. W.—The books you name may be had at this office. We cannot interfere with other people's prices.

J. H. H.—See a mode of destroying cockroaches in another column. Boiling water kills woodlice, but be careful not to let it near the roots of the plants.

**Names of Fruit.**—J. K.—1, unknown to us; a very good, delicately-flavoured Apple. Please send a few specimens with a bit of wood and foliage also; 2, Fearn's Pippin; 3, King of the Pippins; 4, Early Townsend; 5, Cellini Pippin. H. Wells.—Old Nonpareil. A. J. H.—Cannot name.—J. G. (Ipswich).—Apparently the Five Crowned Pippin.—*Rydal Mount*. 1, Beurré Rance; 2, Beurré Diel; 3, Glou Morceau; 4, Calabasse Bosc.

**Names of plants.**—*Salmoniceps*.—*Cimicifuga simplex*, native of Japan. John A. Campbell.—1, *Cystopteris fragilis* (grown strong); 2, *Polystichum aculeatum* var. *lobatum*; 3, *Athyrium Filix femina fissidens*. W. C. 1, *Platanus occidentalis*; 2, *P. orientalis*.—T. B. (*Blackburn*).—1, *Polystichum capense*; 2, *Selaginella Willdenowii*; 3, apparently *Asplenium laserpitiifolium*; 4, *Aspidium falcatum*.—D. J.—*Amaryllis Belladonna*.—T. S. B.—apparently the Manna Ash, *Fraxinus Ornus*. *Mos*. 1, specimen insufficient; 2, *Asplenium marinum*.—E. Molyneux.—1, *Rudbeckia Newmanni*; 2, *Plumbago Larpenae*; 3, *Aster longifolius* var.; 4, *Euphorbia Lathyris*; 5, *Pycnanthemum uliginosum*. *Norman*. *Aster elegans*. A. Novae Angliae pulchellus, *Rudbeckia Newmanni*, *Clematis integrifolia*, *Colchicum variegatum*. G. P. *Crataegus orientalis*.

#### COMMUNICATIONS RECEIVED.

October 7: H. W.—C. B.—G. J. C.—N.—H. H. C.—N. B.—W. & J. B.—H. L. S.—F. W. B.

October 8: F. M.—E. F.—T. M. B.—T.—H. H. D'O.—J. M.—C. W. D.—J. C. & Son.—Von V.—J. G. B.

October 10: G. M.—C. A. C.—R. N.—T. B.—H. T. E.—G. S. & Son.—G. B.—J. C.—R. C.—Delta. J. S. J. K. J. W.—F. S.—J. H. H.—W. B.—J. B. C.—P. N. F.—S. A. U.—S. D.—C. C. W. E. G.—N. G.—J. D.—H. E. H.—R. D.—G. W.—J. D.—B.—R. W.—T. L.

October 11: R. G.—W. R.—G. P.—W. G.—W. S.—M. E. G.—J. S. W.—T. B.—E. J.—J. G.—S. L.—W. H. G. S.—C. P.—W. H.—J. G.—W. L.—S. L. B.—R. M. R.—H. J. V.—T. S. W.—W. J. M.—T. S. W.

October 12: Mac.—G. J. D. T. F. D. W.—E. W. & Sons.—J. H.—T. H. A. H.—G. S. & Son.—C. H.—F. M.—D. J.—M. F.—D. B. H.—W. C.—G. L.—D. M.—H. H. C.—J. D.

October 13: A. C. B.—R. M. G.—G. S. & Son.—J. C. C. J. S. & Sons.—J. G.—R. J. L.—W. T.—B.—D. & Co. 2. G. M.



No. 518. SATURDAY, OCT. 22, 1881 Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare.*

## THE LATE GALE.

From all quarters we hear of disastrous results arising from the gale that raged on Friday, the 14th. It did, amongst other things, irreparable damage to trees. At Kew the trees that suffered most were Elms, great numbers of which, all of large size, were either torn up by the roots or snapped off near the base. The old Elms in front of the herbarium were among the first to fall, and some of the trees in the fine clump known as the "seven sisters" were broken down and the others dismembered. In fact the gale was so severe, that it snapped off trees and limbs everywhere that were in any way faulty. A fine Oriental Plane with limbs as large as a man's body was wrenched from the ground and the branches twisted in all directions. In the old arboretum there much damage was done. The fine old tree of the Paper Mulberry (*Broussonetia papyrifera*) was broken off close to the ground; several fine flowering trees, such as *Mespilus grandiflora*, were uprooted, and big limbs of the old Sophoras, Willows, and a host of other trees were also strewn in all directions. Nor did the trees in the pleasure ground escape; the newly planted ones in the arboretum were nearly torn out of the ground; huge limbs of Oaks, Elms, Beech, and Lime were wrenched off, as were also some of the more spreading arms of the grand old Cedars.

At Syon the storm did considerable damage to the trees. There are over thirty down in the pleasure grounds and park, and as many more injured, but fortunately they are nearly all common trees, such as Elms, Limes, Beeches, and Poplars. All the choice trees, such as deciduous Cypressess, Liquidambars, Cedars, Planeras, Sophoras, Gleditschias, Tulip trees, and choice Oaks, have escaped with the loss of a few branches. One large Beech tree in falling lifted with its roots a mass of earth 20 ft. by 16 ft.

One of our correspondents says, "The havoc done by the gale the other day is appalling. Roads are blocked in many cases with fallen trees, but the chief destruction is among the boughs. These were tossed about like so many wisps of hay, and in such profusion as to give the idea that a gang of woodmen had been at work upon them. I fancy we must go back twenty years at least for a parallel. As to the flower garden, more especially the sub-tropical portion of it, it is unnecessary to speak. Six degrees of frost this morning (17th) has pretty well settled that for this season."

From the Royal Gardens, Windsor, Mr. Jones writes: "The storm of Friday last was the most severe and disastrous to shrubs and trees that has passed over this district for many years. In the Home Park (adjacent to the Castle) the ground is literally covered with limbs and branches of trees and shrubs. Trees of all kinds have suffered, in many instances being completely wrecked, but the greatest havoc has been among the Elms, which, from their great height, caught the full force of the gale. In one avenue twelve fine old Elm trees were blown down, and such was the force of the wind (which culminated about noon), that in several instances full grown timber trees were snapped off level with the turf. Altogether, some thirty fine trees were blown down, and from forty to fifty others seriously damaged on the slopes and in the Home Park. These include Elms, Oaks, Limes, Acacias,

Chestnuts, Spruces, Poplars, Mountain Ash, &c. Nor is the damage confined to the trees enumerated; many of the choicer species of shrubs and Coniferae, such as *Cedrus atlantica* and others of similar spreading habit, have had large limbs wrenched off them."

At Bury St. Edmunds from a very early hour in the morning of Friday last, Mr. Peter Grieve writes, a furious gale raged throughout the whole of the day, doing immense damage to property of various kinds, breaking glass, unroofing buildings, and scattering slates and tiles in all directions. It prostrated many fine trees of various kinds and in various places, including the Botanic Gardens. There a fine Horse Chestnut, evidently from a self-sown seed, growing in the ruins of what was once the abbot's parlour, is denuded of some of its finest branches and nearly destroyed, while many other ornamental trees are uprooted. In a meadow near the town, called the Grindle, a boy was killed by the fall of a tree, and another badly injured.

Mr. Hobday says: An old man, 75 years of age, who has worked at Ramsey Abbey from boyhood, states "there has been nothing like the gale that swept across the Huntingdon marshes for the last fifty years," and certainly I never remember to have seen so much wreckage before. Trees standing exposed to the full force of the wind have been stripped of their leaves (although quite green), and are now as bare as they usually are in the depth of winter. Many valuable trees have been disfigured and some destroyed by the wind, and the autumn flowers are blown and twisted about in all directions.

Mr. Groom writes from Linton Park, Maidstone, "The rapid fall of the barometer on the evening of Thursday, October 13, warned us of some unusual storm either of rain or wind being at hand, and as the night closed in the wind gradually increased in force, accompanied with rain, until on the morning of the 14th at daylight it was blowing a complete hurricane, that gained in force as the day advanced. Beginning south-east, it gradually veered round to the south-west, tearing along the face of the slope here as if every tree must go down before it. However, our large trees stood it bravely, for although there was a continual crashing of limbs from the tall Elms that abound here, and lofty Poplars were snapped in half like matchwood, yet no choice or valuable trees were injured, and not a tree was blown up by the roots. This I attribute entirely to having a good depth of soil of a tolerably adhesive character resting on a broken stone formation, in which the trees root firmly. They may be blown right in half in the solid stem, but there is no moving the roots. On chalk or gravel I have seen trees blown down wholesale with less force. Hereabouts, not only the thatch, but ricks of corn were completely upset. In the Apple orchards the effect of the storm was most disastrous, for, owing to the extraordinary crop, many large growers had barely finished gathering their early market sorts, and had only had a few days' gathering of such sorts as Wellingtons, Golden Knobs, and other late keeping kinds which are being stored for winter, and as they are all now fit for gathering the wind stripped them from the trees in bushels. Most of the orchards here are on Grass, and that being now rather long saved great quantities from being bruised, but on cultivated soils they are useless for storing, and only fit for immediate culinary uses, or for the manufacture of cider, at very reduced prices. This will cause great loss to the owners, or rather to the purchasers, for the majority of orchards that are attached to farms are sold by auction each season according to crop; owing to the gathering coming at a busy season, farmers prefer a lump sum, leaving the buyer to

gather and clear the crop. The latter this year has been heavy, prices ruling from £15 to £20 per acre for good orchards, and some in good positions even realise more money. As prices have been low for early soft kinds, owners have been trusting to late sorts to make up the deficiency, but the gale has put a stop to that, for in some large orchards the fruit blown down will reach to hundreds of bushels. I may mention that Wellingtons are an unusually heavy crop; our own trees are small compared with many in the neighbourhood, yet they average from 10 to 15 bushels per tree. I find the foliage that was not stripped off is very much bruised, and that it is withering up rather too rapidly for the good of the tree. The trees, however, except where old or decayed, did not suffer much, and I find that grafted trees, old or young, withstood the gale well. We always slightly tie them to keep them from swaying about too much, and when even old trees are grafted on the small wood they quickly get healed over and stronger at the junction than at other parts. It is large limbs that when grafted cannot heal over that are so liable to blow off, but in practice it is found so advantageous to graft on the tops rather than close to the body of the trees, that the process of heading trees down low, as was formerly the case, may be said to be quite obsolete hereabouts."

From Aswarby Park, Folkingham, Mr. Nisbet reports that the wind lifted up one of the portable pit lights and landed it on the top of a Oak tree 16 ft. in height, smashing it to pieces. I immediately, he says, had all portable lights nailed down, and placed two men to look after the houses and pits, and just in time, for away went the head from the roof of the young men's rooms and everything else the wind could lay hold of. From this time up to 4 o'clock p.m. the destruction of timber trees and other property was something alarming. Fine old Oaks that must have braved the storms for 200 years or more are very much disfigured through having so many of their grand old branches twisted and broken off. Old Elm and Ash trees, many of them 6 ft. to 8 ft. in circumference, are uprooted, torn, and broken off in every conceivable way; many of them are snapped off at from 6 ft. to 20 ft. from the ground. Fine healthy Oaks from thirty to forty years of age are broken off at 30 ft. from the ground, some of them even at 50 ft. from the ground—beautiful young trees, straight and clean in the stem as a fishing rod. The park and gardens at the present moment seem pictures of desolation. In the garden we have lost some fine old trees, and the whole place looks as if it had been left to itself for twenty years or more. About three o'clock the gale began to unroof the stables; happily at this time the wind veered round to the north-west, and, with the exception of a few yards, which were stripped, saved the roofs; windows were blown out as if they had never been there. At the Home Farm the stacks had to be tied down. At the village of Aunsby a thatched cottage was completely unroofed, and the new schools at Scredington were partly so. At Hemswell the church roof was carried away, and a large shed with a slated roof was lifted up entirely and set down at some distance without shifting a single slate. I have a letter from Burley-on-the-Hill, Oakham, in which the losses of fine old trees and destruction to property is stated to be very great.

Mr. W. J. Lobjoit, writing from Woodlands Farm, Putney, says, "During the severe gale on Friday we had one of our greenhouses, about 70 ft. long, lifted off the plates; fortunately it was a low built span-roofed house. A large light was blown off and sent crashing through the adjoining greenhouse. Several fine young



fruit trees were snapped off, and boughs of the larger trees were strewn over the ground. Two fine Elm trees were torn up by the root, lifting with them a large amount of soil, and an adjoining lane was completely blocked by large trees falling across it, one unfortunate carriage being hemmed in, a large tree falling just behind it and another in front. We hear of high walls being blown down and boat houses carried into the Thames, so I think, considering the fearful gale it was, we escaped pretty well."

From Cotelstone Mr. J. C. Clarke writes: The gale on the 14th uprooted many trees and seriously injured others. The green leaves of some trees are withered into tinder, and all tender growing plants have suffered more than if they had been exposed to 10° of frost. I hear that some of the beautiful Conifers planted by Mr. Perkins at Kingston have lost their leaders and many of their branches.

From Hardwicke House, Bury St. Edmunds, Mr. Fish writes: "The hackneyed comparison of a bull in a china shop was as nothing to the storm of the 14th in the gardens. It seemed to delight in wrecking every remnant of autumn beauty, and there was a great deal of this left, for though the Pelargoniums, Petunias, and many other flowers were washed out, yet Ageratums, Stocks, Marguerites, Dahlias (single and double), and a good many annuals and fine foliated plants yet flourished in great beauty. Even the tricolor and other variegated Pelargoniums seemed to improve in colour beneath the incessant rains and the kind of weather with which we have been favoured. Calceolarias, too, were showing a nice succession of flower, and the garden promised many sweet and pleasant gatherings, and much floral interest right into November. We have had Calceolarias here on November 10, and there is a delicacy and depth of touch and tone about autumnal or winter flowers which they seldom reach to at other times or seasons. Of this season it may be said all was joy before the gale, and now we have a wreck of withered blooms and bruised and broken plants. Anything that the gale left alone was destroyed by the sharp frost that followed it on Sunday night. It is pitiable to look on plants and rows of Dahlias so lately in full beauty now one blackened mass, whereas but for the gale and the frost they might have bloomed for weeks. Neither has the gale spared other plants or shrubs. Late flowering Tea and China Roses especially have suffered shipwreck of all their fair promise of blossom, and the plants themselves are much injured. The Thorns are very much stripped of their fruit, and Yews, and the common Barberries, and even Hollies have had their berries strewn along the ground. Acorns and Beech nuts have come down in showers, and all late ungathered fruit has been dashed down, battered, and destroyed. The leaves on the trees are exceptionally fresh and green, and thus they afforded exceptional purchase power to the wind, which wrecked more trunks and branches on that account. Oaks, no doubt largely in consequence of their verdure, freshness, and size of leaf, have suffered more from branch splitting than most other trees. Poplars have been thrown down in greater quantities than usual, no doubt largely owing to the same fact. Hundreds of aged Elms have also been prostrated, and many other trees, including many Thorns, no doubt helped over by their still unfallen leaves and their heavy crop of fruit. Evergreens seem to have passed through the storm better than deciduous trees. They seem more elastic, and their bulk, which increases the purchase power of the wind over them, also spreads it over a greater area, and thus probably moderates its force in any particular spot. Be that as it may, Cedars and

Conifers seem to have suffered less during this terrible gale than deciduous trees, though a few Cedars are wrecked, and many branches are wrenched off from these and other Conifers. Even many of the green cones are torn off *Pinus excelsa* and others, while the whole garden and pleasure grounds are thickly strewn with the debris of living and dead branches, and leaves of trees, plants, and flowers."

Mr. James Thomson, Shawdon, writes: In the Duke of Northumberland's park at Alnwick the number of fine trees levelled to the ground is very great. A row of lofty Beeches that formed a background to the flower garden has nearly all been blown down or broken; one of them fell over the end of the large conservatory, doing damage, it is said, to the extent of several hundred pounds. At Eslington Park, in the Vale of Whittingham, two-thirds of the fine trees are either blown down or denuded of their branches; a cow that had taken shelter below a large tree was killed by it falling upon her. In the extensive park of Chillingham (the home of the wild cattle) the destruction of many fine Firs in which the herons built their nests is complete. Around nearly every residence in this part of Northumberland there is nothing to be heard but the saw and the axe clearing fallen trees from the carriage drives or walks. Around Shawdon, trees that have stood at least the storms of a century and a half are laid flat upon the ground. In flower and kitchen gardens exposed to the full force of the cyclone, Apple trees and ornamental shrubs have in many cases been torn up. In many orchards the Apples were still upon the trees, and where this was the case they have all been blown off. In this district, fortunately, the gale came from the north, and in kitchen gardens with a high south wall this was a great protection. The late Pears upon our south wall were still upon the trees, and very few of them were blown off. We have had local storms that have done great damage to growing timber, but we have no record of such general destruction to trees and gardens as happened on this occasion. There is this consolation amidst the wreck, viz., that Nature in time effaces all traces of the ruin she creates. I can well remember the desolation caused by the great flood of 1829 in the north of Scotland, when many of the most romantic straths and glens were left almost treeless. To-day they are more beautiful than ever. It will, however, take a generation to rear up timber equal to many of the noble trees destroyed by this storm.

Mr. Dennis says, amongst the trees blown down about Dorking may be enumerated Oak, Elm, Beech, Fir, &c., some of which measured from 2 ft. to 3 ft. in diameter at the butt and perfectly sound. Newly planted trees suffered severely, thus showing the necessity for securely tying or staking them, a work so often neglected.

#### NOTES AND READINGS.

A GENTLEMAN much interested in tree planting has been extolling to us the merits of a new transplanting machine, which makes one desirous to hear and see more of it. Some things are claimed for it that we should like to be assured of. The machine is described as neither more nor less than a gigantic pitchfork, the prongs of which are thrust under the roots of the tree, which is then simply levered out of the ground by main force, the tap and other strong roots being severed at one wrench—rather a summary method, it must be admitted, and open to some objections, we fear. I see a writer elsewhere corroborates much that my informant asserted, stating that a tree 10 ft. to 12 ft. high can be raised out of the

ground in two minutes, with the maximum proportion of roots and a ball of soil as clean and entire as if it had been cast in a mould. The gentleman referred to had seen only one fork in operation, which he says "lifts moderate-sized bushes out of the ground as easily as a man lifts a root of Potatoes or a Cabbage plant with a spade or a fork," and he is assured that two forks will lift nearly a ton, earth and tree, out of the ground, and quite easily. As it requires a one-horse power to snap a strong root, such a feat performed by a few men with two forks must be regarded as little short of wonderful. The idea is a practical one, however, and we hope to hear more of it, and that all that is claimed for the new invention is true.

The Rev. J. M. Taylor, writing in the *Agricultural Gazette* on the Champion Potato, says it is unfit for deep and rich soils, on which it is not productive, but that "in its suitability to poor and thin soils it may be almost characterised as a new food-producing plant." Its vitality is so great that it will produce abundantly in soils that would starve more delicate kinds. Its enormous root power, says Mr. Taylor, will enable it fully to establish itself on soils where Potatoes of other kinds would be dried up before a plant could be formed large enough to yield a useful return. A Potato that will produce best and most abundantly in a poor soil, and at the same time resist disease, must certainly be regarded as a boon by cultivators, and that Mr. Taylor's statements are applicable to the Champion, those who have had experience of it under different conditions of culture can testify. The crops of the Champion produced in poor and in sandy soils are this year said to be wonderfully fine; no disease is found amongst them; while, on the other hand, excessively luxuriant crops in strong soils are disappointing.

By the way, both fungologists and practical men are puzzled this season to account for the comparative absence of disease amongst Potatoes. The condition of things is said to be abnormal. Two months ago or more when the weather broke up it was predicted we might expect the disease to manifest itself as usual, yet after a long period of bad weather, which has worked more destruction to the grain harvest than anyone of the present generation remembers, we have a good sound Potato crop—in some cases, indeed, little or no disease whatever. Potatoes are a drug in the market, and farmers are already complaining that crops are too good to pay. In Scotland the season has been cold and unfavourable all through, and the autumn wet and cold; but Potatoes are good, and retailers are selling them at 5d. per peck. Planting time was dry and favourable for operations as a rule, and during the growing season the crops had a spell of seasonable weather which may have hardened the tissues of the plant; but, be this as it may, the present state of the crop is an enigma.

Upon the whole, it has not been a bad garden year; both fruit and vegetable crops have been good and plentiful, and even the farmer has not so much reason as usual to complain, except in regard to the Corn crops. It is an ominous circumstance in regard to the last that competent authorities suggest that the hitherto estimated "average" of English Corn crops should be lowered. The standard average production per acre hitherto regarded as just is no longer realised, and as this cannot be attributed to worse farming, it must be put down to unfavourable climatal influences. There have been periods of bad weather before, no doubt, and the expectation is that a better time will come again; but the ill



effects of the succession of bad seasons we have experienced appear to be unusually well marked upon vegetation. Woodmen have noticed these upon the trees of the forest in their growth and productiveness, and gardeners have noted them upon their fruit trees and shrubs, &c.; while observant agriculturists say that the herbage of the fields has in some instances deteriorated, the stronger and coarser Grasses usurping the place of the weaker and finer varieties to such an extent, as to in some degree affect the quality of the hay crops. Speaking on this topic, Mr. Westland states in the *Florist* that the Apple orchards in Worcestershire have in numerous instances been seriously crippled, and show unmistakable signs of permanent injury, and similar accounts have been furnished from various other parts of the country regarding different species of fruit trees and bushes. For the next few years to come careful pruning and the removal of dead and enfeebled branches will be a duty requiring discrimination and skill, and nourishing culture will be required by the roots as well. It would appear from an article, published lately in one of the monthly magazines, on the subject of cider, that the orchard culture of fruit trees in the southern counties is still in an exceedingly primitive condition. The farmer, it is stated, "devotes very little attention to his trees, save when the gathering season comes round, and general inattention and unskilful pruning cannot but make a serious difference in his financial returns." The only pruning the cider Apple grower bestows upon his trees consists, it seems, in the destruction done to the branches by beating the Apples down with poles. There is force, therefore, in Mr. Westland's remarks that if the Apple growers in the south wish to compete successfully with foreign growers it can only be by means of more skilful cultivation.

The long-shoot system of renovating exhausted Vines has now filtered through most of the papers, and gardeners are beginning to ask what it means. The reply might be furnished in the words of a noteworthy Grape grower who was appealed to on the subject. He said, "There is nothing in it; nothing at all." The long-shoot method may be very shortly summed up. Supposing we have an exhausted Vine with four shoots upon it to deal with, we are told to cut three of the shoots off and permit the fourth one to extend as much as the four put together. How this process is going to increase the vigour of the Vine in the aggregate is a puzzle for those to explain who advocate it, but to the ordinary comprehension it is not apparent. It is not a new discovery that by allowing one strong rod to grow upon a Vine we can get perhaps a few larger and looser bunches, but we do not get a greater quantity of fruit. If we have twenty Vines in a vineyard and allow all an equal amount of space, and occupy it fully, it is impossible to increase the same by any mere mode of training the shoots, and those who adopt the long-shoot system of renovation will find this out in the course of their experience. Of course it is an excellent plan to extend the leafage of the Vine in order to restore vigour, but the ordinary spur system of training presents every desired facility for accomplishing that end, provided excessive cropping is avoided at the same time. With regard to the particular case of renovation which Grape growers have been asked to reflect upon, what most cultivators are asking is how Vines starting under the best auspices and management, and still in their very boyhood, so to speak, became exhausted so soon, and came to require restorative measures of such an energetic kind. Such cases of exhaustion are far from uncommon under certain descriptions of

culture, and what would be most instructive to everyone to know would be not the means proposed to rejuvenate them, but the cause of their failure. Other questions suggest themselves also. If every third or fourth spur is allowed to extend "almost across the house," one is tempted to ask what becomes of the other Vines, as it is plain that two or three Vines will in this way fill the whole space. Are the extra Vines removed to make room for the long shoots, or are their interests sacrificed in the meantime? Evidently there is more behind on the same subject that needs to be told. Any grower can readily comprehend how (where space is no object) extraordinary vigour can be got up in Vines by means of extension, the merits of which have been advocated sufficiently in *THE GARDEN* for years back, but how is the long-shoot system of renovation to be put in practice in a Vineyard where the Vines are perhaps less than 3 ft. asunder, and do all equal justice? We are led to believe that the long shoots are led away horizontally "across" the house at right angles to the main rods. This being so, where is room to be found for a long cane from every third or fourth spur on each Vine in a house from 15 ft. or 20 ft. wide, and containing, may be, twenty or thirty Vines, or even half that number? A rod from every fourth spur means four or five rods from each Vine, and if they are taken away right "across the roof," the least number of Vines (ten) gives us forty rods and a lateral development of about 6 in. for each. This is the conclusion I have arrived at in trying to reduce this renovation scheme to intelligible and methodical practice, and I leave it to others to elucidate further.

PEREGRINE.

## THE INDOOR GARDEN.

### LILIES IN POTS.

I HAVE read with interest "R. D.'s" remarks (p. 381) about Lilies in pots, and hope they may induce many to take in hand these beautiful flowers and grow them in that way. At this time of year I always endeavour to persuade my friends to buy a few Lily bulbs for pot culture, but, although they see the success I have with mine, they never adopt my advice. I always, with one exception, repot in autumn when the stems die down, at which time experience shows that the bulbs are as much at rest as ever they are. A change of soil is given, the bulbs are placed in smaller pots, and care is taken to entirely cover the bulbs with clean dry sand; the pots are then plunged in Cocoa-nut fibre in a cold frame till growth appears in the spring; they are then shifted into their blooming pots, which are in size proportionate to the age and strength of the bulbs. Plenty of room is left for top-dressing and watering, and they are placed on a thick bed of coal-ashes, where only the morning sun reaches them. Here they remain, well attended to in the shape of top-dressings of cow manure, plentiful waterings with soot water, and deluges of clean rain-water overhead, till the first flowers show colour, which on account of their position is not till September. They are then removed to the greenhouse, dwarf, sturdy plants, free from insects. The exception to annual potting is a bulb of *speciosum roseum*, which I bought in the autumn of 1878. It bloomed well in 1879, and was then potted into a 10-in. pot, where it has remained ever since with an annual top-dressing. This autumn it bore forty-one magnificent flowers. I grow the three varieties of *speciosum* mentioned by "R. D." and they never fail to flower magnificently in September and October. I find them invaluable during these two months, as *Chrysanthemums* are not in, and the summer zonal *Pelargoniums* are getting exhausted. *Lilium longiflorum* I never can get to do well the second year. Last year bulbs bought the previous autumn and slightly forced flowered grandly; they were

turned out of doors in May, and most of them sent up strong stems and bloomed again in September. This year these same bulbs have all but failed to flower. Is it necessary to buy every autumn as in the case of *Hyacinths*?—F. L. BOURCHIER, *Great Crosby, Liverpool*.

### FORCING LILY OF THE VALLEY.

THE chaste and fragrant blossoms of this plant are welcomed by everyone, a fact which leads to its being forced much earlier than formerly, its time of flowering being thereby lengthened; indeed, it is possible to have a constant supply from about the middle of December, or at all events by Christmas, until the plant flowers naturally out of doors in spring. Lily of the Valley imported for forcing consists of two distinct kinds, viz., a large shallow flowered variety, principally from Germany, in the form of single crowns, and a smaller more contracted flowering sort, mostly from Holland, in masses or clumps. To have Lilies of the Valley in flower very early single eyes or crowns are to be preferred to clumps, for though these may be a few in each clump well ripened, yet many will be immature and accordingly refuse to start; whereas, later in the season they will flower beautifully and are then in many respects preferable to single crowns, not the least important item being the superiority of the foliage, thereby showing off the flowers to the best advantage. Pot those for flowering first as soon as received, probably about the early part of November, and if they start freely they will be in plenty of time to flower at Christmas. In potting put 20 crowns in a 6-in. pot, and as the roots do not start before flowering, it matters little what kind of soil they are put into provided it be moderately fine, so as to work among the roots. About  $\frac{1}{2}$  in. of the crown should be left visible above the soil, which should be made tolerably firm, and when this is done place them under the stage in a house in which the temperature is not less than 60°. After remaining there a few days plunge them in a bottom heat of from 80° to 90°, and cover up the crowns to exclude the light, and to keep them always moist. Moss is often used for covering, but is not so well adapted for that purpose as Cocoa-nut fibre, with which, after being plunged, they may be covered to the depth of 2 in. When this is done give all a thorough watering with a rosed watering-can to settle everything in its place; indeed, they must on no account be allowed to become dry from the time they are potted till they flower. One of the best places in which to force the Lily of the Valley is in close bottom-heated cases, such as are used for propagating stove plants. There they may be plunged, covered with fibre, and the lights put on, the latter being of great service in drawing up the spikes of flowers, which are apt early in the season to come short and stunted. Just before the buds open take off the lights, but do not disturb the pots until the blossoms are expanded, when they may be removed to cooler and dryer quarters.

It sometimes happens that the first batch absolutely refuses to start, and for that it is best to be prepared; as a rule, if a fortnight passes without any sign of pushing it may be taken for granted that they will not do so, therefore remove them, and fill their place with others. Do not throw away any thus treated, nor those that have done flowering, but place them in a frame secure from frost till spring, and then if it is desired to grow Lily of the Valley crowns equal to those imported proceed in this way: Choose a piece of ground of a loamy rather than a sandy character, trench it, and incorporate with it at the same time a moderate quantity of manure. The Lilies may then be turned out of their pots and planted in rows 1 ft. apart and 3 in. asunder in the row. During the summer they will be greatly benefited by a mulching of decayed leaves, and by being watered occasionally the first season. Thus treated, they will flower a little the following spring, and improve with each succeeding year, but where required for



forcing they must be allowed to remain at least three years before being taken up, by which time the ground will be full of plump sturdy crowns.

The Lily of the Valley delights in a cool, moist situation, but where required for early forcing it is better to grow it in a dryer spot, as it then gets more thoroughly ripened off. Thus treated, I have had crowns quite equal to the best of the imported ones, and for forcing purposes not one whit behind them.

Another method is to grow them entirely in pots, and in this way they make grand masses with but little attention. The best time to pot them is as soon as their flowering season is over. They should then be plunged out-of-doors, but although they may be assisted into flower with a little heat, yet they do not force readily very early in the season. T. H. P.

**The Garland flower** (*Hedychium*).—Any who wish to grow this beautiful flower need not despair of doing so because they cannot give it the warm treatment recommended by Mr. Moore. We have a small plant of it that was grown in a Vinery till about May, when it was placed in a Peach house, where the ventilators were open night and day all the summer. About the beginning of September it was moved to a greenhouse, where it bloomed fairly well. It should, however, be put in the least airy corner, and carefully shaded from the sun, as the blooms are delicate.—R. J., *Cuckfield*.

**Bougainvillea glabra**.—"C. L." (p. 382) will succeed with this in a cool or slightly warm greenhouse. In proof of this a plant of it growing here in the greenhouse in a narrow border between the front wall and the pathway was subjected, during the severe weather of last January, to a temperature of 40° and on several occasions to 36°, yet it has been all that could be desired as regards health and profuse bloom. It covers a roof area of 180 square feet, and is now well furnished with flowers on shoots, several feet in length, this being the second time of blooming this year. The first was in June and throughout July. If the young wood is well ripened and water reasonably withheld from the roots through December and January, this plant will resist with impunity a low temperature.—G. T. DAWSON.

**Chrysanthemums in pots**.—Any specimens intended for conservatory decoration should be housed at once, if not already done. The recent moist weather has done much towards clothing the plants with good foliage, provided, of course, that they have had due attention. The Chrysanthemum soon shows by the decay of the foliage if it has had to suffer from neglect. The best place in which to flower plants in pots is an open and airy greenhouse. Heat is not absolutely necessary, unless the plants have become retarded and it is desirable to push them on into flower. What is simply required is protection from frost, and by shutting up the house early on an afternoon when frost impends, there will be sufficient warmth to carry the plants safely through the night. As the buds swell and show signs of expanding, some liquid manure should be given twice a week, but discontinued when they open. A genial warmth is of great assistance in prolonging the Chrysanthemum bloom, and if it cannot be secured by solar means, a little artificial heat should be used, especially if the collection contains some of the late flowering Japanese varieties.—R. D.

**Coleus Crimson Velvet**.—There appears to be no limit to the production of new varieties of the Coleus, and the one that heads this paragraph is a new type of a very distinct character. It was raised by Mr. Edwin Cooling, at the Mile Ash Nurseries, Derby, and will be distributed in May next. The colour of the leaves is bright crimson, shaded with a rich deep velvety crimson, which imparts to the foliage a singularly soft and elegant appearance. The habit is very free and compact. It has been grown by the side of all the best new types, and has shown in a remarkable degree its peculiar distinctness of character. For general decorative, and also for exhibition, purposes this variety promises to be particularly

serviceable. The Coleus has become a leading exhibition plant, and as collections are generally pretty well grown, it often happens that distinctness has a great deal to do with obtaining the highest award. Mr. Cooling's new variety promises to make a handsome pyramidal growth—the most approved form, to my mind, that specimen Coleuses for exhibition can take.—R. D.

**White Lapageria**.—I see an enquiry (p. 368) as to whether this has been tried out-of-doors and with what results. In the spring of 1878 Messrs. James Dickson and Sons, Newton Nurseries, Chester, planted out side by side against the wall of a stove facing the south-west a small plant each of the red and white kinds. The ensuing winter, viz., that of 1878 and 1879, was a severe one, and the red form succumbed; the white variety, however, in June, 1879, began to push a shoot from beneath the surface and promised well. The house, however, being destined for repairs, and the wall against which it was planted having to be partially removed, the plant received injuries from which it never recovered. Of course, such treatment was anything but a fair test of its hardiness; still, I have not the slightest doubt that it would succeed if good strong plants were put out early and given fair play. The plants of which I speak were only protected by a handful of hay during winter.—E. JENKINS.

**Brahea species**.—It is evident that "H. H. V." (p. 382) is acquainted with *B. filifera* from his speaking of this unnamed plant of his as being better than that species; yet had he not mentioned this I should not have hesitated to call his plant *B. filifera*, the long thread-like fibres, the bright green of the leaves, and its vigorous habit being exactly the character of this plant, and, so far as I am aware, do not belong to any other North American Palm. Is "H. H. V." certain that he has not got a healthy, vigorous plant of what is not unfrequently met with in a weak and sickly condition?—a condition which is the result of growing the plant in too high a temperature instead of treating it as "H. H. V." has treated his plant. Whatever this particular plant may be I shall be interested to hear more of it, and shall be much obliged to "H. H. V." if he would kindly send a seed or a leaf to the office of this paper, with a view to determine the name. The only species of Palms mentioned in Dr. Gray's "Flora of the United States" as being natives of that country are the Sabals—*S. Palmetto*, the Cabbage Palmetto; *S. Adansoni*, the dwarf Palmetto; and *S. serrulata*, the saw Palmetto, which are natives of the east coast from Florida to N. Carolina; and *Chamærops* *hystrix*, the blue Palmetto, also found in these regions. The species found on the other side of the northern continent are *Brahea filifera* (now renamed *Washingtonia filifera* by Wendland), a native of the northern part of Lower California, but to be found in a cultivated state as far north as San Francisco; *Erythea* (*Brahea*) *edulis* and *E. armata*, both of which are easily distinguished from the former by their lacking the long thread-like filaments, so conspicuous a character in that species, and by their shorter, more stunted appearance. *E. armata* is still more distinct by its possessing spiny leaf-petioles. Both these *Erytheas* are found in Lower California, *E. edulis* extending to Guadalupe Island. These are the only Palms admitted as indigenous members of the N. American flora, and it will be evident to "H. H. V." that his plant agrees with none of these except *B. filifera*.—B.

**Passiflora kermesina**.—I was pleased to see attention called (p. 487) to this exceedingly pretty climbing plant, which was introduced so long ago as 1831, but which is not, I think, so generally grown as it deserves to be. It requires a stove temperature, and when planted out in such a structure does not always grow so freely as some of the other *Passifloras*, more particularly if growing upon its own roots. It, however, succeeds admirably when grafted upon the hardy blue species (*P. coriulea*), and when planted in suitable soil and in a favourable situation, speedily covers the roof of even a large structure, and a more beautiful climbing plant could not be

desired. The individual blooms do not last long, but there is a perpetual succession of them, as each shoot produces a bloom at nearly every point. The plant is, therefore, always more or less in flower, unless it be during a short period in the depth of winter, when it is comparatively at rest. Then it is advisable to trim and regulate the growth, removing dead or superfluous wood, &c. It will succeed in any ordinary light rich soil. In grafting, the operation should be performed near the ground, so that when planted out the union may be close to or slightly under the surface of the soil, when the scion will in time emit roots into it as well as the stock. The stem of the latter will generally be found to increase in girth more rapidly than that of the scion; but, notwithstanding this, I have known a grafted plant to remain in an exceedingly healthy condition for more than twenty years.—P. GRIEVE.

**Single Balsams made double**.—When in India I sowed some acclimatised seed of a double Balsam of a fine scarlet colour. The seed was sown in the rainy season, and planted out in pots containing rich earth. Aided by the damp atmosphere and rich manure, each plant grew into a luxuriant bush, but all the flowers were quite single. Observing the luxuriance of the foliage, I surmised that all the vigour had been drawn into the branches and foliage, and so I tried the experiment of cutting off the branches and picking off the flowers and flower-buds in order to allow the plant to throw out new foliage and flowers. My object was to concentrate the vigour of the plants into the new flowers. I succeeded beyond my expectation. The subsequent flowers were as double as the most double *Camellia*; so much so, that I could not get out of the whole lot of plants a single seed, all the reproductive organs being transformed into petals; so it would appear that Balsams might be made to produce either single or double flowers, according to treatment.—E. B.

**Gesnera exoniensis**.—This *Gesnera* is largely and well grown in the Lucombe Nurseries, Exeter, where it was first raised. Its distinct foliage and dwarf compact habit make it a valuable plant for table decoration and for vases. When well grown, and the plants have plenty of room, the lower leaves droop over and nearly hide the pot in which it is growing. It may be successfully grown in a frame or pit up to the end of August, but after that time it requires some artificial heat on cold days and at night. Our stock of it is just now coming into flower, and with careful management will continue in good condition until the commencement of the new year.—J. C. C.

**Sowing Water Lily seed**.—How and when should I sow seed of the common Water Lily (*Nymphaea alba*)?—R. P.

[Sow at once in small pots on a hard surface of turfy loam; cover the seeds with a thin layer of fine soil; place the pots in water so that the soil is about 1 in. beneath the surface; keep the water from becoming frozen. If maintained at about 55°, germination would be thereby accelerated.—W. G.]

## NOTES AND QUERIES—INDOOR GARDEN.

**Seedling Pelargoniums**.—T. G. (*Rosebery*).—Your seedlings are good and well worth growing, particularly the salmon-red sort.

**The "Rest" Plant**.—Can anyone tell me the name of the plant known under this name in America? It is used there for funeral decorations.—J. C.

**Chrysanthemums**.—The display of these in Finsbury Park this season promises to be equal to that of last year. It will be opened to the public on and after Saturday, the 22nd inst.

**Phalenopsis Schilleriana**.—Some fungus is appearing on the roots of this plant. Would it be advisable to rebasket at once or wait till after the blooming is over, the spike being about 1 ft. long? What is the best wood for baskets?—J. R.

**Camellias**.—What are the six best and most useful varieties of *Camellia* for cutting purposes, adapted to plant out and clothe the rather shaded back wall of a lean-to greenhouse, the colours to be, say, two whites, one veined or striped, one pink or rose, and two of darker shades? Compact medium-sized blooms preferred.—A. M.



## NOTES OF THE WEEK.

**New white Chrysanthemum.**—The beautiful Chrysanthemum Lady Selborne, shown at S. Kensington last week, is really a valuable acquisition, notwithstanding the many varieties we already possess of this popular autumn flower. It is a sport from that fine early flowering kind James Salter, one of the true Japanese section with pinkish flowers. Lady Selborne exactly resembles it except that the blossoms are of the purest white, large, and of elegant form. Owing probably to some oversight, the floral committee awarded it no certificate. It originated with Mr. C. Salter at Streatham.

**Hardy bulbous plants.**—Mr. Archer-Hind sends us from South Devon flowers of *Nerine undulata*, which is quite hardy there; *Sternbergia lutea* and *Sternbergia angustifolia*, the latter a better formed flower than the former, and the narrow, short leaves do not conceal the flowers as in the case of the ordinary kind. With these also came a small flower of *Zephyranthes candida*, which makes a good contrast growing near the *Sternbergias*, as do likewise some of the *Crocuses*, among which the following are in flower, viz., *cancellatus*, *Schimperi*, *serotinus*, *speciosus*, *speciosus* (pale, late), *pulchellus*, *zonatus*, *byzantinus*, *tingitanus*, *odorus longiflorus*, *damascenus*, and *peloponnesiacus*. Associated with these were, moreover, *Cyclamen cilicium*, *C. græcum*, *C. europæum*, and *C. europæum album*. *C. cilicium* is uncommon and extremely pretty; the leaves are small, heart-shaped, and finely mottled with silvery blotches; the flowers are a delicate rosy pink.

**Nyssa aquatica.**—The gorgeous tints of the decaying foliage of this shrub rival even those of the *Liquidambar*. It is the brightest of all the shrubs and trees in the collection at Kew near the temperate house. It is a native of Japan, but appears to be rare in cultivation.

**Arctotis grandiflora.**—Among the rarer kinds of Composites suitable for greenhouse cultivation we know of none so beautiful or more deserving of being widely known than this which we saw in flower the other day in the conservatory at Kew. Those who know the handsome flowers of the twining *Mutisia decurrens* can form a good idea of the blossoms of this plant, for they are similar in size, colour, and form. The habit of growth is neat and bushy, and the deeply cut foliage, covered with a white downy substance, renders it distinct. The rich orange yellow colour of the large blossoms, with their gracefully reflexing florets, are extremely welcome in the greenhouse at this season, and it appears to be a very persistent bloomer. Probably Mr. Lynch could tell us something about its culture.

**Blue Morocco Daisy** (*Bellium rotundifolium cœrulescens*).—This pretty alpine plant is, we observe, still in flower on the rockery at Kew, and is particularly welcome at this dull season when but few plants are in blossom. Though this Daisy is called blue, it is not really so, at least in this country, but rather of a delicate purplish mauve. It is quite hardy.

**Two handsome Pitcairnia.**—There are at present at Kew two very attractive species of *Pitcairnia* in flower. One is the Maize-leaved kind (*P. zeifolia*), the flowers of which are white, subtended by bright red bracts that clothe the flower-stem; the other, *P. Decaisneana*, is of quite a different habit, the foliage being narrower and longer, and the numerous bright red flowers produced on long slender stems in a loose and elegant manner. Both are worth cultivating, as they flower in autumn and remain a long time in perfection.

**Aloe Greeni.**—This handsome Aloe is now in flower in the succulent house at Kew. It belongs to that section remarkable for their pretty variegated foliage and large teeth, of which *A. tricolor* and *A. saponaria* are better known examples. The flowers, too, of these plants are worthy of admiration; in fact, some of them are well worth cultivating for the sake of their flowers alone. *A. Greeni* has an erect panicle of pinkish red and green flowers. It was figured in the Bot. Mag.

last year, and named in honour of Mr. Green, Sir G. Macleay's gardener. In the same house is a remarkable specimen of Aloe, which seems to have been recently introduced from the Cape. It is unnamed, and to a casual observer would appear to be a form of *Agave americana* variegata, to which it bears a close resemblance, the large, spiny, fleshy leaves being striped in a most beautiful manner with green and cream colour. It is certainly one of the most ornamental of the genus.—B.

**Autumn flowering Crocuses.**—One of the most charming features in several gardens at the present time are the autumn-flowering species of *Crocus*, which number about a third of



Crocus nudiflorus.

all kinds in cultivation. Some of these are extremely beautiful, all having brightly coloured blossoms, and some exquisitely marked and pencilled. In such a collection as that at Kew are the following that either are now in flower or recently have been so, viz.: *C. nudiflorus*, one of the commonest, purple; *C. medius*, a lovely species with large deep violet blooms; *C. speciosus*, with beautifully pencilled flowers of a bright bluish purple; *C. pulchellus*, small, but very pretty; and *C. byzantinus* or *iridiflorus*, remarkable for the unequal size of the outer and inner rows of petals. *C. longiflorus* and its varieties are distinct in colour, and also in the perfume of the blossoms; *C. serotinus* differs from most of the others in the foliage appearing along with the flowers. The well known *C. sativus*, though common, is indeed as pretty as any, and deserves to be grown in large masses, so as to obtain the full effect of its

rich purple tint. Of the rarer kinds, *Schimperi*, *Clusi*, *Boryi*, *hadriaticus*, *Pallasi*, *ochroleucus*, *Orphanidis*, and *vallicola* have been very beautiful, each possessing peculiar charms that render them so indispensable in a collection. These autumn Crocuses are certainly too much neglected in gardens, for they bloom at a season when there is not much else out of doors to engage attention.

**Fuchsia procumbens.**—This looks best when covered with its violet coloured fruits, which are about the size of Hazel nuts. In the greenhouse (No. 4) at Kew there are some plants of it suspended in pots covered with berries, and they are singularly attractive. It is of easy culture, and requires little skill to obtain a crop of fruit.

**Hibiscus schizopetalus.**—There can be no doubt that this is a most useful plant, for during our visits to Kew this summer all have invariably seen it in flower in the stove. Its curiously cut flowers hung on slender stalks are very pretty and their bright colour enhances their attractiveness. It seems to be a strong grower, and almost a perpetual flowerer.

**Boussingaultia.**—The roof of the Palm house at Kew is now adorned in some parts with the graceful shoots of *Boussingaultia baselloides* and its pretty spikes of pure white feathery-looking blossoms. Every year this plant produces a good crop of bloom about this season. It is easily grown, but requires a house large enough to develop itself properly. Though hardy enough to withstand the full rigour of our climate it is only when grown in stove heat that it displays its full beauty.

**Crassula septas.**—This pretty little white flowered plant is now in blossom in a cool greenhouse at Kew. Its flowers are produced in umbel-like clusters of four or five on stalks a few inches high, and are remarkable for having each seven petals instead of the normal number of five. It is cultivated in a cool greenhouse.

**White Eranthemum** (*E. albiflorum*).—This is a handsome stove plant well worthy of general cultivation, being so distinct not only from other *Eranthemums*, but also from most other stove plants. It is now in flower in one of the stoves at Kew, its large branching clusters of pure white flowers contrasting strikingly with the ample deep green foliage. It is a native of Bahia.

**Begonia socotrana.**—This new and beautiful species is again in flower at Kew, and is far finer than last season. It seems to be remarkably floriferous, and bears its flowers, which are in clusters, well above the foliage. They are clear soft rosy pink, a colour which blends admirably with the rich green of its singular shield-shaped leaves.

**Tinnæa æthiopica.**—A shrub with deep crimson-red blossoms emitting a perfume like that of Violets ought to be popular, but such is not the case with this plant, though it answers the description just given. It, oddly enough for a shrub, belongs to the Sage family, and comes from Tropical Africa. It possesses a neat bushy growth and flowers continuously for several months together. It may now be seen in flower in the Victoria regia house at Kew.

**Coburgia incarnata.**—This is one of those beautiful plants belonging to the *Amaryllis* family that one seldom meets with except in botanical collections, though it possesses interest and beauty enough for everybody. The blossoms are tubular, about 4 in. long, of an uncommon flesh-like colour, with the exception of the sepals, which have each a sea green stripe running through its centre. They are produced in umbels of about half-a-dozen on stout erect stems some 2 ft. high. In flower at Kew.

**Gloxinia maculata.**—This is one of those beautiful old stove plants that one seldom hears of or sees except in botanical gardens or collections out of the ordinary stamp. It is really a grand plant, and deserves to be grown by everyone who has a stove. It is quite unlike the ordinary kinds of *Gloxinia* as regards habit, as it



grows 2 ft. and even 3 ft. high, and has stout erect stems furnished half their length with large showy flowers and buds that expand in succession to the very tip of the stem. The flowers, which measure  $1\frac{1}{2}$  in. across, are similar in shape to those of the commoner Gloxinia, and of a soft lilac mauve tint, stained with deep purple at the base. The outside of the flower is thickly covered with soft downy hairs. The leaves are handsome, being from 6 in. to 9 in. across, heart shaped, deep green, and of a thick fleshy texture. This plant is grown well by Mr. Douglas at Loxford Hall, Ilford, from whom we have received some specimens of it finely flowered.

**Lapageria alba.**—The floriferousness of this lovely greenhouse plant when under skilful culture is well exemplified by a vigorous plant growing against the end of the spacious Rose house at Chiswick Gardens, one shoot of which has twenty-seven nearly expanded buds on a length of about 18 in. It was only planted a few months since, and has made extremely fine growths in the time. It is growing in free soil, consisting principally of good fibrous peat and silver sand, in a light position, and does not appear to be shaded in the least, yet it is in the most vigorous health.

**Salvias at Chiswick.**—A houseful of the various kinds of autumn flowering Salvias is now one of the principal features in the Horticultural Gardens at Chiswick. Among the best kinds are Branti, similar to splendens and with intense brilliant vermilion bracts and flowers; Hoveyi, with deep purple flowers and bracts; Pitcheri, with blossoms of a clear rich blue; farinacea, violet-purple with a mealy-like substance about the flowers; Bethelli, which is the finest and most distinct of all, the blossoms being long and of a rich rosy pink. They are produced in clusters terminating the shoots, and each is surmounted by a conical mass of bracts of the same colour as the flowers. The value of this beautiful Salvia for conservatory decoration can scarcely be overestimated, as the colour is so rich and beautiful, and moreover so distinct from the ordinary run of greenhouse flowers.

**Begonia Moonlight.**—The more we see of this beautiful variety the more are we convinced of its great value as a decorative plant, particularly in late autumn and winter. A quantity of it in one of the greenhouses at the Horticultural Gardens at Chiswick forms just now a most attractive sight, the plants being of good size, well grown, and profusely furnished with its white blossoms, some of which have a tendency to become double. Its neat habit and extreme floriferousness are its chief charms. Among other good Begonias now in flower at Chiswick is the old B. Martiana, the clear rosy flowers of which remind one of the new B. socotrana. It is an excellent species, and all its fine qualities are brought out well at Chiswick. Another named Rose et Noir is a pretty kind, very peculiar in flowers and foliage, floriferous, and neat habited.

**Capsicum Little Gem.**—This is among the most pleasing decorative plants that are now to be seen in the Royal Horticultural Society's garden at Chiswick. It is a dwarf and neat habited plant, having a flat spreading head furnished with small deep green leaves, and bears a profusion of small conical berries about the size of a Hazel Nut, and of a bright red colour. It is so distinct from any other kind that we know of that we are very favourably impressed with it. Some plants of it that Mr. Barron intermixed with a group at the last meeting showed well how effective it is as a decorative plant. It was, we believe, introduced by Mr. B. S. Williams, who is distributing it. It has been awarded a first-class certificate.

**Fruit at Chiswick.**—One of the most interesting displays of Apples and Pears that can be seen is in the Royal Horticultural Society's Garden at Chiswick. In the spacious fruit room there are examples of all the varieties of both fruits grown in the garden, comprising all the most important kinds in cultivation. Among Apples there are no fewer than 300 varieties, and the Pears are nearly equally numerous. These are all arranged

in parallel rows, each consisting of about a dozen fruits on convenient tables, and all are legibly and correctly named. Both the Apples and Pears naturally fall in sections according to certain well marked characters, and it is most interesting to observe the distinctive points relating to them. For instance, all of the Codlin types of Apple are arranged together, so that their differences may be readily seen; then again the culinary kinds of the larger class; the Russets, and so on throughout the whole collection. Such vast numbers of varieties afford quite a study in themselves, and it is a matter of regret that they are not more accessible than they are to the public; for instance, if they were exhibited at South Kensington for a few weeks, what a boon it would be to hosts of cultivators who wish to name their fruits by comparison with them, or ascertain which are the best varieties for cultivating! If such a step were taken it would be not the least important of the services which the society renders to the horticultural public, and would without doubt add to its usefulness.

**Mr. Linden's Nursery, Ghent.**—By a circular just received from Mr. Linden, we learn that he has made arrangements for transferring his horticultural establishment, together with the journal, *L'Illustration Horticole*, and the agency established at 5, Rue de la Paix, Paris, to the Continental Horticultural Company, Mr. Linden himself to be superintendent,

We learn from Mr. Peter Veitch that at Exeter there had been 5° of frost, and that the Dahlias are quite black, the single varieties being the last to succumb.

## ORCHIDS.

**Dendrobium canaliculatum Fitzalanii.**—Some of the most elegant Orchids are to be found amongst the species that produce small individual flowers, such as the above named Dendrobe, which has recently bloomed in Mr. Bull's nursery in the King's Road. It is a small growing species with erect spikes, bearing many flowers evenly arranged in the form of a cone, each flower facing downwards, like those of *Odontoglossum pulchellum*. The sepals and petals are narrow and twisted in the way of *Trichopilia tortilis*, yellow at the point, pure white at the base, the lip deep purple. The individual flowers when mounted will give the finishing touch to a choice bouquet, like that produced by the use of *Vanda cœrulescens* where similarly introduced. It is a native of Queensland, consequently it will not require to be grown very hot.—A. Z.

**Miltonia candida.**—This is a beautiful autumn flowering Brazilian Orchid, introduced some fifty years ago, though yet it appears to be somewhat scarce. Its flowers, which are 2 in. across, have brown sepals, speckled with spots of a darker hue. The lip is large, shell-like, pure white, except the flush of rosy purple that pencils its interior. It is now in full beauty in the gardens at Loxford Hall, Ilford.

**Brassia antherotes.**—Despite the elegant effect produced by the long tail-like extension of their petals and their agreeable perfume, the Brassias are not held in much estimation by the generality of Orchid growers, though to their other desirable properties may be added that of long endurance in the flowers and suitability for arranging with others when cut. The above named species is much the handsomest that I am acquainted with. It was flowering recently with Mr. Bull. The sepals and petals are olive-yellow, barred and spotted with dark brown. The flowers are more evenly arranged on the spikes than occurs with most other Brassias; the tails are even longer than in *B. caudata*.—A. Z.

**Odontoglossum hastilabium.**—The advantage attached to Orchids that produce flowers of a lasting character is not always kept in view, yet there cannot be any question that they are much preferable to such as are of a fugitive habit, whatever use they may be required for. Amongst the most enduring is the *Odontoglossum* above

named when well managed, so as to get the plant strong enough to enable its producing large spikes of bloom. There is a plant now in Mr. Bull's establishment that gives evidence of the unusual length of time which this species will keep on flowering when vigorous. From a large stout bulb there is a single long raceme that opened its first flowers in May, and at the middle of October it was so far from being over that the last bloom-buds on the extremity were yet so small that their number could not be determined.—A. Z.

**Oncidium Lanceanum.**—This still holds its own as regards beauty even among the numerous species in the genus of which it is a member. The flowers, which are large, some 2 in. across, have sepals copiously spotted with rich chocolate on a higher ground, and the lip, a rosy pink, becomes paler towards the edges, but deepens into a bright amethyst-purple on the crest. Mr. Douglas brings us specimens of it from Loxford Hall, Ilford, where he grows it finely, the plants producing yearly grand flower-spikes that scent the house in which they grow with delicious aromatic perfume.

**Cattleya aurea.**—Without doubt, this species is one of the most striking of all Cattleyas, surpassing even the magnificent C. Dowiana, which it somewhat resembles. The flowers measure 5 in. across the sepals, which are a clear lemon-yellow, beautifully waved and crimped on the margins. The lip is shallow, 2 in. across, and is also exquisitely crimped and crimped. Its colour is a golden yellow ground, pencilled and lined with rich velvety magenta, the broad fluted margin of intense crimson-magenta, being overlaid with a velvety lustre. This species differs conspicuously from C. Dowiana in the colour of the lip, which in C. Dowiana is wholly of one colour. This fine Orchid has just flowered in Messrs. Backhouse & Son's nursery at York, most of the spikes being two flowered. In the same nursery there are among other Orchids

**Lælia autumnalis atrorubens**, one of the finest of all Orchids. Here it may be seen in perfection, some having as many as ten flowers on a stem. The blossoms, too, are unusually large and of the deepest tint that we have anywhere seen.

**Maxillaria Lehmanni** is a beautiful kind in the way of *M. venusta*, but differing from it in having no dark spots in the centre of the flowers. It is a fine Orchid, and one that should be included in the choicest collections.

**Pilumnus fragrans (nobilis).**—Of this extremely chaste plant there are some superb examples, the blossoms being unusually large, and, as they always are, deliciously scented.

**Odontoglossum Londesboroughianum.**—This is one of the finest of all the autumn flowering species, and quite distinct from all others. In this nursery it is grown in large masses which when in blossom with their tall flower-stems, furnished with bright golden lipped blooms, present a fine display.

**Epidendrum dichromum.**—As seen here, this Orchid is remarkably pretty, as many as a dozen flowers, being sometimes produced on a spike. The flowers resemble those of *E. macrochilum*, but are of a more pleasing colour.—W. G.

**Single Dahlias.**—My experience respecting these does not tally with that of Mr. Douglas. With me the blooms last considerably more than one day, but I have observed that the petals of all single Dahlia flowers are most impatient of wind, and so the flowers of *D. Cervantesi* planted in an exposed position seldom survive the day. Those of *D. Paragon*, being more sheltered, are longer lived. *D. gracilis* with me is the most durable. *D. glabrata* and *D. Cervantesi* (the latter probably so owing to its special trials) are particularly fugitive. It may interest some of your readers to learn that *D. Paragon* is a Norfolk Dahlia, having been raised many years back at East Dereham by the late Mr. Moore in the easternmost of his two nurseries—the one now held by Mr. Barkway.—NORMAN.



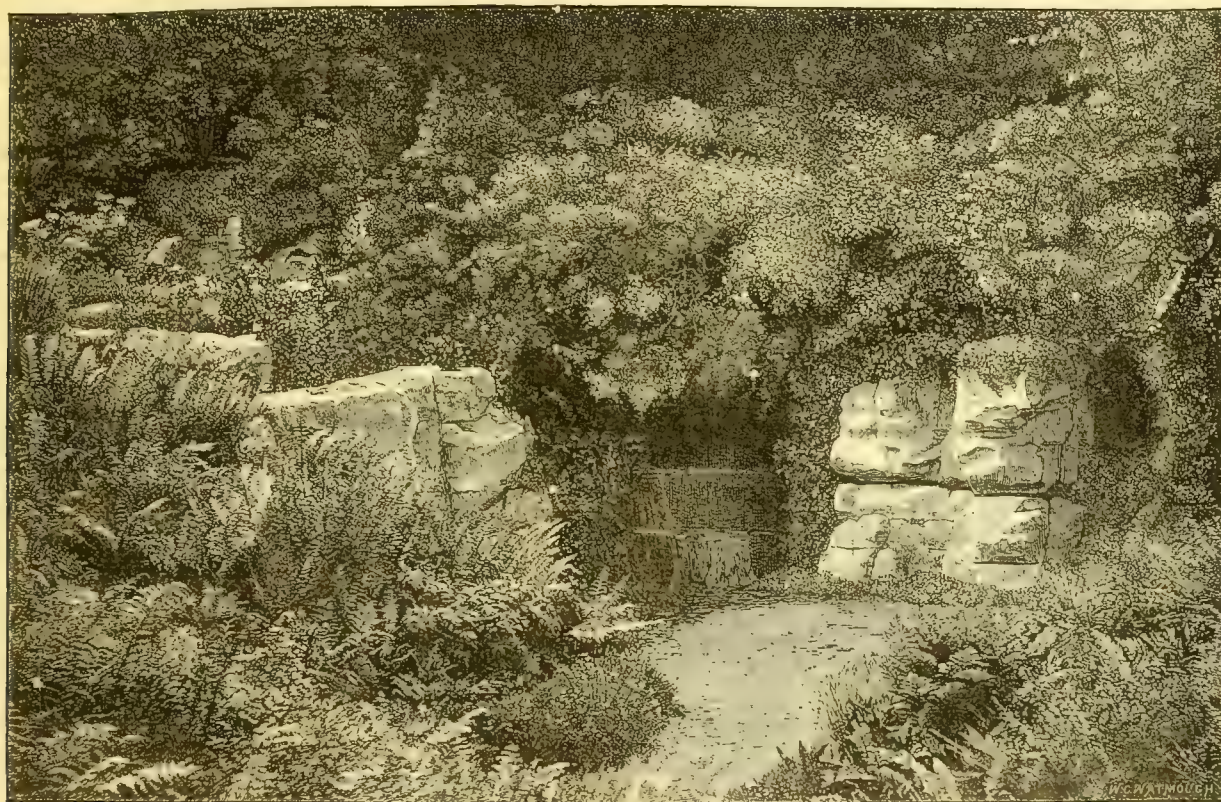
## COUNTRY SEATS AND GARDENS.

## DANESBURY PARK, WELWYN.

THIS is pleasantly situated on elevated ground in one of the most picturesque districts of Hertfordshire. Adjoining the thoroughly old-fashioned little town of Welwyn is the principal lodge entrance to the park, the roadway leading through it to the mansion, a broad and well kept one being planted on either side with thriving specimens of forest trees, notably Elm, Oak, and Beech. Some of the last named trees have clear smooth trunks, indicating that high state of health and vigour only attained by the Beech when growing in a soil exactly suited to its requirements like that found in many parts of Herts and the adjoining county of Bucks. This approach by an easy gradient brings us to the

being thus secured, interspersed here and there with trees and evergreen shrubs of suitable kinds for such a position. Noticeable amongst these were some large and picturesque old trees, which have, however, evidently suffered from the effects of violent storms, many of their larger limbs having been swept away. Very fine specimens of *Cupressus Lawsoniana* were conspicuous, as well as one of the variegated *Thujaopsis dolabrata*, the largest we have yet seen. It is over 14 ft. in height, and densely and well furnished with abundance of healthy branches, bidding fair to make a noble tree. Associated with these was a very fine Douglas Fir, some 80 ft. in height, and this, like the Cedars, looked weather-beaten, the winds sweeping evidently with great violence over the wide open tract of country with which Danesbury is surrounded. On the west front of the mansion are some beautiful

walks. Notably fine is the growth of this Ivy over a walk leading to a rustic summerhouse constructed with wattled Hazel and Beech, ornamented in a very tasteful manner with Fir cones. There, too, are some fine clumps of Bamboos, consisting of *B. vittata* and an unnamed broad-leaved kind that thrives admirably in the open air. In this somewhat sheltered spot there can be no doubt that much might be done in the way of giving variety to the scenery of our gardens by the more abundant use of these tropical looking hardy Bamboos, which only seem to require good soil for their roots to be planted in and a slightly sheltered position to thrive in the greatest perfection. A small flower garden fronting a fairly large conservatory completes the salient features of the grounds adjoining the mansion. In the conservatory are Camellias, Azaleas, and similar plants, the roof being



Rock Fernery at Danesbury.

most elevated portion of the park, a rather extensive plateau upon which the mansion is built; and in convenient proximity thereto are the extensive kitchen and forcing gardens. Too often are these relegated to some obscure and in every way unsuitable corner of the park, buried amongst trees, or otherwise hidden as if they were things to be kept in obscurity. The mansion itself is a large and commodious one; the windows on the ground floor open down to the level of the lawn, to which they afford an easy access, no terrace or terrace walk intervening on one side; but the south-west front is furnished with a wide Rose-covered verandah, the floor of which is paved with various coloured tiles, forming an agreeable promenade in wet weather; from this fine views of the surrounding scenery can be obtained. The lawn, which lies on three sides of the mansion, is kept entirely free from flower beds, a wide breadth of turf

specimens of Golden Yew, from 12 ft. to 14 ft. high and as much through, and also some remarkably good bushes of silver and golden variegated Hollies, the exposed position seeming to bring out the colours of the leaves in an unusually bright manner. From this side of the grounds a very extensive view is obtained, the distant village of Codicote being distinctly visible on a clear day. On the south-west side of the house are some excellent and effectively arranged beds of Rhododendrons, Azaleas, and similar subjects. *Andromeda latifolia* grows here with great luxuriance and blooms profusely, as does also *Pernettya grandiflora*. Honeysuckles, used largely at Danesbury, form large clumps, and in their season flower profusely. Ivies of the large tree varieties that produce abundance of highly ornamental berries are also used with good effect to cover dead stumps of trees, and to form graceful-looking arches overhanging some of the

covered with specially good specimens of *Tacsonia Van Volxemi* and *Habrothamnus elegans*, the latter valuable for winter flowering; a remarkably fine specimen of *Daphne elegans*, in luxuriant health, covers a portion of the back wall, and yearly furnishes a plentiful supply of its exquisitely scented and always welcome blossoms. One of the very best of all greenhouse plants, *Pleroma elegans*, is represented by a large healthy plant trained to another portion of the back wall, a position in which it appears to thrive admirably. The park outlying the better kept portions of the grounds just described is of considerable extent and well diversified in surface. It contains many good specimens of Elm, Oak, Beech, and some rather old Lime trees; the majority of the latter are, however, comparatively young.

THE FERNERY.—One of the chief features of interest in the park is the hardy Fernery, of



which the annexed is an illustration. It is formed on a sloping bank in a rather deep dell-like valley, overhung with trees and Ivy, in the shade of which the Ferns seem to delight. This charming spot has been further enhanced in appearance by some carefully and naturally executed artificial rockwork, in many respects decidedly the leading feature of Danesbury. As regards the planting, the various genera are arranged in distinct and well-defined groups, and each group is assigned a position and provided with soil adapted to its requirements; therefore, all have an equal chance of becoming well developed. "Ah," says some one, "but these Ferns are indigenous, and therefore do not require any cultural care; simply stick them in the ground, give them one heavy watering, and then let them take care of themselves." Yes; that is how many hardy plants are treated; but not at Danesbury. It should be remembered that the conditions under which such plants are placed are more or less artificial. Ferns in their natural state have, as a rule, both soil and locality exactly suited to their requirements; furthermore, the soil is yearly enriched by the decaying foliage of surrounding trees, which foliage, moreover, forms an invaluable protection to them in winter; therefore, in order to ensure the best results in hardy Fern culture as well as in that of other hardy plants when under cultivation, care must be bestowed on them, and that is what is being done at Danesbury. In arranging a Fernery, study thoroughly beforehand the habits and requirements of all the species, and allot each such a position as is most likely to produce the best results. At Danesbury the most sheltered, moist spot is given to such plants as the various varieties of the evergreen *Blechnum*, which delight in a close, damp atmosphere, and the tender forms of *Asplenium*. *Osmunda regalis*, which thrives amazingly, is allotted a somewhat low, swampy position, which is, however, free from stagnant moisture. The soil used for these Royal Ferns is a mixture of good loam and fibrous peat. The better deciduous kinds of *Polypodium*, such as *P. Phegopteris* and *P. Dryopteris*, are also afforded sheltered positions, and in quiet nooks may be found charming groups of such things as *Allosorus crispus*, the Parsley Fern, and *Cystopteris fragilis*, a most delicate and graceful fern. The noble *Lastrea Filix-mas* and its varieties occupy the bolder and more exposed positions in company with fine colonies of the evergreen kinds, comprising some unique varieties of the *Polystichum*, *Scolopendrium*, *Polypodium*, &c. A plentiful supply of water is available for use when requisite in the fernery at Danesbury, and by means of a hose attached to a hydrant abundant soakings of water can be given during long continued drought—a matter of much importance as regards the welfare of the plants, a contingency that should, where practicable, be always provided for, seeing that moisture is such an essential element as regards the well-being of all Ferns.

THE KITCHEN AND FORCING GARDENS (about 5 acres in extent) at Danesbury, as has been mentioned, are placed in convenient proximity to the mansion, from which they are approached by pleasant walks planted on either side with good specimens of the common and Colchic Laurels and other evergreen shrubs, a large extent of the open kitchen garden being surrounded in place of a wall by a dense, high, and very healthy Laurel hedge nearly 200 yds. in length, which, considering its exposed position, has braved the recent severe winters famously. The soil in the kitchen garden is good and thoroughly well cultivated, annually producing fine crops of all kinds of vegetables. The hardier kinds of Apples, Pears, and Plums thrive well, but the

Peaches and Apricots on open walls have sadly suffered in recent years from the inclemency of the weather. The glass erections consist of three good and well furnished vineries and the same number of Peach houses, in which are some really excellent trees that have produced fine crops for many years past. The *Violette Hâtive* Peach is a kind held in great esteem, and is probably still one of the best in cultivation. Figs have a house devoted to them, Brown Turkey and White Marseilles being the kinds grown. Cucumbers and Melons receive considerable attention, and are in much demand. Of the former, a sort raised at Danesbury many years ago, called Cox's Volunteer, is considered the best; it is a very free bearing sort, and thrives well in winter. The true old Egyptian Green Flesh is the only kind of Melon grown, and when found true, as it is here, still stands in the very front rank. A plant stove is well furnished with a good stock of things, mainly useful for cutting from. *Poinsettias* and *Euphorbia jacquiniæflora* are grown largely for winter decorations, the favourite plan being to plant them out in a border where practicable. Grown in this manner, both of the plants just named produce flowers remarkable for size and quantity. A remarkably healthy and good collection of *Nerines* most useful in their blooming season are grown here; they consist of such fine sorts as *N. corusca*, *N. venusta*, *N. Fothergillii* major, *N. Planti*, and *N. undulata*. These are all potted in rather heavy loam, and present a very satisfactory appearance. There are some useful heated pits devoted principally to the culture of Ferns, the common Maiden-hair (*A. cuneatum*) and some of its varieties and various kinds of *Pteris* being largely represented. Other unheated pits are devoted to the culture of young hardy Ferns and the protection of Strawberries and other hardy subjects useful for forcing purposes.

H. BAILEY.

## THE ROSE GARDEN.

### ROSE HEDGES.

I THINK it will be admitted that cultivators generally have not as yet used Hybrid Perpetual Roses in all the forms in which they may be grown. The idea of forming hedges of them has at all events not been generally carried out. I direct attention to the matter now, because this is the most suitable time to commence operations. The preparation of the soil should be the first step, and the work must be thoroughly done in order to ensure the best results. If the soil is naturally a good Rose soil, the work will be light. In that case mark out the position of the hedge 2 ft. wide, and trench up that space 2 ft. deep, and incorporate with the soil at various depths a liberal quantity of well rotted manure. Where there is any doubt about the staple being of the right sort, the whole of it should be removed, and its place supplied with a mixture consisting of three-parts loam and one of manure, but there are many gardens the soil of which, with the addition of one barrowful of loam to every yard length of hedge, and about half that quantity of manure, will grow Roses in a satisfactory manner. When practicable, the preparation of the ground should be done in dry weather, as there is some danger of the loam running together in heavy masses if moved about when it is wet.

Plants on their own roots are indispensable for this purpose, and if they can be had from 2 ft. to 3 ft. high so much the better, as they will form a hedge the sooner. Those that have had one season's growth in pots and another in the open ground are what we have used; these have been two years planted, and some of them have this year made shoots 2 ft. long. Thoroughly hardened and established plants in pots may, of course, be used in the absence of the others. The time of planting must depend on the condition of the

plants. With such as I have just described I should prefer to plant at once, but if only small plants in pots are to be had the planting should be deferred until April or May. In any case it should be done when the soil is moderately dry, and some finely-sifted mould should be prepared to place round the roots, about which the ground should be made moderately firm.

**Varieties.**—The selection of suitable varieties is very important, as some Hybrid Perpetuals do not make satisfactory growth on their own roots. The best light ones which I have tried are Anna Alexieff, Centifolia rosea, John Hopper, Jules Margottin, Berthe Baron, William Jesse, Madame Vidot, Exposition de Brie, Madame Boll, Madame Marie Finger, and Madame Rivers. The best dark varieties that I have tried are Sénateur Vaisse, Dr. Andry, Maréchal Vaillant, Charles Lefebvre, Madame C. Wood, Ferdinand de Lesseps, Marie Baumann, Dupuy Jamain, Annie Wood, and Reynolds Hole.

**Deep planting** must be avoided. The crown should be about 2 in. under the surface, as the soil will afford it some protection during severe weather. As soon as the planting is done some support should be given to the branches; a neat stake and a strong tie will prevent them from being blown about by the wind. When this is done place a layer of short, rotten manure over the roots; this should be 3 in. thick and 1 ft. wide on each side. It may be remarked here that Rose hedges are not recommended as a substitute for any other material, nor do I say that it is possible to have them in the form in which we have our Privet and Thorn hedges. I merely look upon them as floral ornaments, and as showing that it is possible to have something besides standards and dwarfs; and I am of opinion that in no other way can we get so many Roses in proportion to the space of ground occupied.

**Pruning.**—During the first two years very little pruning will be necessary. The second spring after planting any strong shoots that exceed 3 ft. in length should be cut back to that point. In the ground should be placed a few neat sticks, to which some of the lower branches should be tied to form the base of the hedge and bring it into shape. After the second year the growth will gain more vigour and increase in length. The strongest shoots should be cut down to 4 ft. the third year, and from that time the height should be allowed to increase slowly, so as to give the lower branches time to fill up the base. Some supports will be necessary to keep the growth in shape; probably iron stakes would be the neatest.

**The after-management** consists in giving the roots a good dressing of rotten manure every winter. I find the best plan is to rake away the soil from over the roots, lay the manure on them, and then replace the soil. It seems hardly necessary to say that the plants will be greatly benefited by copious supplies of water, especially during the first two years after planting.

J. C. CLARKE.

**Budded Roses best.**—Mr. James Comley stated at a horticultural meeting at Boston that all the best Rose growers in England (whose grounds he had visited) agreed that they got as good a plant from a graft in one year as they could on its own roots in two, and he thought that grafted plants of Hybrid Perpetuals would produce twice as large Roses as those on their own roots. He wants only one shoot the first year. In speaking of the great improvement in late years, he said he could select fifty new Roses which he would not give for a thousand of those in the catalogues thirty or forty years ago. Very few old Hybrid Perpetuals ever equal the new, and among these few he named Gen. Jacqueminot, Duc d'Aumale, and John Hopper. For the best twelve Hybrid Perpetuals, he named Abel Carrière, Alfred Colomb, Baroness Rothschild, Boule de Neige, Duke of Edinburgh, Duc d'Aumale, Horace Vernet, Jean Liabaud, John Hopper, Monseigneur Fournier, Paul Neron, and Rev. J. B. M. Camm. At the same meeting, Mr. C. M. Hovey did not agree with Mr. Comley on the superior advantages of budded or grafted Roses, and said he had shown flowers of La Reine 6 in. in diameter from plants on their own roots, and he thought some old sorts equal to new ones.—*Country Gentleman*.



## ROSES TOO MUCH PRUNED.

It has often occurred to me that Roses, and many other things for that matter, are too severely pruned—pruned, in fact, simply because it was the custom of our forefathers to do so. There should always be a sufficient reason for pruning a tree of any kind. No doubt, in some cases at least, Roses are pruned with the view of inducing them to furnish one or two, as the case may be, blossoms suitable to appear on the exhibition table. Now it becomes an open question whether this is really the end and aim of Rose growing from a general point of view, or whether general garden embellishment is not a much higher and far more desirable object altogether than that of producing twelve or twenty-four Rose blooms once or so per annum, which one takes to a show and at the end of the day sells for half-a-crown, or gives away to friends, as the case may be, and have done with Roses for twelve months to come. I saw this summer a specimen of that universal favourite, Gen. Jacqueminot, fully 5 ft. high and nearly as much through, with a few more than fifty flowers upon it at the same time. This is never pruned further than when a shoot shows a tendency to grow away from home the point is cut off. This plant is on its own roots, is, as a matter of course, planted in good soil, and receives occasional liberal mulchings, and a bucket or two of liquid manure to help it along. Its fortunate owner says he will never prune another Rose, but will let a few more alone with the view to bearing the one first named company. A year or two ago I had a line of 100 or so of plants of Madame Lacharme left unsold. They were freely grown, and furnished with several shoots each. I always make a point of leaving some Roses unpruned to produce early flowers, and I left this row unpruned. The result was, that as soon as the young shoots had made some progress, the weight of the flowers bore the stems to the ground, and we had Madame Lacharme in large numbers and of finer quality than I ever saw them before or since; in fact, the row was literally a bed of white Roses 4 ft. wide by 30 yds. or 40 yds. long. This Rose under the ordinary course of cultivation does not produce blooms freely or of fine quality, but by this method they were good and in abundance. It appeared, in fact, as though the more work the plants had to do, the better they did it; and my idea is that large, very large numbers of Roses die annually from inanition; their working area is so much reduced by hard pruning, the reciprocity of root and branch is disturbed, and collapse ensues. No; what is wanted in gardens are healthier and more freely grown Roses; not little beds of carved images of former plants, but natural, let alone, rampant bushes, producing beautiful flowers in quantity. If their heavy flower-laden shoots lop over and flounder upon the green turf, never mind; be sure that the stamina of the plant is equal to it all, and that the more real vigour, the more free healthy growth you get this season, the better the foundation for a bigger display in the season to come; and if you would have Roses in abundance to enjoy and to give away, avoid too much pruning.

Newry.

T. SMITH.

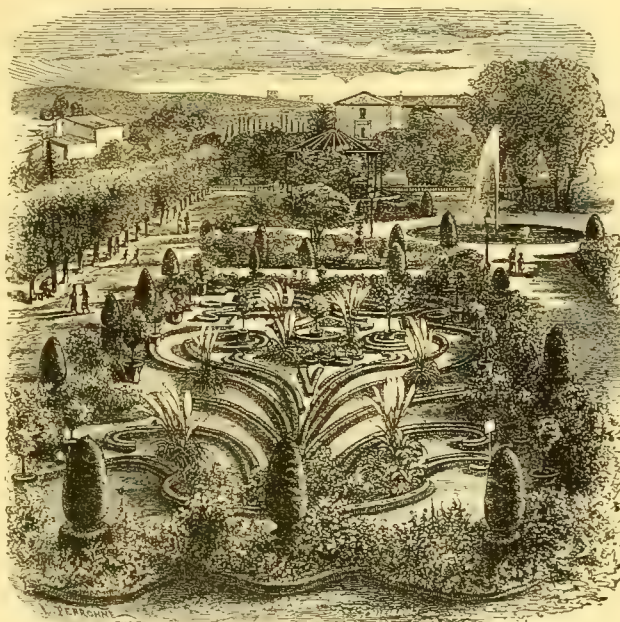
**Autumn Rose shows**, as suggested lately, is a good idea. Numbers of the best patrons of horticulture and lovers of the Rose are away from their country seats in the season of Roses, and lament the imperative necessities of "fashion" that compel them to be absent at such a time. We shall always have the summer Roses with us,

but the autumn flowering ones are comparatively few. From these, however, a race of autumn bloomers might probably be originated. Late Roses are exceedingly valuable and our supply depends upon the open border plants and the season—we cannot well force them. The persistency of growth and flower in most of the real autumn flowering varieties is remarkable; in spite of occasional intervals of severe weather, the buds of such kinds as La France, Gloire de Dijon, Malmaison, and others continue to expand till January in some seasons. We have gathered fine flowers of the latter after the new year on a border in front of a wall. Good service would be done by bringing to the front assortments of the later flowering kinds, and there cannot be any doubt that Rose growers would gladly extend their collections of such varieties.—J. S. W.

## GARDEN DESIGN.

## FORMALISM IN GARDENS.

HAPPILY for gardening, formality is fast becoming a thing of the past, at least so far as garden



Parterre of the 17th at. Century Castres, France.

design is concerned. The few examples of formalism now existing in this country are merely preserved as illustrations of the style that prevailed in bygone days, and owe their interest to their antiquity. In the seventeenth century, the fashion of laying out gardens in this country in the Dutch and Italian style was at its height, and was considered the perfection of garden design. The accompanying illustration, representing a French garden at Castres, is typical of the style that prevailed during that period. By comparing this with the modern style of laying out a garden, of which we gave an illustration last week, its peculiarity will be apparent. In a comparatively small space are crowded together sufficient materials to furnish a large garden properly laid out; here they are jumbled together in a most singular manner, the conical trees and mop-headed shrubs in pots having a monstrous aspect, and the box scroll work gives the whole a very artificial appearance. There are positions in gardens where geometrical parterres are quite in accordance with good taste, and in rare instances they might be indispensable, but as a rule the less there is of this style the greater pleasure our gardens will afford.

## TREES AND SHRUBS.

## HYBRID RHODODENDRONS.

I AM of opinion that the numerous groups of these do not receive the attention deserved as subjects for flowering in early spring, and especially is this statement true of the very fine and distinct types raised by Mr. Isaac Davies, nurseryman, Ormskirk. They do not appear to have found their way southwards to any appreciable extent, but in the north-midland districts, and especially about Manchester and Liverpool, they are much grown. They are of the most valuable character for early flowering and for decorative purposes in spring, and they can be managed with so much ease that they should find a place in every collection of plants.

The plants, whatever the variety raised at Ormskirk, are all of a close, bushy habit of growth, and remarkably free flowering. The kind of bloom simply depends on good management, and as the plants flower every year when well cared for, pruning is scarcely ever necessary, because the production of flower-buds appears to be the main business of the planter. Then, not only is there secured an abundance of flowers, but they are of large size, fine form, sweetly fragrant, and produced in large bold trusses.

The leading varieties are—Countess of Derby, the flowers of good substance, bell-shaped, and very large, often measuring 3 in. to 4 in. in diameter, purest white, and deliciously scented, a particularly free blooming form, the smallest rooted plants hiding themselves under the load of flowers they produce; Mrs. James Shawe, flowers cup-shaped, with crimped edges, pure white, slightly tinged with rosy purple, bushy growing, but rather more vigorous than the foregoing, and very free-flowering; Lady Skelmersdale, fine trumpet-shaped blossoms with smooth edges, pure white, very free and excellent habit; Countess of Sefton, large cup-shaped flowers with fringed edges, pure white, slightly stained with a band of pale rosy purple on the segments; the trusses are large, often equalling in size and fullness those of a hardy Rhododendron. This is the most robust growing of all the varieties, and is particularly attractive. Duchess of Sutherland, large cup-shaped flowers with fringed edges, pure white with slight stains of rosy purple, strong grower, and very free. Miss Davies, having bell-shaped flowers with even edges, pure white with faint lemon-yellow markings on the throat; altogether six varieties.

The management of these Rhododendrons is a simple matter, requiring attention more than skill. What is required is to keep the plants in a cold house during the summer in order to assist them in making their growth and forming their bloom buds, and report them at the end of the summer, not overdoing it, using a compost made up of peat, sand, some Cocoa-nut fibre, and a little fibrous loam. In such a compost plants will grow into fine healthy specimens, and by dint of careful pruning make good bushes, and continue to flower finely for years to come.

One great advantage about these Rhododendrons is their earliness. I have seen them in fine bloom about the middle of April, and as spring shows are now somewhat popular, they are very useful on the stage. In addition, Mr. Davies has raised a few other hardy Rhododendrons of a different type. One of these is *R. floribundum*, a hybrid from *R. virgatum* crossed with a hardy variety. It has a dwarf bushy habit of growth,



small Myrtle-like leaves, and is wonderfully free of bloom; the flowers pure white, slightly tinted with rose. It is as hardy as the *Laurustinus*. R. Pixy Queen is a bushy-growing, free-blooming form, bearing trusses of cup-shaped white flowers in great profusion. The flowers and leaves are about the size and form of those of an ordinary Indian Azalea. The original seedling plant was grown four years in the open ground, and it is considered to be hardier than the *Laurustinus*. It comes into flower early in April without forcing, but in a warm greenhouse might be had in bloom about Christmas. These two, like the larger flowered varieties, are well suited for cultivation in pots, and should be treated as before directed. R. Daviesi is a new type and a greenhouse variety, a hybrid from *R. retusum* crossed with *R. javanicum*. It has a free-growing bushy habit, and dark glossy foliage of medium size and a leathern texture. The flowers are borne in bold compact trusses, and of a lustrous orange-red colour. The trusses expand in succession, truss after truss, and so continuity of bloom is secured, lasting from two to three months. The first-class certificate of merit given to this new form during the past spring testifies to its value.

But it is to the fine hardy varieties that I wish to call the attention of gardeners generally. The fact is, these fine *Rhododendrons* are not really so well known south as they deserve to be. I know of no class of plants better suited for cool house pot culture in early spring than these hybrid *Rhododendrons*. Mind, they are for pot culture, not for cultivation in the open ground. I can imagine that in the warm and balmy parts of the south and west of England and Wales they would succeed well in the open ground, but only in such favoured localities. Let but a gardener who has not yet made acquaintance with these subjects commence to cultivate them, and I am sure he will thank me for calling attention to their excellent qualities. R. D.

**Wistaria sinensis** now enlivens up the walls with its variety of greenery; indeed, its variety of leaf colour in autumnal sunshine is almost as valuable as its clusters of purple in spring. I noted the same effect produced by it on the gardener's cottage at Hampton Court the other day near the old Vine.—F. W. B.

**Jasminum aureum variegatum.**—There is a specimen of this in Messrs. Lucombe and Pince's nursery at Exeter, which, although not large, is very effective. It is on a west wall, and strikes one with surprise, its golden variegation being bold and regular. For choice warm positions I think it deserves to be more frequently planted than it is, as it appears to grow vigorously, and is not particular as to soil.—J. C. CLARKE.

**Robinia viscosa.**—The season now nearly at its close has been remarkable for the extraordinary production of flowers and fruit in the case of plants that are usually shy in this respect, and on no trees has this been more marked than the *Robinias*, many of the kinds having borne almost more flowers than the branches were able to support. *R. viscosa* was particularly fine in the usual flowering month—June, and now again the trees are bearing numerous heads of flowers, which, although not of very rare occurrence in this species, is still another instance of the unusual favourableness of the past season for flowering trees and shrubs.—B.

**Hydrangea paniculata.**—The variety *grandiflora* has so rapidly advanced in public favour, that it is now met with almost everywhere, and the original species but rarely, yet the latter possesses some advantages over its large flowered variety—enough, at all events, to make it well worthy of a place in any collection of flowering shrubs however choice. In the first place its growth is stronger than that of *grandiflora*, the outline of the plant more pleasing, and the foliage of a deeper green. The proportion of sterile flowers, upon which a good deal of the display depends, is much less than in *grandiflora*, yet there are quite

enough to make it attractive, and it appears to flower later than *grandiflora*.—ALPHA.

**Autumn tints.**—The leaves of the Silver Maple are now conspicuous, their colour being vivid vermilion on a yellow ground. Our specimen, which is about 50 ft. high, stands in the pleasure grounds. The leaves of the Hickory, too, are remarkable for the large size and clear, distinct tone of yellow. I know of no other tree that is so striking in autumn as this. In summer, too, its leafage is handsome, and no hard weather seems to hurt it. It grows vigorously in a not very good soil.—J. C. CLARKE.

**Wellingtonia in fruit** (p. 361).—The fruiting of the *Wellingtonia* is by no means an uncommon occurrence, many producing cones when from 15 ft. to 20 ft. in height, and sometimes even when not more than 6 ft.; but in the latter case the fruiting is generally due to an unhealthy state of the plant. As far as I know, however, the *Wellingtonia* has never ripened perfect seed in this country, but it is often imported in large quantities. In the event of your correspondent wishing to test the vitality of his seeds, the cones should be gathered when they have become quite brown, dry, and hard, and either opened with a chisel, or placed in a warm, dry place, where they will open naturally and the seeds drop out. If the latter plan be followed, care must be taken that they are not kept too hot, or they will become dried up. When ready, sow them in a pan with a layer of broken crocks in the bottom, and filled to within  $\frac{1}{2}$  in. of the top with loamy soil, kept open if needful by a little sand. After sowing cover the seeds with the same soil, and place the pan in a cold frame free from mice, which are fond of all *Coniferous* seeds. If they germinate, when the bud in the centre of the seed-leaves is ready to start into growth, pot them off into small pots and in the same soil. In potting keep the seed-leaves about  $\frac{1}{2}$  in. above the surface. When established in their pots they may be planted out, when they will grow away freely.—ALPHA.

## NOTES AND QUERIES TREES & SHRUBS.

**Hydrangea paniculata grandiflora** will make a fine plant for autumn display in the shrubbery when it gets more plentiful.—S. Ross, *Higheclere*.

The Maples have a grand effect at present as landscape trees with their bright tinted foliage; they show finely by the side of dark green sombre trees.—S. Ross.

**Tilia mississippiensis.**—A fine ornamental tree with noble leaves, is quite hardy here, but it is not often met with in landscape planting.—S. Ross, *Higheclere*.

**Lycium barbarum.** I saw a plant of this Tea tree fruiting on a cottage near Blackrock yesterday, its wreaths of coral-scarlet berries making a fine display.—B.

**Rhus Osbecki.**—In the report of the Massachusetts Horticultural Society, Mr. Parsons reports favourably of the new Chinese Sumach. It is in all respects a fine thing for lawns.

**Euonymus europæus** is very attractive at present with its racemes of red fruit, and with a little attention to training it as a standard, it makes a very ornamental shrub at this season of the year.—S. Ross.

The Guelder Roses are very effective now with their scarlet leaves and berries, making fine shrubs for woodland drives. In early summer they are covered with their showy balls of white blossom.—S. Ross, *Higheclere*.

**Salix alba** is particularly fine as a landscape tree, and more so at this time when the foliage assumes a more silvery hue than it has hitherto had. The soft cloudy-like outline of its majestic top gives the landscape a very pleasing effect, particularly when seen reflected by water. Very few trees can equal it for the sides of lakes and streams, and the silvery grey foliage is charming associated with dark green trees.—S. Ross, *Higheclere*.

**The Eastern Plane.**—I hope nurserymen will direct their attention to growing the right sort of Eastern Plane, i.e., the Weston Park Plane. Rubbushy varieties are propagated instead of the true eastern trees. Nurserymen or any one else whom I have questioned have been unable to describe the true Eastern Plane; there are so many seedling sorts, that the matter has become pure supposition as to which is which. G. B.

## THE GARDEN FLORA.

### PLATE CCCVII.—LILIUM POMPONIUM.

MR. ELWES in his work on the Lilies expresses a doubt whether this long known species has till recently been cultivated in English gardens. The red form of *L. pyrenaicum*, which is a plant of more robust and coarser habit, has been long grown under the name of *pomponium*, and it is open to question whether the true *pomponium* had ever been introduced till Mr. G. Maw collected it in the valleys of the Maritime Alps in 1873, and flowered it in the following year in his garden at Benthall. It is a plant by no means uncommon within a limited area in the mountainous district north of Nice and Mentone, and ranges from an altitude of 1200 ft. up to 3500 ft. above the sea level. It flowers in cultivation in June. In habit and colour it somewhat resembles the Siberian *L. tenuifolium* and the Greek *L. chalcidonicum*, and in natural sequence it should be placed between these two species. It is from  $1\frac{1}{2}$  ft. to 2 ft. in height, the stem densely clothed with narrow linear leaves, finely ciliated on the margins; from two to eight or nine bright scarlet-orange flowers are produced on each plant. Although a more compact and neater plant than *Lilium pyrenaicum*, and more attractive from its brilliant flower colouring, its habit and constitution is less robust, and it does not multiply so readily.

It has been recorded from Grasse, Le Var, Granmondo, Castellane, Lantosca, Saorgio, Aiglun, Le Mas, St. Vallier, the Cotte del l'Ortigera, Valle della Miniera, &c., in the Maritime Alps, and also as occurring in the Sierra de Burgos, in the north of Spain, but the Spanish record probably refers to the red variety of *L. pyrenaicum*.

This handsome Lily is of simple culture, as easily managed, in fact, as the common Pyrenean Lily. It succeeds finely in the rich loamy soil of the Hale Farm Nurseries, Tottenham, whence the specimens came last spring from which our plate was drawn.

**Border Carnations.**—I have a seedling crimson self Carnation which, for continuous blooming, exceeds anything I have hitherto had any experience of. I have been cutting occasionally blooms off it since the 1st of August, and the cry is "still they come," and not only come, but fill and expand as two months earlier. Some varieties of the striped kinds were nowhere, being comparatively evanescent beside this. Another commendation that applies to this and two other selfs of robust character I noticed this year is the ease with which they can be propagated from pipings or cuttings, and, considering the limited time and rapidity of execution, I much prefer this system of adding to one's stock. A few of the secrets of success I take to be, taking the cuttings or pipings—either will do—early, while there is yet enough of vegetative power left, to root them before the chills of late autumn set in; dry them a bit before being put in to prevent rot. place sand—washed river will do as well as silver sand—at the base; put them in a damp, shady place in a rather deep box if convenient. I prefer the deep box, as I can then lift out the rooted plant, as I did a few days ago, with the trowel and a ball of rooted earth, and transfer it to a new bed without disturbing a root-fibre. Now, in this system of treatment this care is important at this time of the year, for it is too late to expect new roots for feeding purposes after this to be formed. Now, here is one of the most beautiful, fragrant, and showy of flowers blooming for months, propagated without heat, and should be in every border. I, for one (and with a fraction of the facilities others have), see no reason why beds and borders should not be gay from January to December with beautiful popular hardy plants.—W. J. M., *Clonmel*.











## THE FLOWER GARDEN.

HIMALAYAN COWSLIP.  
(*PRIMULA SIKKIMENSIS*.)

THIS is a robust growing species, deciduous or herbaceous in our climate, and quite distinct from all other known species. It starts into growth quite late in the spring, say in April or early in May, and should have a shady position when in bloom, as its delicate blossoms suffer from cutting winds and bright sunshine. Hitherto we have found it to succeed best in pots wintered in a cold frame, but it is quite hardy, and although it starts into growth very late in the spring as compared with other

Sikkim Primrose (*Primula sikkimensis*).

Himalayan species, yet its after growth is rapid, and its flower-spikes soon rush up from the Lettuce-like clusters of leaves, a height of from 15 in. to nearly 2 ft., i.e., the strongest examples. The flower-stems are slender, powdered with sulphur-coloured dust, and surmounted by clusters of from ten to thirty gracefully pendulous, sulphur-tinted, bell-shaped flowers. It is readily increased, either by seeds sown as soon as they are ripe in summer, or by careful division in autumn or spring. It is a charming and distinct companion for others of its Indian congeners, such as *P. rosea* and *P. cashmeriana*, and when more plentiful will become a great favourite for the supply of choice cut blossoms. The accompanying illustration has been made from specimens grown in the Botanical

Gardens of Trinity College, Dublin, and is of the average natural size. W. F. B.

## AUTUMN OUT-DOOR FLOWERS.

IN order to keep up a good display of out-door flowers as late in the season as the weather will permit, it is not enough to supplement the ordinary summer bedders with herbaceous plants, but it is also needful to take care that the selection of the latter includes such things as may be depended on to come into flower at the right time, that is when the waning sun and the cold nights, even if there be no absolute frost, have so far affected the

summer blooming subjects that they have ceased to be attractive. First amongst plants that will best serve this purpose comes the white flowered *Anemone vitifolia* (Honore Jobert). Any garden, large or small, that has not a good stock of this is deficient of one of the very best late-flowering plants in cultivation. Its near relative, *A. japonica*, must not be omitted, for it blooms again in the autumn in some situations almost as well as in the earlier part of the season. Several of the *Achilleas* also hold on late, amongst these being *Millefolium rosea*. The dwarf, early flowering *Chrysanthemums* begin to make our gardens look gay when most things are on the wane, and these with a good selection will keep on almost until the later flowering sorts come in. *Tropæolum tuberosum*, than which few climbing plants have a prettier appearance, will invariably continue blooming until cut down by frost. The beautiful *Schizostylis coccinea* is a plant which keeps on if it has the shelter of a wall after many other things are cut, producing its glowing spikes of bright flowers. *Sedum spectabile roseum* and spectable *purpureum* should not be forgotten, for they bloom well almost anywhere. Most of the *Pentstemons*, if fairly treated, will also go on to the end of October. In *Lobelia cardinalis* we have a subject that is not beaten for its gorgeous colour and free flowering habit in the whole range of cultivated plants, either hardy or tender. The few miserable bits of it generally met with in the comparatively few gardens where it exists at all give but a poor idea of what the plant is when grown in good large masses. *Gazania splendens*, with every hour of sunny weather, will continue opening its flowers until cut off by frost. The *Colchicums*, with their

bright coloured leafless flowers, make everything near them look cheerful when grown in quantities sufficient to be seen to advantage. The *Michaelmas Daisies* (*Asters*), in their different shades from white to mazarine blue, must not be neglected, for they defy the worst weather and stay blooming with us till the icy hand of autumn cuts them off. Amongst annuals, the French *Marigolds* ought not to be left out; they seem to enjoy the cool weather so long as they are not absolutely frozen, for the rains have no effect on them. The above are by no means all the plants which might be named that bloom when most things have left us, but whoever has got these in sufficient numbers to give them a fair chance of being seen to advantage, equally with the usually wrong

earlier blooming subjects, will not have a desolate and dreary waste, where there should be flowers as late as they can be had. The prevailing mistake in far the greater portion of gardens is having the whole surface devoted to flowering plants a sheet of bloom during the summer months, insufficient space being allowed for late autumn flowerers; the consequence, therefore, is that all I have named, and others of a like late habit of blooming, are rarely seen in quantities sufficient to duly assert their presence. Would it not be better to be content with a little less during the time when we have generally more than enough and devote a little more room to plants that bloom later in the year?

T. BAINES.

## USEFUL OUTDOOR FLOWERING PLANTS.

**Annual Lupines.**—Last year I had a collection of these, consisting of eight or ten varieties, from which I selected two, a dwarf and a tall form, for further use, and from these I saved plenty of seeds. This year they have been a great success, as they supply a colour (blue, changing to mauve, and frequently white or pale blue) that is not common to other plants. The weather does not seem to affect them much, as they were fine during the hot weather, and, if anything, they have rather improved since the rains came on, and they are still (October 8) very showy. They must have plenty of room or they will not last long. This year I sowed them in April in a hot-bed, potted them off in 3-in. pots, and planted them out in May. Sowing in heat is not absolutely necessary in all cases, but for my purpose it was, as I wanted them for a mixed bed, and they don't transplant well unless they have been grown in pots. The mixture just named consisted of a groundwork of pink *Pelargoniums* and the *Lupines* planted 4 ft. apart among them. This is a very pretty mixture for a large bed. The *Lupines* in good soil will grow 4 ft. high, and form dense bushes continually in flower. The dwarf variety is not more than 1 ft. high, has pretty foliage much divided, and small elegant spikes of bluish flowers. In both cases our own saved seeds grew very well. A pretty garden might be made of annuals alone, and one that would last much longer than *Pelargoniums*. In fact, with us *Pelargoniums* have been valueless since the rains set in.

**Single Dahlias.**—I like these exceedingly well, and I hope no one will think it worth their while to increase their number of petals; they are elegant both in the flower garden and also in a cut state, and they may be easily and cheaply raised from seed. Last spring I obtained a packet of seeds which were sown in heat in March; the seedlings were duly potted on, and planted out in May, and they came into flower as early as those raised in the usual way from cuttings or young offsets in spring. From my packet of seeds I obtained about sixty plants, and nearly all are distinct in shade of colour.

**Tuberous Begonias.**—Planted in good soil, these are very showy and useful; they are still beautiful, whereas the *Pelargoniums* have become dilapidated some time ago. They give no trouble in winter. We shall take ours up when the frost comes and pack the tubers close together on the border of an orchard house, and no further attention will be required till the time comes to plant them again in spring. They might be wintered in the beds if frost was kept out by means of a covering of litter. Seedlings make useful plants the first season if sown and helped on in a warm frame or pit.

**Chinese Pinks.**—These are very desirable either for massing or planting in patches on the mixed border. I like the single forms best, but the double flowers are pretty; both are useful in a cut state. I find it best not to sow too early; April is quite early enough if they can be grown on quickly, pricking them off as soon as they are large enough to handle, and sheltering them in a close frame.

**The dwarf and tall Scabious** are very useful for cutting, and they also make a pretty



bed, their habit being light and elegant. Treated as tender annuals, they come into flower early in the season, and continue in bloom till the frost comes. There is no occasion to winter a host of bedding plants, as the plants I have named, and many others, such as Phlox Drummondii, Stocks, Asters, Zinnias, not forgetting the double Poppies and Sunflowers for backgrounds, with a few fine foliated plants to give beauty and elegance of form, would answer the purpose. If the seeds are constantly cut off the Poppies, and they are not crowded too much, they will bloom again and again, although the later blossoms are not so large as the earlier ones. We have some double Poppies in bloom now that flowered early in July, and have flowered continuously since. Many of the annuals might have their blooming period lengthened by thin planting and removal of the seed-pods. Among hardy annuals the carmine Candytuft is a desirable variety to possess. Though many of the ordinary bedding plants have been disappointing this autumn in consequence of the almost continual wet weather, hardy herbaceous plants have never been brighter. Antirrhinums, Pentstemons, perennial Sunflowers, Rudbeckia, especially speciosa, Sedum spectabile, Japanese Anemones, red and white, in great patches, have brightened up the dark corners immensely. Tritomas, although showing some of their torch-like flower spikes, were too much injured by last winter to show to the best advantage but the Asters or Michaelmas Daisies are now fresh and bright amid the falling leaves and other wreckage of autumn; and last, but not least, there are the Colchicums and Sternbergia lutea.

E. HOBDAY.

#### FROM DUBLIN.

I wish you would take the consensus of opinion respecting the merits of the Cactus Dahlia. Our soil seems to be too good for it. Two flowers on a plant 5 ft. high is not much of a crop. Is a poorer soil desirable? D. Paragon and the other single kinds do better, and yet not so well as I lately saw them at Cambridge on a marly soil. Senecio pulcher is nearly over with us, being earlier this year than usual; even Stokesia cyanea promises to open its flowers in the open border before the end of this month. As the plant is near a wall, however, I shall rear a spare light up against it, so as to shelter its blossoms and hasten their expansion. Tigridias keep on opening a flower or two now and then. We never take them up here, and I fancy that they grow more strongly and flower more profusely thus treated, or, rather, thus let alone, than when disturbed. Some of our alpine Auriculas are flowering in a really appreciable way, and I have been surprised to see bushes of Jasminum nudiflorum covered with their golden stars thus early—all of which is doubtless owing to the genial summer sunshine of the present year. As an earnest of next year's flowers, I see Polyanthus and Rush-leaved Narcissus, Anemones of various sorts, including A. fulgens, and Grape Hyacinths are everywhere pushing up their young leaves.

F. W. B.

#### BEGONIAS IN OPEN BORDERS.

SEVERAL writers in THE GARDEN have recommended the planting out of Begonias, and early in the spring, as soon as my tubers began to push, I turned some out. The result has been by no means satisfactory; true, they made fine, strong growth, as I gave them a good place under a south wall, but no flowers made their appearance up to the middle of September. I therefore took them up, potted them, and now they are just beginning to bloom in the greenhouse, and will very likely keep in flower to the end of the year. One of these Begonias is the hardest I have yet had; it is a pale rose, and the same tuber has bloomed perfectly for the two preceding years in the greenhouse. Planting out, therefore, appears to me to be an experiment that will not succeed in all places. Some may be satisfied if they have a fine-foliated plant, but I am not one of those

who care for such plants, however interesting they may be. I always look for flowers in everything I grow, and for the present intend to keep my Begonias in the greenhouse, where I have had them in full bloom since July, and up to this time (October) they are as full of flower as they possibly can be. At present we have no half-hardy plant that promises so much flower as the Begonia, and I am inclined to the opinion that it will ultimately exceed the Fuchsia in hardiness and variety. I am sufficiently old to remember the first appearance of the latter in this country, and remember perfectly well how it was coddled, and how frightened people were when the leaves fell off in autumn, and it became to all appearance dead. It was a long time before anyone had the courage to plant it out-of-doors. So I hope it will prove with the Begonia, though I have mine indoors; it has already outstripped the Fuchsia in many respects, and is a formidable rival to it as regards popularity.

W. T.

Wimborne.

**Lactuca macrorrhiza.**—This most distinct plant is now a mass of pretty pale lilac-blue flowers on the rockwork. It is also in full flower depending from a shelf in the greenhouse, proving it to be a good plant for hanging basket work at this late season as well as for outdoors. It comes from the Himalayas, has a persistent fleshy fusiform root, and is all but hardy.—T. SMITH, *Newry*.

**Roses and Violets in Yorkshire.**—A big bunch of Marie Louise Violets and Tea Rose buds (particularly Anna Ollivier), with sweet scented Geranium, is so sweet and beautiful, that their culture for market purposes should be strongly urged, as both are outside and with no special protection whatever, and grow readily in this climate; so surely they would do better still further south, even if frost comes a little sooner with you.—E. H. W.

**Self-fertilising Begonias.**—From the fact of the different organs being borne in different flowers—male and female—it does not seem possible that self-fertilisation can ever take place. This I know that under glass a pot of good seed produced without artificial fertilisation is a great rarity; whereas out of doors, I suppose where there is more wind and more insects good seed is plentifully produced without artificial means being employed to secure it.—T. SMITH, *Newry*.

**Nerine Fothergilli major.**—This is the best flowering bulbous plant we have just now. It has a stem 2 ft. high, and a head consisting of fifteen vermilion flowers, forming a hemisphere from 4 in. to 5 in. in diameter. The petals of each flower curl back and gracefully overlap each other. The stamens and pistil of each flower form a leaf-like projection 2 in. long. On the whole it is one of the loveliest flowering bulbs I have seen. It has only one drawback, and that is, it sends up its flower-stem before the leaves. This in a conservatory would be hardly noticed.—E. B.

**Rain-proof flowers.**—Among the best and most useful of these are the different Ageratums and tuberous Begonias. This dripping autumn has severely tried both, and they have passed through the trial without tarnish or loss of colour. The Ageratum, indeed, seems all the fresher from the continuous rains, and the staying properties of the tuberous Begonias are something wonderful. They also go on blooming in succession throughout the season. They are also like many other flowers—so much more hardy in the autumn than in the spring, and are among the latest flowers of the season in the open air. Though Dahlias are also well nigh rain-proof, the double varieties seem to catch and retain the rain, and it remains so long on them as to tarnish their freshness and mar their beauty. But it passes off the surface of the single flowers, and leaves hardly a trace or track behind.—D. T. FISH.

**Calceolaria Burbidgei.**—This beautiful Calceolaria improves on longer acquaintance. The flower resembles that of the seed parent (fuchsia-

folia) in point of colour and shape, and the foliage that of the pollen parent (Pavoni), though without the perfoliate character. It is a bushy habited plant, which comes naturally into bloom from October onwards through the whole winter months. It will prove a most useful yellow-flowered subject for the dull season. A curious circumstance in connection with the plant is that the cross which Mr. Burbidge effected produced plants exactly alike, whereas the same cross effected by myself has produced every form of foliage, from a slight departure from the seed parent to that of the pollen parent almost pure and simple. These latter have not yet bloomed, so I cannot speak as to the flowers.—T. SMITH, *Newry*.

**Hypericums.**—In THE GARDEN (p. 367)

Hypericum oblongifolium and patulum are given as the best St. John's Worts. Ought not the latter to be uralum? Oblongifolium and uralum are readily obtained. I have both, and have also the plant sold as patulum, with flowers intermediate in size between the other two, but it is without one obvious characteristic of Thunberg's patulum. It is not ferrugineous on the under side of the leaf. My oblongifolium with large flowers is upright in growth, above 6 ft. high, and never dies down. Uralum is about 3 ft. in height with comparatively small flowers and spreading, drooping branches, and it dies to the ground like a Fuchsia in severe winters. Patulum, or rather what is sold as such, has also a drooping growth, but with larger flowers, less regular form, larger leaves, and is even more red in the branches than uralum, but no appearance of ferrugineous leaves. Oblongifolium and uralum are natives of Nepal; patulum, true, of Japan.—T. H. ARCHER-HIND, *South Devon*.

#### Swaddling the stems of out flowers.

—There is a practice rather common of tying Moss or cotton wool firmly round the base of the stem of a flower, which seems to us not only futile, but injurious. Our experience is that it does not preserve the flower, while the close swaddling process bruises the stems often in several different places. It is also a great waste of time when a great many cut flowers have to be sent away to carefully and firmly tie Moss round the base of each little stem. By far the best way is to simply cut the flowers and place each kind in a separate piece of paper, and by preventing evaporation in a card, metal, or other box, we do all that is really necessary. Do not, therefore, tie a bundle of anything at the base of each little stem, but use oiled paper, tin foil, thin gutta-percha, or any impervious material to prevent evaporation.

**Perennial Phloxes.**—This is an excellent time to lift and remake beds containing collections of these popular and easily managed plants. Possibly, with the same limited care, there are no other classes of flowers that give so much value or can be utilised for ornament or cutting purposes for so long a period. A white variety in the open border has been continuously throwing up spikes of pure white bloom since the end of July. I have two other white varieties, one dimly suffused with rose, but both much inferior to this. I need not say I have not had those continuous beautiful chaste blooms so long without some care. This I may briefly define as remaking and manuring the beds every year, dividing the large plants, and giving an occasional dose of liquid manure or guano water from the end of spring until the flowering has ceased. There is another point to which I have often referred, and that is if flowers are to be good late in the season, and hardy perennials especially, the seed pods must be picked off them. All Phloxes do not seed freely, but mine does, and I would have had no such spikes of bloom had I allowed the seed-pods to remain. Besides, in this particular instance, no amateur cares to preserve and sow Phlox seed and watch patiently from six to eight months before a young plant appears, and then but the same variety perhaps which you can have in flower in the same time by division merely.—W. J. M., *Clonmel*.



**The hardy Sedum** (p. 344) with bright crimson flowers is no doubt *Sedum Telephium*, the Orpine, or Livelong, which grows abundantly on old walls or rocks in various parts of the kingdom, and in sunny, exposed situations the pink flowers become a bright crimson.—R. M.R.

**Aster longifolius formosus**.—This is about the best of all the dwarf-growing Asters. I find that if the plants are pulled to pieces in the spring, the habit becomes much dwarfer than when they remain two years in the same spot. Those divided last spring are now not more than 1 ft. high, and densely packed masses of charming rose coloured flower-heads, whereas those undisturbed are fully 2 ft. high.—T. SMITH, *Newry*.

**Plumbago capensis out of doors**.—This hard-wooded greenhouse plant is bedded out at Gunnersbury with excellent effect. The plants are about two years old, and each some 3 ft. to 4 ft. in height. They form the centre of a large bed in a sequestered position, and flower with singular profusion, and not spasmodically, but persistently. In alliance with the lavender blue tint of the flowers are the rich deep scarlet spikes of the *Lobelia fulgens*, growing out of a base of silvery foliage, and surrounded with rings of *Begonia ascotensis*, tall and full of bloom, and *castanæfolia*, dwarf and compact, and producing pale red blossoms. Some of the rich marbled foliage of the golden *Abutilons* tell well here; indeed, the entire bed is an informal mass of richly coloured plants, all of which seem to be impervious to rain. If gardeners would more largely utilise plants of these varied forms it would do much to relieve bedding from the complaints made against it, viz., sameness and fleeting beauty.—A. D.

## NOTES AND QUERIES—FLOWER GARDEN.

**Zinnia Haageana** is the brightest and best of our October blooming annuals. *Calendula officinalis* var. *Meteor* has kept up a running fire of flowers all summer.—F. W. B.

**Anchusa angustifolia**.—This still continues to produce its pretty blue Forget-me-not-like blossoms, and where flowers are scarce is just now a very welcome plant indeed.—T. S.

**Packing Carnations** (p. 331).—Mr. Charles Turner informs us that he has sent both Carnations and Picotees very successfully to America wrapped up tightly in dry Moss and then in thin oil-cloth.

**Campanula Hosti**, sown as soon as ripe last autumn is now fully in bloom. Plants so raised seem to be a little more vigorous than divided plants. The flower-stems are a little taller, and, what is of much more importance, the flowering season is fully six weeks later.—T. SMITH, *Newry*.

**Gentiana crinita** continues to open its beautiful fringed flowers, and is quite a gem at this or any other season. It is not only distinct in port amongst the group, but comes into flower the second year from seed.—T. SMITH, *Newry*.

**Linaria alpina**, sown in spring, is now a dense mass of vigorous shoots and beautiful lilac orange-throated blossoms. This seems to be one of those subjects that are not at home on the level ground. It prefers a sharp slope towards the sun.—T. S.

**Pansies and the weather**.—Nearly all outside flowers have a starved appearance just now, but Pansies bear up bravely and go on producing bright and sweet blossoms. The distinct and novel colours constantly occurring amongst them renders them all the more welcome at any time.—T. S.

**Sternbergia sicula**.—Some four years ago Mr. Max Leichtlin kindly sent me a bulb of this *Sternbergia*. It is now in bloom for the first time, and is very pretty. It is just like a miniature *S. lutea*. The leaves, which are very narrow and short, lie flat on the ground.—H. HARPUR CREWE, *Drayton Beauchamp Rectory, Tring*.

**Vittadenia australis** (or *triloba*) is a pretty Daisy-like flowering plant, and will stand a moderate winter without being injured; it is easily increased by cuttings, and is useful for pots or hanging baskets, and pretty when mixed in beds with *Blue Lobelia* or similar plants. It continues to flower throughout the summer and autumn months.—A. ROSS, *Higheleere*.

## MARKET GARDEN NOTES.

FOR two or three years growers have lost money. Some crops were bad, some good, but for the good ones perhaps the market was poor, and altogether men who had not a good backing in the bank were rather going backwards, but this year they have been enabled to hold their own and have good reason to feel content. And yet the season opened badly, for the January frosts made such a sweep of all kinds of winter greens that gardens and fields never looked more bare or indeed more miserable than they did during the month of March. The next important crops were those of Peas and early Potatoes, and these, owing to the long drought, were very moderate; indeed, Peas in many places did not give more than one-third of a good average yield. Of course, in consequence prices were higher, but still not enough to compensate for the shortness of the crops. Early Potatoes were a very moderate crop generally, and were heavy only on very rich holding soils; indeed, it was not till the rains came in August and gave the Runner and Dwarf Beans, the Marrows, the autumn Cauliflowers, Onions, Cabbages, and all the host of winter greens, a powerful impetus, that the crops bore a prosperous look, and growers began to find something bulky to take to market. Since then, except that the excessive rain and cold nights have acted disastrously upon the Potatoes, all have gone fairly well, and never at any season wherein I have been familiar with Middlesex market gardens have I seen them looking more prosperous or more fully cropped than now.

**Fruits**.—Excepting a few Wellingtons and other late Apples, there is little fruit to be seen out on the orchard trees now; indeed, growers are rather rejoicing that the fruit season is pretty well over, and that they are for a short time somewhat at liberty. A grower said to me the other day, "You know if it is a good fruit year there is very little rest indeed from the time the 'berries' come in till the Apples are gone, and that is about three months." There is almost a race between the Gooseberries and the earliest Strawberries to get in first, and then the work begins in good earnest, and continues without intermission till autumn. Currants and Raspberries follow the first named fruits, and with them the ripe Gooseberries; then come the earlier Pears and Plums, whilst Suffield and Julien Apples are also to be gathered, and must be run in as fast as ready, for in a large garden the bulk is counted by thousands of bushels, and of some sort or other the consignments to market are hundreds weekly. Very many growers who do their own marketing are perforce compelled to keep in town one-half their time, whilst the rest must be spent in active supervision at home. All kinds of bush fruits, including Raspberries, obtained a good price this season, Black Currants, of which there was an enormous crop, obtaining 12s. per bushel. On the other hand, Strawberries were a poor crop, as the plants could not stand the drought. They have, however, had a partial rest, and with the fine rains of the past autumn should produce a grand crop of fruit next year. Plums were plentiful and got a good price; so also were Damsons. White Cherries are not largely grown in this district except on grass, and these were abundant; but Morellos are largely grown in some gardens, and the returns from these were first-rate, a good example fetching 6s. per dozen pounds. Apples were a good crop, although many trees had few; yet, compared with the produce of some previous years, the crop must be regarded as a good one. Prices, however, ruled low during the gathering season, and plenty of good fruit could have been purchased at 3s. to 4s. per bushel. Now the price for Kings and Wellingtons is 5s.; and Cox's Orange Pippin, that fine-flavoured dessert Apple, sells for from 6s. to 10s. per bushel. Pears, especially Hazels, have been abundant, but choice kinds are not largely grown here. This is one of the weak points of market gardening, as many of the later and more valuable sorts that would do well as standards are not planted. Growers do not like to be bothered with

fruit that wants storing. Thus Apples of all kinds will sell almost anywhere, but Pears are almost worthless till they are eatable, and the risk in storing is great. No doubt were growers of really good cropping and keeping kinds to put up good roomy stores for their fruit and hold over till the winter, they would secure prices that would soon repay the first cost of the erections. If the fruit can be run direct from the trees to market without farther trouble, the growers generally are very well content to take a lesser return that they may be quit of their produce. Small profits and quick returns are largely believed in by market growers.

**Green crops**.—Somewhat gloomy were the apprehensions of growers during the intense heat of July lest no opportunity should come to get out their winter green crops. Somehow there were good plants in the beds and in plenty, but the soil was so hot and dry that putting them out seemed useless. When, however, the rain fell so freely in August, literally myriads of Brussels Sprouts, Savoys, Coleworts, Cauliflowers, Kale, and others of the Cabbage tribe were put out on hundreds of acres, and the way in which they grew has been since then almost miraculous. Two months ago men were heard to say that we should have no green stuff in the winter, but now all is changed, and the fear is lest we should have too much. The frosts on the nights of the 4th and 5th effectually settled the Runner Beans, but these had been giving a grand crop—still, perhaps, too abundant, for oftentimes the price was not higher than 1s. 6d. per bushel. Marrows, too, have been abundant, and these are gone, so that early Cabbages and Coleworts will now be in request, and thus enable some of the crops to be cleared somewhat earlier than usual. Autumn Giant Cauliflower is remarkably good, and it is only needful that further frosts should be lenient for the next few weeks to enable the market to be well supplied with it. Spinach is a far better and more forward crop than usual, and it is already being largely gathered. Turnips are plentiful, early, and unusually good. There is something singularly pleasing about the big loads of these that go to market all so neatly stacked and so clean washed. The Turnip has had a wonderfully good season, and the rains not only kept the fly in check, but also promoted rapid growth. Provided that the market does not become glutted with hardy produce presently, and that in a good growing season is always to be feared, then growers will have good cause to be satisfied with their market returns.

**Potatoes**.—Breadths of these are being fast cleared, but there are large quantities of Champions and Magnums yet to be lifted, as the ruling prices do not encourage haste. Both these kinds are fairly good clean crops, but the tubers are unshapely this year. Still, dealers will buy these kinds with confidence, inspired not only by their present appearance, but also by past reputation. Regents are generally very bad, in some cases frightfully so; and although of such excellent quality, it is a treacherous kind. Last year the crop, like that of most others, was pretty sound, and that encouraged growers to plant Regents largely, but this season this sort has returned to its worst form, and the loss is heavy. Dealers afraid to buy in bulk will give not more than £3 per ton, but will freely give from £4 10s. to £5 for good Magnum Bonums. Presently, no doubt, the price will go up, and then an opportunity for foreign growers will present itself. In regarding this matter in an economical aspect it would be well if certain politicians would remember that if foreign competition does cause some loss to home growers, the public, that is, the vast body of consumers, are vastly the gainers. A. D.

**The first frost** paid us a visit on the 6th instant, and the results clearly showed the disadvantages of living in a valley. Dahlias and similar tender plants were killed right off, whereas those all round us and only 30 ft. or 40 ft. higher are still beautifully fresh and handsome.—T. SMITH, *Newry*.



## THE FRUIT GARDEN.

## THE APPLE.

*(Continued from p. 400.)*

**Heading down the stock.** Presuming that the stocks have made satisfactory progress since being transplanted to their grafting quarters, and that they are four or five years old from seed or layers, they will have stems about as thick as a man's finger, and, being well established at the root, will be in the best possible condition for grafting. The first operation will be to cut them down near to where they are to be grafted, or about 1 ft. from the ground, grafting being usually done at 9 in. from the ground. The date of cutting down stocks cannot be fixed with certainty, but it should be done before the sap is in motion, and after the severest frosts are past; about the end of January is the ordinary period at which it is done about here, but should frosts set in it is deferred until February, for in the case of freshly cut wood, the frost may cause splitting, thereby damaging the stocks.

**Procuring the scions** may be advantageously pushed forward at any time most convenient during winter; they may be preserved for a long period by burying them almost to the tips in moist soil, where they are safer than on the tree; in fact, in localities where very severe frosts prevail it might be advisable to take off the grafts of rare or tender sorts before the advent of our maximum of cold and bury them safely out of its reach, for as young wood only is admissible for scions, it follows that unless thoroughly ripened they might get injured, and thereby lay the foundation of disease or decay in the future tree. Great care should be taken to collect the grafts only from healthy trees, for although the young shoots of diseased trees may appear healthy, yet it is not advisable to use them for purposes of propagation. Shoots of medium strength should be selected, as they are generally better ripened than large ones, and have more substance than small ones. They should not be tied in bundles, but laid in so that each scion is in contact with the soil, for in bundles the centre ones are liable to wither, and therefore useless for the purpose required, while the outer ones keep fresh and plump. The best way is to cut trenches and lay in each variety separately with a large label attached to it showing name and source whence procured. In nurseries most varieties are numbered, the names being registered in a book, and a most important thing it is to have every kind true to name; nothing is more vexatious after getting any special sort than to find when it fruits that it is not the sort that it was represented to be. Most nurserymen, however, prove their stock plants from which they procure scions before sending any out. It is always advisable to lay in more grafts than are likely to be required, for of late years re-grafting of bearing trees with sorts more in demand in market has been very largely adopted, and when a tree misses a crop, which has been unfortunately too common of late, it may be re-grafted quite late in the year, provided one has the scions laid in in reserve.

## Grafting.

**Whip or splice grafting** is the mode most generally adopted in the case of young trees, such as those in nurseries, and to anyone wishing to try this kind of grafting I would say, cut off the stock at the desired height in a slanting direction, so that a bud is left at the back of the topmost portion to keep the stock in active growth until a union is effected; then take a small slice of wood off the stock, deep enough to penetrate the inner bark, remove a little of the wood, and make a slit in the stock, into which the tongue of the graft must be inserted. The graft should be from 4 in. to 6 in. long, cut in a sloping direction from the middle downwards to the outer edge; then cut up the centre of the cut portion, so as to form a tongue to fit into the cleft made in the stock, carefully fitting the scion to the stock, so that one of the outer edges at least lies even with the bark of the stock; then bind the two firmly together with bast or soft woollen string, especially prepared for the purpose. As to the best time for grafting, as soon

tation is usually not so early as in young vigorous stocks, and therefore crown grafting may be done after the grafting of young stock is over. The stock having been roughly headed down, viz., all the branches large enough for grafting having been sawn off during the dormant season, each piece should be freshly cut off where it is to be grafted with a small-toothed very sharp saw, and then made quite smooth with the grafting knife; a slit should then be cut through the bark and the scion, prepared as in whip grafting, slipped in, the bark having been carefully lifted for that purpose by a smooth piece of ivory or hard wood, in doing which be careful not to bruise or lacerate the tender inner bark. Two grafts are generally put on shoots the size of a man's wrist, and one on smaller ones. Of late years large branches are seldom or never grafted—only the higher ones which are of a size to heal over quickly. Grafts may grow for a time when put on large limbs, but they do not heal over like medium-sized ones. When the scions are inserted they are bound up and clayed

over as in other modes. The small spray-like shoots not large enough for grafting, that originate below where grafting is performed, are left on for the first season to provide leaf growth, for if entirely defoliated, both top and roots get severely checked.

**Grafting clay.**—The next operation is claying the grafts to exclude air, and although many substitutes for clay have been invented, when carefully put on it still holds its own against all comers, but much of its success depends upon how it is prepared. We select what is called clayey loam, a soft unctuous soil of a greasy character like soft soap, lay it on a smooth surface, such as a stone or slate floor, and beat or knead it until it is worked up into a consistence like that of soft putty; then take horse droppings and rub them through  $\frac{1}{2}$ -in. mesh sieve and some fresh cow manure, and thoroughly mix all together. When ready for use, form it into an oval mass around the junction between stock and scion, so that only two or three of the top buds are visible. Where the clay is not good a piece of bast of any sort twisted round it will be of great service in keeping it from cracking or washed off by heavy rains. I may add that dry wood ashes, or even sand or gritty soil, materially help to smooth the surface of the clay. All the grafts should be looked over at intervals of ten days or so, and any defect observable in the claying made good.

**The summer treatment** of grafted trees will, as the bark expands, consist in loosening the ligatures, which must be done by degrees, as young vigorous stocks swell up rapidly. When the graft gets into active growth, the ties may be entirely removed, and as soon as the shoots get long enough to blow about with the wind they must be carefully staked, for they are liable to snap off at the union of scion and stock. Single stakes are best for young plants, but for re-grafted trees sticks may be tied on each side of the branch, so that they project 2 ft. or 3 ft. beyond the grafts, and some soft matting run round to enclose the growths; the greater liberty, however, compatible with safety the better, as training is deferred until



Spout by the river.

as the sap is fully in motion, denoted by the buds swelling up high to bursting, the operation may be commenced. From the middle to the end of March is generally as early as it is advisable to graft, provided the atmospheric conditions are favourable, viz., moist and showery, for a withering east wind that retards vegetation and checks the flow of sap is the very worst condition to start under; therefore, except much grafting has to be done, it is safer to wait till April has set in. Much of the success attending grafting depends on the stock being in advance of the scion, for then the latter finds sap enough for its wants; therefore, I have generally had better success in grafting after the middle of April than at any time in March. I grafted some trees this year early in May, and they have made growths of from 4 ft. to 5 ft. high, and stout in proportion, but as a rule the operation should take place in the first or second week in April.

**Crown or rind grafting** is undoubtedly the best for established trees. This mode of grafting is very easily performed, and the same remarks as to season, &c., apply in this case as in whip grafting, except that in old trees vege-



the following year. Towards the end of the season, if the grafts have made good growths, the stock may be divested of its own lateral shoots, all its vigour being directed to sustaining the grafts.

**Budding.**—Next to grafting, budding is the most important mode of propagating the Apple, and one now largely employed in nurseries, more especially in the case of new sorts or those for which there is a great demand. It may also be used in the case of stocks on which the grafts have failed. It leaves no unsightly scars that can possibly give rise to future wounds, for in a tree that is budded the union of stock and scion can hardly be detected after the lapse of a year or two. What is called shield budding (from the bud being cut out in the form of a shield) is the most popular mode, and the end of July or during August is the best time for the performance of the work. The most favourable condition of wood and buds will be found to be when the young growth begins to get firm and the bark strong enough to be removed and reinstated without tearing or injury. Procure shoots of the desired kind that have good plump buds at the base, and keep them quite fresh by putting the cut ends in water, or if for travelling encase them in damp Moss, cut off the leaves from the buds selected, but leave the leaf-stalk; it serves for holding the bud by when it is being inserted, and it is doubtless useful to the bud itself. Cut the bud off the shoot with a little slice of bark and wood attached to it, removing the latter carefully, so as to leave the bud entire, for if that is injured in removal it will be rendered useless; then taking the stock that has been previously prepared, by being divested of shoots to the desired height, select a smooth, clear portion of the stem, free from knots, and make an insertion in the shape of a T with a sharp budding knife; then lift the bark with the ivory handle and insert the bud as quickly as possible; then bind it round moderately tight with soft bast or worsted. It is not desirable to stimulate growth in the bud during the current year beyond getting it thoroughly united, ready to take the lead the following spring; therefore a good portion of the top growth of the stock is left on until the winter, when it is pruned down and treated in all respects as a dwarf; being established, it starts early into active growth, and makes beautiful straight stems; therefore many prefer budding to grafting. I may also state that it is very useful for filling up blank spaces on cordon or espalier trees with fruitful spurs in a very short period. The beauty of these modes of training depends very much on the shoots being perfectly furnished from base to summit with fruiting spurs, so that when in fruit or bloom they may form perfect wreaths, and if from any cause the buds fail to break regularly in spring it causes unsightly gaps, but by adopting this mode of budding they may be filled at once, of course using the same variety. I would also here remark, that except for some special reason, it is not desirable to grow more than one sort of Apple on a tree. In practice it is not found to answer, and with miniature trees that occupy little space there is really no necessity for putting more than one kind on them. JAMES GROOM.

#### OUTDOOR GRAPES.

THESE have, generally speaking, done remarkably well in this neighbourhood this season, which has not been what may be considered a very favourable one, notwithstanding a period of exceedingly warm weather in July, which was, however, of short duration. The Grape Vine in the open air requires but little attention, and generally gets less than it really requires, being mostly ne-

glected, or allowed to run wild. But where anything like proper attention is bestowed upon it, in some parts of the country at least, it succeeds as well as it can be reasonably expected to do. Much, of course, depends upon the selection of kinds for outdoor culture. The Black Hamburgh, however, has here become perfectly ripe, black as jet, and very well flavoured, under a glass roof or shed, facing due west, without being in any way enclosed; while near where I write, an Esperione Vine, with scant attention, and roughly trained to a high wall facing the south, has thoroughly ripened large and fine bunches. I saw the other day large quantities of the Royal Muscadine beautifully ripened, cut from a low wall, for the purpose of wine-making. The wall is only 5 ft. high, and faces the south-east, and the owner attaches much importance to the fact of having painted its surface black. Possibly, the best method of training the Grape Vine in the open air where the wall is high, such as the end of a house or other building, is what is known as the spur system, training the rods either vertically or horizontally, as may be most convenient. But where the wall is low, say 5 ft. or 6 ft. in height, the young rod system may be followed with advantage, that is, the training of the bearing rods at a distance of 1 ft. 6 in. or 2 ft. from each other, and between each pair of bearing rods leading up a young shoot with the view of becoming the bearing rod the following season. The rods which have borne fruit should be removed as soon as the crop has been cut.

Bury St. Edmunds.

P. G.

— I may tell "A. D." (p. 400) and others interested in this subject that at Castle Coch the Vines for the last two years have been a failure, so far as Grapes are concerned, but they made good canes last year and ripened them well. They were so finely ripened, indeed, that I was fully expecting a good crop this year, if the season proved at all favourable. The Vines started fairly well into growth in the beginning of the season, but, notwithstanding they did not show so much fruit as I was led to expect from the mature state of the canes in the autumn. They grew strongly and vigorously till they had nearly reached the tops of the stakes, some 4 ft. They then began to show signs of a disease attacking their leaves. I could not at first make it out, but on closer examination it proved to be *Oidium Tuckeri*, a minute fungus that first attacks the epidermis of the leaf, and then the fleshy parts, which blacken and dry up, giving the leaf the appearance as if it had been eaten in holes by some insect. I had all the affected leaves and shoots cut off and burned as soon as I knew what ailed them, and since then the fungus has not re-appeared. The Vines have made good canes this year again, which are nearly ripe. The Grapes are nearly black, but not quite ripe, and I am afraid they will not ripen well now after the storm we experienced on the 14th inst. The wind blew down a great number of the Vines, and tore the leaves off others, and sered them all, as if they had been severely frosted. After six years' experience in growing Vines on the French system at Castle Coch, I am beginning to think with your correspondent that a sanguine mind is really needed to have faith in the power of the climate of England to ripen Grapes in the open air on this system. In a succession of good seasons I have no doubt they would ripen well, but not in seasons like those we have been having lately. One bad season in Grape growing in the open air means two, if not three, failures in succession. The Vines on the castle wall here have borne a heavy crop. The Grapes are now ripe, but unfortunately when about half grown they were attacked with mildew near the ground, which has totally spoiled a great many of the bunches, and to make matters worse the storm just mentioned injured the Grapes and Vines severely. A great many of the ripe bunches and berries were blown off the Vines, the leaves torn into shreds, and withered up worse than from the effect of any frost. The wood is not so ripe at the present time as it is in the case of the Vines at Castle Coch, and I am afraid it will materially

interfere with their cropping well next year. I gathered a nice basketful of ripe Grapes to-day (Oct. 15) from the wooden paling enclosing the Cardiff Bowling Green in the Sophia Gardens—the variety Miller's Burgundy. The soil in which the Vines are planted is of a light sandy nature. It is, if I remember rightly, something similar to the soil of the long Vine border at Fontainebleau, near Paris. The Vines have made fine canes this year, and they have never been attacked with mildew since they were planted, some three years since. Grapes on walls in this district have borne heavy crops this year, and suitable varieties have ripened their fruit well. A. PETTIGREW.

Castle Gardens, Cardiff.

#### NOTES AND QUERIES—FRUIT GARDEN.

**The Cockle Pippin.**—Mr. Roberts praises this Apple very much for its fine qualities, both for cooking and eating, and its constant bearing, even in recent "bad years."

**Doyenne du Comice.**—Dr. Roden says this has proved very fine with him in Worcestershire. It requires some time to come into free bearing, and is worth waiting for.

**American Apples at Painshill.**—An interesting experiment is being carried out here in trying the various good American Apples. Mr. Leaf has had many good kinds over and we hope to report the result in due time.

**The Ribston on the Paradise stock.**—The handsomest Ribstons we have seen for a long time, not excepting the American ones, were shown the other day at Kensington. They had been grown on the French Paradise stock.

**Storing Apples and Pears.**—Will any of your readers kindly give me any information respecting the best method of storing Apples and Pears for the winter? also how Apples should be prepared to be kept in bottles to eat similar to the American tinned Apples?—C.

**British Queen Strawberry.**—Dr. Roden still has his remarkable plantation of this in good heart; it has been 14 years in the same ground—light loam on a gravelly sub-soil, trenched and enriched 3 ft. deep. Planted in April and disbudded the first year, the plants did not bear till the second. They have borne as many as 7 quarts a plant!

#### SYON, BY THE THAMES.

ONE of the most pleasing bits of waterside scenery between Richmond and Kew is the picturesque spot shown in the annexed illustration. It forms part of the Duke of Northumberland's beautiful garden at Syon, so famous for its magnificent tree growth. The combination of form and colour in this little corner, as seen from the opposite side of the river, is striking in the highest degree. As will be seen, the towering heads of the Elms and similar trees, and the lofty columns of the Lombardy Poplar, associate well with the little pavilion and other architectural work close to the water. Though unseen in the woodcut, the harmonious blending of the colour, too, is remarkable, particularly at this season, when the decaying foliage of the deciduous trees is assuming its rich autumn garb. The bright golden hues of the Horse Chestnuts, Elms, and Poplars are in strong contrast to the sombre green of a massive group of Yews and other evergreen growth near the building, the clear grey tone of which tends to heighten the prevailing tints of the foliage. At no season of the year, not even in spring, when the unfolding foliage and gay blossoms are so beautiful, are these grounds at Syon so attractive as during October, when the infinite variety of trees and shrubs have each their own peculiar shade of colour, from the gorgeous hues of the Liquidambar down to those leaves that hardly change from green before they drop. The Oaks and Maples are particularly attractive, as are likewise the various kinds of Thorns, Cotoneasters, and similar trees and shrubs now heavily laden with brightly coloured berries. W. G.



## SEASONABLE WORK.

## FLORISTS' FLOWERS.

WM. BROCKBANK, BROCKHURST, DIDSURY.

**Polyanthuses and Auriculas.**—As winter approaches it becomes needful to take a daily oversight of all valuable plants. Unless this be done the losses are sure to be heavy. A Polyanthus may appear to be all right as you pass it casually, whereas a closer inspection might show you that it was almost gone. It damps off in cold, damp, dull weather; the crown comes away in your hand when you touch it, and the roots are dead. In this way numbers of the most valuable Polyanthus are lost. It is pretty much the same with Auriculas, only they give you a little more warning if they are going wrong. If an Auricula looks in the least sickly it should be turned out of the pot, and the soil carefully removed, in order to ascertain what is amiss. It will frequently be found at this season that some insect has deposited its egg near the plant some time ago, and that a little white grub is now gnawing its way into the heart of the stem, and if let alone the plant will surely be lost. If the roots are not found at the sides of the pot, be sure the soil is wrong, and this must be altered; or, perhaps, if your plants have come from Yorkshire, you may find the mealy bug at the roots, and this will require careful attention. All faded leaves must be removed, and the least traces of decay cleansed away, because it spreads to the stalk of the plant if allowed to proceed too far. Greenfly infests Auriculas, and should be removed by the blowing tube. A quick puff will clear out the deepest corner, and this is a much better and more effective plan than the sable brush or by fumigating.

**Polyanthuses** are in like manner preyed upon by red spider, but with more fatal effect; and this ought especially to be attended to and eradicated. A plant may look all right, but if you take it in your hand, and carefully turn back the leaves, you will probably find the enemy lurking there and hard at work. We use nicotine soap, applied in strong solution with a soft brush. It seems to kill the spider instantly, and if the leaves of the plant are well rinsed afterwards with clear water, all traces are removed, and no harm is done to the foliage. It does not do to fumigate Polyanthus. They appear very liable to become sickly from ordinary treatment of this sort. John Slater, thirty years ago, wrote "In summer a copious watering, late in the evening, will prevent that formidable enemy, the red spider from destroying the whole collection, which is frequently the case." Mr. Douglas tells us in last week's GARDEN (p. 392) that his Polyanthus are so debilitated by its ravages that he despairs of their flowering next season, and that a brother florist has lost all his valuable stock thereby. I think all this points to some fault in the mode of culture, which will be found to be at the root of the matter. Red spider only appears to attack sickly plants. If they are in strong vigorous health it leaves them alone. Potted plants are liable to suffer greatly from it, because of their artificial position and the additional impediments to free growth which this entails upon them, and too much care cannot be taken to ward off the evil as far as possible. I believe we coddle the Polyanthus far too much. The valuable sorts, too, are divided and re-divided until they have no stamina left, and very soon grow sickly and fall a ready prey to pests and damping off in consequence. Smith's Duke of Wellington appears to be an instance of this. The half-guinea plant obtained for it by the London florists led to its over-division, and perhaps over-fertilising, so that, as Mr. Douglas now says, it appears to be lost. I think, however, we shall hear of it again, as I believe it is yet in the hands of some amateurs who will preserve it if really worth the trouble.

Both Polyanthus and Auriculas should now be placed in their winter quarters, and protected from damp on the one hand and from frost on the other. Those kept in frames should have plenty of ventilation in fine weather; they should be kept

as dry as possible, but at the same time carefully watered. It is very difficult to manage all this in frames, especially in wet or frosty weather, and therefore it is better to place them in a low-roofed greenhouse where the temperature is not allowed to fall below 40°. Here the pots should be plunged in dry ashes, and the plants should have plenty of ventilation and all the sunshine possible. Polyanthus could be managed in the same house to advantage, because they could more readily be examined, but in neither case should there be any heat used to force the growth. This is especially to be borne in view.

This seems a formidable list of troubles and duties for the amateur florist, but these are just what the Lancashire weaver finds his daily delight in. Nobody can grow these flowers without daily care—I had almost said loving care.

## FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

NIGHT frosts and furious gales have caused sad havoc in flower gardens, as everything the least tender has been injured or destroyed, and the clearing away of the dead and dying must now be proceeded with in order to give to beds and borders a more tidy appearance. Stripping herbaceous plants of their tops till they ripen off naturally, as is frequently done, is a mistake, as it has a weakening tendency by depriving the crowns of their proper support, and rendering it impossible for them to develop themselves properly and flower in the free and strong manner they ought. This being the case, the foliage and stems should be preserved as long as there is any life in them, except as regards Dahlias, which the frost generally makes short work of, and these may at once be taken up, headed back to within 6 in. or so of the tubers, which should then be stored away in some safe place for the winter. It is the practice with some to hang them up or place them under stages, but I have always found them keep best buried in dry sand or soil, which prevents them from rotting or shrivelling, as they do not get affected by any changes in the atmosphere, in the way they are liable when exposed to the air. Gladioli, too, are best taken care of in the same manner, and so are Tigridias or any other bulbous or tuberous-rooted plants that may be necessary to house till the spring. Alstroemerias, Belladonna Lilies, and such like that remain in the ground, should have the protection of a dressing of half-rotten leaf-soil, which is a capital non-conductor, and acts as an agreeable stimulant as well if allowed to remain on and become mixed in with the earth in the spring. Where it can be had in quantity there is nothing answers better as a mulching to herbaceous borders, and it is invaluable for putting round the collars of plants of doubtful hardiness, such as Pentstemons, Antirrhinums, &c., which, by its use, may be rendered quite safe against any weather. To prevent the wind blowing the leaf-soil about, and to ward off blackbirds, which disturb it in search of insects, it is a good plan to stick a few branches of Whin around, as these, being close and spiny, answer the purpose better than anything else. As there is now little to attract the eye in beds, the deficiency should be made up as much as possible by extra keep in having all bare ground perfectly clear of weeds and neatly raked, gravel rolled and smooth, and what is of even more importance still, Grass swept and kept clear from worm casts, which are a great eyesore, and sadly disfigure a place. As the labour of cleaning up after worms at this season is great, the best way is to make short work of them by turning them out of their holes and sweeping them up. This may be done by the use of lime water, which should be poured through the rose of a pot after a wet time, when the worms are near the surface, as then it immediately soaks in, and the effect of its caustic properties on their skin is such as to send them writhing out, when they can be collected by the aid of broom and shovel. The remedy for their destruction will not be complete at once, as others will be lower down, but by repeating the dose occasionally, lawns

may in a great measure be freed from such troublesome pests. Another disfigurement to which lawns are subject is weeds, which not only look bad, but spread at such a rate as in course of time to almost usurp the place of the Grass, especially where the soil happens to be poor, when Daisies, Plantains, &c., if left to themselves, soon take possession. The quickest way to destroy these is to give them a drop of vitriolic acid in their crowns, which from its strength will soon burn them up, when the Grass will quickly spread and cover the spots rendered bare by their death. The way to use the acid is to have an open, wide-mouthed bottle in which to carry it in the left hand by suspending the bottle from a stout piece of wire, when with the right a stick may quickly be dipped in and the fatal drop administered to the vulnerable part right in the heart of the weed. Next to Plantains and Daisies, Moss is the worst enemy to lawns, but this parasite may be very quickly and easily dealt with, and eradicated by applying lime, which to be effectual should be fresh and good from the kiln and put on immediately after it is slaked. To prevent it from blowing about when being used it is necessary to weight it by mixing it with fine soil, as when so done it may be sown on evenly without disfiguring shrubs or walks near. After putting it on it should be rubbed well in amongst the Grass by using the back of a wooden rake, which will break up any lumps and distribute it more regularly over the ground.

## PROPAGATION.

THIS will now be confined principally to hardy plants. As regards cuttings of stove and greenhouse plants, all that will be necessary will be to keep them well watered, give them air when moisture condenses too freely, and above all remove any decaying matter. Care must also be taken not to shade too heavily, although of course cuttings of most plants recently put in will require a certain amount, but as a rule it need not be put on before ten o'clock, and should be removed soon after three, even on bright days. Where it is desired to propagate in quantity Primulas of the *amœna* section, the present is a suitable time for so doing, as they are in most cases dormant and succeed better than when divided later. For this purpose break up the mass of roots and select the strong crowns to be repotted, several in a pot for flowering purposes, which they will do in the spring without showing any ill effects from removal, and where there are great numbers of strong roots attached to them, a few may be taken off without weakening the plant. All the small crowns should then be sorted out and dibbled into a frame in which is a prepared bed, consisting of loam, lightened by a liberal admixture of leaf-mould. Any pieces of root taken off during the process, even if without perceptible eyes, should not be thrown away, but cut into lengths of about 1 in., and dibbled thickly into pots or pans of sandy soil. These, if kept in a cold frame, will push forth buds in spring from the upper part, and root action will also commence, when they may be potted off or dibbled into a frame as recommended above. The Himalayan Primula denticulata may also be propagated to any extent in this way. Cuttings of deciduous trees and shrubs will strike better put in now than two months later, although the latter practice is most frequently followed, especially where cuttings of all kinds are put in on an extensive scale, as in that case they can be prepared during bad or severe weather, whereas now many other things demand attention. For such cuttings, choose to some extent a sheltered spot, both from the drying winds of March and the hot sunshine of the summer, and where the soil is not too tenacious, but rather of a light open character. Take firm well-ripened shoots, leave them from 12 inches to 15 inches long and insert about three parts of their length in the ground. The latter having been dug stretch a line in the direction which the rows of cuttings are intended to take. Make a trench, one side of which should be quite firm, and against this place the



cuttings in an upright position, with the base of each resting on the bottom of the trench; this done, fill up with soil and tread firmly. Special attention must be given to this last operation, or failure will be the result. About 1 ft. is a good distance between the rows, as it allows of a hoe to be used during the following summer, but the cuttings may stand about 3 in. asunder in the rows. Where propagated in large quantities, as has just been stated, they are generally left till later in the season, in which case the cuttings are made, sorted, and tied up in bundles ready for insertion, and laid in till the weather is suitable for that purpose. In either case they will want little or no attention, except to keep them clear of weeds, and if the summer be very dry watering them occasionally; by autumn they will in most cases be rooted and ready for transplanting. Evergreens should be all in before this time.

T.

## INDOOR PLANTS.

T. BAINES, SOUTHGATE.

**Chrysanthemums.**—If fine flowers are wanted the buds must be thinned, for all varieties form very many more than they can perfect. The extent, however, to which the thinning process should be carried with individual kinds can only be arrived at by observation. Nevertheless, as some guide in the matter, it may be accepted as a rule that the larger the flowers the variety produces, the fewer it will be able to fully develop; and, with few exceptions, the incurved kinds cannot support near so many as those with reflexed petals, of which latter the old yellow variety, Annie Salter, may be taken as an example. The latest flowering sorts are much the most useful, consequently I have always found it advisable to thin these the most, for the fewer flowers a plant is allowed to bear the longer the individual blooms will last after they are expanded. The plants are better out-of-doors, so long as they are not in danger of being subjected to more than two or three degrees of frost, for if housed too soon, unless stood thinly in a very light, airy structure, they get drawn and suffer from the attacks of mildew. On the first appearance of this sulphur should be dusted on the affected leaves, otherwise the fungus spreads most rapidly, disfiguring the plants as well as affecting their ability to mature their bloom. A little more soot, say about  $\frac{1}{4}$  in., laid on the surface of the pots will much assist the development of the buds, and will also banish worms from the soil.

**Camellias.**—Any of the stock of these that are at all under-potted and deficient in the green colour of their leaves will be benefited by an occasional application of soot water, the effects of which will soon be apparent, not alone in the improved condition of the foliage, but it will also assist the buds to swell and reduce the number that fall prematurely, such as generally happens with plants that have insufficient sustenance. Should that portion of the stock required in flower early, say before the close of the year, be at all backward, the blooming may be slightly accelerated by keeping the plants a little warmer than the temperature an ordinary greenhouse affords; but there must be no attempt at forcing in this stage of bud growth, or many will drop. Where means permit, such as afforded by the existence of a lean-to house with a north aspect, it will be well to select the latest blooming kinds, and those that have set their buds late in the season, and keep them through the winter as cool as possible without their being frozen. Plants so treated will flower quite six weeks later than if wintered with an ordinary stock.

**Paris Daisies, Richardia æthiopica, and Veronicas.**—Any of these that have been planted out with a view to lifting and potting, and that have not yet been taken up, should, even in the south of the kingdom, be at once potted, for although it is better to let a portion of the stock of such plants remain out as late as they can be trusted, as when the weather has got cool

they do not feel removal so much, yet if out until sharp frost occurs, they are liable to have their flowering capabilities injured.

**Campanula pyramidalis.**—Plants of this most useful subject that are intended for blooming in pots should now be potted, taking them up with as little breakage of their roots as possible. All the above plants should be well supplied with water as soon as potted, to prevent flagging, otherwise the foliage will suffer, for they will bear without injury the soil being well soaked immediately they are potted in a way that would be death to tender rooted things.

**Double Primulas.**—These ought now to have a little warmth if their flowers are required soon, and under any circumstance they must not be kept too cool, or they are all but certain to suffer by damp. If not potted sufficiently deep in the soil, a little should be added, so that it comes right up to and slightly covers the base of the lower leaves. At first sight this practice would seem to endanger their damping at the collar, but it has a directly opposite effect.

**Hardy plants** for forcing should now be taken up and potted. These include Roses, Deutzias, Azalea mollis and the Ghent varieties, Rhododendrons, double Prunus, Andromedas, Lilacs, Laurustinus, &c., for though the leaves of some of the deciduous things may not yet be off, still the buds are now fully matured; and it is much better to get work of this description done at once and to have the plants in hand, so that the pots may be plunged where they can be protected in a way that will prevent the soil getting saturated with wet. A sufficient quantity of Dielytras and Spiræas should be treated in like manner, so as to have them in readiness for putting in warmth later on.

## FLORAL DECORATIONS.

J. HUDSON, GUNNERSBURY HOUSE.

**HARDY** flowers will now be getting somewhat scarce for utilising in a cut state for indoor decoration. Michaelmas Daisies will be very useful for a few weeks to come, and when used in combination with Anemone japonica and its white variety, a pretty effect will be the result. Where early frosts have not cut off the single Dahlias, the utmost use should be made of these while they last. They produce a good effect when arranged in their various colours by themselves, and for sideboard decoration are very striking, care being taken to cut them with as good a length of stem as possible, and to arrange them in a light and natural manner. A few Roses may still be got, and will be found useful for the drawing-room. Some kinds, La France, for instance, will open badly unless the outer petals are removed; when this is done they expand fairly well. Of foliage to use in combination with hardy flowers there is no lack, the leaves and terminal growths of the Virginian Creeper being very useful. The foliage of the Carrot may be used, and its autumnal tints are beautiful. Eragrostis elegans, a late ornamental Grass, may still be had, and it makes an excellent groundwork in which to arrange flowers with thin stems, such as Catananche cœrulea. The spikes of Celosia pyramidalis aurea and coccinea may likewise be turned to good account; these are very lasting in a cut state, and look well arranged in trumpet vases. One of the best white flowers for fragrance obtainable now is Bouvardia Humboldtii corymbiflora, a few flowers of which are sufficient to scent a room, especially in the evening. It can be used very well in combination with Roses or in specimen glasses with another distinct colour of its own kind. A few stray flowers may yet be open of the Scarborough Lily; a spike or two of this and the same of the Amazonian Lily (Eucharis amazonica) have a striking effect when arranged together, using in association with them the foliage of the latter plant or of Aspidistra lurida. If not already secured, no delay must now be made in cutting any late sorts of Everlastings—Helichrysums in particular. Suspend them for a while till the stems

are sufficiently dried to hold the flowers erect. The flowers of the Globe Amaranthus should be treated in like manner. They come in later on when flowers are scarce and variety is required.

## FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Peaches.**—Where the lights have been taken off the roof of the early house they may be replaced towards the end of the month. In many places in years gone by it was the practice to close for forcing in November; but, thanks to the late Mr. Rivers, early Peaches and Nectarines of his raising or introduction, started a month late, still give us ripe fruit for the Queen's birthday. If all the old fruit-bearing shoots have been carefully removed, as previously advised, but little pruning will be needed. It will, however, be necessary for an experienced hand to go over the trees after they are let down from the trellis, when the usual cleansing may be performed, and tying in will give work for days unfavourable to outdoor operations. When all is finished remove loose materials and inert soil from the surface of the borders, and replace with fresh compost consisting of strong calcareous turfy loam, old lime rubble, or charred refuse. Be guided by the state of the trees in the application of manure; if old and weakened by heavy cropping a good dressing in the autumn will be a great help, while vigorous young trees will be best without it until the crop is set and swelling. See that the internal borders are thoroughly moistened before they are top-dressed, as dryness at the roots in winter is fatal to good Peach culture.

**Late houses.**—The trees in this department are now quite ripe and promise a profusion of good blossom. If the wood has been properly thinned and the houses are not wanted for plants allow the leaves to fall naturally and give an abundance of air, but do not remove the lights from the roof unless they require painting. Let all root pruning, lifting, and border making be brought to a close at once, as trees on open walls have set their flower-buds and may be removed with safety.

**Fruit room.**—By this time the latest Pears and Apples will have been gathered and stored away in the fruit room, which must be kept cool and well ventilated to admit of the escape of moisture. For some time after the fruit is stored it will be necessary to look over the shelves at least once a week for decaying specimens, before they have time to taint the sound ones, which they will soon do if this precaution is neglected. Late kinds of Apples and Pears should be placed in a cool room where the temperature does not fluctuate, and when the time for ripening approaches dessert Pears will be greatly improved in flavour by removal to a higher temperature for a few days before they are wanted for use. To prolong the season of the finest kinds unblemished fruit from the latest gatherings should be stored away in clean earthen jars and covered with a few fronds of dry bracken, an invaluable article in the fruit room, as it absorbs moisture and does not impart an unpleasant flavour to the fruit. Owners of model fruit rooms, capable of resisting 20° to 30° of frost without firing, do not require covering of any kind; but unfortunately they are the exception to the rule, as many gardeners have to make use of an upper storey, which is affected by every change from heat to cold, from drought to chilling dampness, with nothing better than a batten of straw (the worst thing they can use) for keeping out the frost. Where this is the case, good dry Fern, if obtainable, combined with extreme cleanliness, will be found the best covering material that can be used.

**Orchard houses.**—With the exception of the Salway, a late variety not worth growing, all the Peaches will now be over, and trees that have not been potted may be top-dressed and placed out-of-doors at once. When it is not convenient to increase the size of the pots occupied by large trees they may be kept in a healthy bearing state



for a number of years by means of annual top-dressings, which must be removed and replaced when the foliage is ripe. To the amateur the removal of the old top-dressing full of roots may seem barbarous; but not only must the surface be removed, a cavity worked round the insides of the pots to the depth of say 6 in. will also be necessary. Let the new compost be rich, dry, and adhesive, ram firmly and see that the balls are thoroughly watered before it is applied. If any of the trees have been infested with insects lay them on their sides and wash with a solution of Gishurst before they are top-dressed, otherwise the larvæ may escape and spring into life when forcing is commenced.

**Plums and Cherries.**—The above treatment as to the removal of exhausted top-dressing applies to these also; and it is surprising how quickly fresh roots find their way into the new compost. In course of time these trees make very little wood, and become thickly set with blossom buds, which may require thinning out for the twofold purpose of preventing exhaustion and facilitating the cleansing process. When all the trees have been arranged in blocks or rows for the winter or season of rest, throw a light, but rather small meshed fishing net over them to keep off small birds, otherwise they will soon ruin the prospect of fruit when the buds begin to swell.

**Cherry house.**—Nothing will be gained by leaving the trees exposed after the end of this month. If the lights and rafters were painted immediately after removal, the paint will now be firm and in the best possible condition for resisting the weather. The painting of forcing houses forms such a heavy item in the expenditure that too much attention cannot be devoted to the extraction of moisture from the wood before it is painted and proper hardening before the lights are again wanted for use. If the usual occupants of cold houses are placed under the trees for protection from the elements, they should be capable of standing a very low temperature, that is to say, an approach to the freezing point, as Cherries under glass are easily excited after a long season of rest. Follow former directions with regard to cleansing, and spare no pains in getting rid of the larvæ of aphids, the most troublesome insect we have to contend with when the trees are in flower. Gishurst compound, eight ounces to the gallon, makes an excellent wash for the trees and trellis. When quite dry, tie in, and ventilate to the full extent in mild weather until the time arrives for starting.

#### MARKET FRUIT GARDENS.

J. GROOM, LINTON PARK.

THE principal work in these will for some time to come consist in grubbing up exhausted trees and in the planting of new ones, and seldom has greater activity been observable in this branch of hardy fruit culture than that which occurs at the present time. Gooseberries and Currants that have occupied the intermediate spaces between standard trees for a certain number of years are being grubbed up. When the trees begin to meet and intercept the light they are no longer useful; such thick cropping can only be successfully carried on by extra supplies, and as the tall standard trees are the most profitable it is bad policy to let the under fruit stand so long as to check their growth. The work of clearing the ground is done in rather a summary manner by means of a horse and a chain, one end of which is slipped round the stem of the bush, which, with a sharp jerk, is drawn out with all its roots adhering to it. The ground is then well scarified with harrows, and sown down with permanent Grass seeds early in spring for feeding off with sheep. The bushes are drawn to an open space and burned, and their ashes are strewn on the surface. Orchards thus treated make rapid progress, for the upper roots take early possession of the freshly cultivated soil, and the trees generally become very fertile, as the surface soil is kept rich by top dressings. The Grass being allowed to get long at gathering time makes good winter keep for sheep. Apples are generally considered to keep better from trees grown on Grass than on cultivated

ground, and in this locality anyone purchasing winter keeping sorts always give the preference to those from trees on Grass. The late terrific storm nearly divested the trees of late crops, but those which fell on long Grass are but little injured, while those that fell on stony dug land are useless for storing.

**Plums** as bush trees are being largely planted, for next to Apples they are about the best market fruits we have. Dwarf or half standards are also very popular planted 15 ft. apart each way with two rows of Gooseberries or Currants between them. The ground about these is generally manured and roughly dug up very soon after the fall of the leaf, and the trees are pruned after Christmas, when all Couch Grass and weeds are forked out. The sorts in greatest request for market are the Early Orleans, Rivers' Early Prolific, Rivers' Grand Duke, Cox's Emperor, the Bush Plum, the Czar, Victoria, Pond's Seedling, Pershore, Belle de Septembre, and Black Diamond. Plums require pruning in the young stage to keep the strong leading shoots from rushing up too quickly and thereby making weak, straggling trees, but after they get into bearing they require very little pruning beyond cutting away dead or weakly branches and shortening any straggling growths.

**Pears** are being more planted as market fruits than formerly, and in soils where they succeed they are a remunerative crop. Tall standards treated like Apples on Grass are best, but dwarf bushes or pyramids produce the largest fruit. We have lately gathered very fine fruits from trees so managed of such sorts as Louise Bonne de Jersey, Van Mons Léon Leclerc, Catillac, Josephine de Malines, Gratioli de Jersey, Beurré Clairgeau, Marie Louise, Marie Louise d'Uccle, Vicar of Winkfield, &c. These always command a remunerative price in market, not only for dessert, but also for stewing. Bellissime d'Hiver, Verulam, and Catillac are best for culinary purposes, but second-rate dessert sorts like Vicar of Winkfield can be utilised for the purpose.

**Cob Nuts and Filberts** are being largely planted just now; they flourish on stony land, such as that of the higher elevations where other fruits are precarious. They may be grown beneath tall standards, but are best when they get more sunlight. I observe lately that they are being planted in alternate rows with Damsons, as both succeed on light soil, and the Damson, planted as a standard and kept topped in rather closely, does not create much shade. The Nuts are planted about 15 ft. apart as bushes, and pruned in the open cup fashion. Filberts are not nearly so largely grown as formerly; the Kentish Cob Nut is a much heavier cropper and more certain bearer, and Webb's Prize Cob is a grand Nut.

**Bush fruits**, such as Gooseberries and Currants, are planted 6 ft. apart each way generally as intermediate crops in young orchards, and lately Raspberries have been largely planted as field crops. They are planted in clumps 3 ft. or 4 ft. apart, and cut down annually to 3 ft. high, not staked or tied as in gardens, but nevertheless in good soils and under liberal cultivation they yield fine crops that are all sold to jam manufacturers by the ton, as many as 4 or 5 tons being sent into Maidstone in one lot. The sorts most in demand are Fastolf, Carter's Prolific, and Prince of Wales; only the red sorts are grown for market.

#### KITCHEN GARDEN.

R. GILBERT, BURGHEY.

THE occurrence of 4° of frost this morning (October 17) tells us to lose no time in lifting and properly storing Potatoes. I question if any system is better than hilling them up in pits, laying them in rows about 5 ft. wide, and putting from six to seven tons in each heap. Scotch Champions with us are a wonderfully fine crop, and the few diseased tubers amongst them are not worth mentioning; the quality is excellent in all ways, except that they are deep eyed. I am also busy lifting Turnips and Carrots, which I pit in the same manner as Potatoes. I am trenching and highly manuring one of our south borders for early Peas,

which I always sow from the 5th to the 12th of November as follows: I draw the drills 4 ft. apart, roll all the seeds in red lead to keep off mice, and directly the young plants break through the ground I cover with ashes to keep away slugs, and put across them strings of red worsted to frighten off the birds. It is a mistaken idea to suppose that frost kills young Peas; what kills them are the sharp surface winds that occur in February and March. Therefore stick them as soon as possible, putting Scotch or Silver Fir branches up each side. The usual look-out in the case of all young crops, such as Cabbage or Lettuce, should be given for grubs, and the soil between the rows should be stirred occasionally.

#### THE KITCHEN GARDEN.

PEAS AND POTATOES.

I CLASS these together because for several years I have grown them together, with a, I think, considerable advantage to the Peas, and without doing the Potatoes any harm. Where sticks to support them can be easily obtained, I think tall Peas are more profitable than dwarf ones; but when the rows are placed side by side they steal each other's light, are drawn up weakly, and lack the power to resist mildew or bear freely. When, however, the rows are placed 20 ft. apart, and spaces between them occupied by other crops of a dwarf habit of growth, the most, I think, is made of the land. The Peas can just as easily be sown to come in succession by this plan as any other, as when the Potatoes are planted spaces can be left for the Peas, marked with a peg at each end, so that all it is necessary to do when we require to plant more Peas is to place a line down where the pegs stand and draw drills 6 in. wide, and from 2 in. to 3 in. deep according to the character of the soil and the season.

I like to try new varieties of vegetables in a small way, but this year, as in the case of so many previous ones, the old kinds of Peas, such as Ne Plus Ultra, British Queen, and Huntingdonian have done so well as to raise a doubt in my mind as to the utility of trying new kinds purchased at a high figure. We have gathered Peas every day, Sundays excepted, from the time the early sorts were finished from one or other of the sorts just named till last Thursday, and might have continued to do so some time longer but for the gale that swept over here on Friday last, carrying everything before it, cutting the leaves off tree and bush where exposed as clean as if it had been done with a knife.

I never remember so good a season for Potatoes as this; the crops in this neighbourhood have been marvellous and there has not been much disease. Schoolmaster is the best for all soils, the old Lapstone Kidney has done well, and Patterson's Victoria holds its own among later kinds. Champions have been much planted round here, but will not realise so much money this season in consequence of other and better kinds being plentiful. The American kinds have done well again this season after failing for three years. Very heavy crops of Early Rose and Beauty of Hebron have been lifted and of good quality. Magnum Bonum is a good kind for field culture, but the quality is not good when grown in a highly cultivated and manured garden. J. H.

**Fashionable Potatoes.**—The Belgian correspondent of a contemporary, to whom Mr. Baines alludes (p. 374), though writing if not deprecatingly, at least with feelings of disappointment, of the Potatoes he had received from this country, does not mention any particular varieties; but Mr. Baines at once pronounces them to be what are in his estimation "fashionable" sorts, by which he means, I suppose, exhibition kinds. I can supply the omission as to names by stating that the sorts sent were some two dozen or more, and included all the most popular of our varieties, of which tens of thousands grow here—a few to exhibit perhaps, but the greater portion for domestic use. They



were not purchased as show kinds, or sent as such, but as a good representative collection of English sorts. Now the disappointment of the Belgian grower arises not from the lack of quality on the part of the sorts sent, or the major portion of them at least, but rather from the fact that tastes in the respective countries differ, and also because newly imported sorts need culture for a season or two to get them acclimatised ere they will show their true character. We find Continental sorts grown here to be the first year, from our point of view, almost worthless, and in succeeding years very inferior to our best kinds. Probably the Belgian grower found similar results from the produce of his importation. If, however, he will save sets, and grow them another season, I think he will be better pleased with the nature of the crop, and will not complain of want of flavour.—A. D.

**Lifting Potatoes.**—Mr. Inglis, writing from Cuckfield, where he grows Potatoes under the favourable conditions of a good position and earlier climate than many possess, tells us that he lifted his crops in July. Why, over three-fourths of the kingdom tubers were not half formed on the later sorts so early as that, and it was only the earliest kinds on early soils that would be so lifted. The first early sorts are all fairly good. I have nothing to complain of so far as they are concerned, but it is amongst the later kinds—sorts that in July were as full of vigour as could be, and that were pushed into yet more vigorous growth in August which come up so badly. To have lifted these in July would have been a great mistake; there was nothing to lift then. There is also an impression abroad that it is only to say get up your Potatoes and it is done. Those who have a dozen men at their disposal can put them into their gardens and lift the crop in a day or two, but where there are acres to be lifted, composed of sorts that ripen from the end of July to the end of September, it is evident that much time and labour are required. Besides, Potatoes are bulky crops, and if lifted must be stored in bulk. With what result? Why that within a month, if the crop when lifted seemed ever so healthy, one third or more have to be picked out diseased, and nothing worse could have happened if it had been left in the ground for that month. The universal growing of first early kinds may save us from the disease, but the early lifting of late sorts never will. Moreover, advice suited for one part of the country is seldom applicable to other districts.—A. D.

**Layering Broccoli.**—With the experience of past severe winters before us it may not be out of place to remind those who have not yet tried it that laying Broccoli down with the heads to the north is decidedly an efficient help to them in passing through the winter, and now is the best time to do it. Commence at the northern end of each row and dig a good spit of soil out close up to the stem on the north side; then press the plant down, and take a good spit of soil from the next plant, and lay it right over the stem, proceeding thus till all are laid. If the plants have been grown with plenty of space between the rows, so that light and air may have thoroughly hardened their tissues, there should be no difficulty in carrying this valuable vegetable safely through the winter; for during the severest visitations of frost, if there is not much snow, a little dry Fern litter or branches may be thrown over them, but if left erect it is next to impossible to cover them effectually.—J. G., *Linton*.

## NOTES AND QUERIES--KITCHEN GARDEN.

**Sutton's Hero Potato.**—Dr. Roden, of Kidderminster, speaks very highly of this. It is mealy and fit to eat the moment it is taken up, is a good and late keeper, and "resists disease."

**Brussels Sprouts.**—These are exceptionally large and fine in market gardens in this neighbourhood. For some time past growers have been pushing them into the market, as they appear just now to be realising fair prices.—J. C. B.

**Cloches.**—Will any reader of THE GARDEN oblige by telling me how to procure these, their price, best way of packing for carriage, and name of maker?—E. V. H.

## GARDEN DESTROYERS.

### HINTS ON KEEPING GARDENS FREE FROM INSECTS.

THERE is nothing more injurious to plants of all kinds (bad cultivation excepted) than the attacks of various insects, and when, as is too often the case, unfortunately, plants suffer from both these causes their condition is indeed miserable. Plants in full growth and vigour are much less liable to the attacks of insects than those in an unhealthy state; therefore use every endeavour to promote and maintain a healthy condition. Some plants as soon as they appear above ground, Turnips and Peas, for example, are often attacked by insects—the former by the Turnip beetles, and the latter by weevils. Their growth at this period should be stimulated as much as possible, for unless they grow rapidly there is a great chance of the crop being ruined. Keep down all weeds, and do not allow any corners to become choked up with them, as is too often the case, for places of this kind are most attractive to insects, and they are able to breed there unmolested. Take care that any ground not in use is kept clean and occasionally hoed, for if there be any hurtful insects in the soil, they must die, or shift their quarters, and stirring the ground exposes them to the birds, and chrysalides thus turned up soon perish in the light and air, even if they escape the vigilance of the birds. Look well over fruit trees as soon as the leaves are down in the autumn, and carefully examine any that remain on the trees, for it will often be found that there are chrysalides carefully wrapped up within them, or that there are eggs on them. The caterpillar when spinning its cocoon attached some of the threads to the shoot to prevent the leaf falling off with the others. The moths leave these chrysalides in the spring. In some cases the moths lay their eggs in the autumn, often choosing the leaves which surround the cocoons which they have just left, or laying them in rings or patches on or round the adjacent stems. These eggs are not hatched until the following spring. The destruction of these chrysalides and eggs may prove of the greatest importance to the next season's crop.

**The Gooseberry caterpillar.**—This year the grubs of the Gooseberry saw-fly (*Nematus Ribesi*) have again been very troublesome. There is no more effectual method of keeping bushes free from them than removing the earth during the winter from under the trees to the depth of 2 in. or 3 in., and replacing it with soil from some other part of the garden. The earth taken away should be burnt or very carefully sifted, and then spread thinly over the ground, so that any cocoons which may have escaped notice during the sifting may fall a prey to the birds. Burn as soon as practicable all prunings from fruit trees, as there are often eggs laid on them.

**In greenhouses** we must be very careful that any fresh plants which may be introduced into them are perfectly free and clean from mealy bug, scale, thrips, green-fly, &c., or a hither-to clean house may soon become in such a state that it will require much time and labour to free it from these pests; much damage has often been done in houses by neglecting this precaution. As soon as a plant is found infested with any insects, clean it thoroughly at once before any other plant becomes contaminated. Due attention to ventilation and not allowing the air to become dry will prove an almost certain safeguard against thrips. All cracks and crevices in walls should be carefully filled up, as insects often harbour and breed in them, and if they once take possession of these localities it is a most difficult task to dislodge them. If ants are found running over plants it is a sure sign that they are attacked by green-fly or scale insects, and that they are visiting the plants for the sake of the sweet substances which exude from these insects; and though ants are often a great nuisance in greenhouses, they are useful in this respect.

**Bees and flies** should be carefully excluded from all houses as much as possible (except orchard houses, where their presence is useful in setting the fruit), as flowers which have been impregnated wither and die much sooner than those which have not been, the object of their existence being over. Many insects and slugs are night feeders, and should be searched for at night if their presence cannot be detected during the daytime. It should always, however, be borne in mind that there are many insects which are not only not injurious, but are most useful in gardens. Nearly all fast-running beetles (the cockroach is not a beetle), particularly those which are black and shining, and which are often found under stones, planks, and rubbish, and the long narrow ones, often known as devil's coach-horses, are of great service, as they are very voracious and live nearly entirely on small insects. Ladybirds should never be killed, as their grubs are most valuable in destroying aphides. All clear-winged insects which have a long sting-like organ protruding from the end of their bodies should be spared; they belong to the family of ichneumons, and are of the greatest service in destroying caterpillars and grubs. The little woolly egg-shaped bodies which may sometimes be found near a dead caterpillar should not be disturbed, as they are the cocoons of these insects. Toads should always be encouraged in gardens, and all kinds of birds. There are very few of the latter which can be said to be really injurious; even the bullfinch and chaffinch should be spared, as the buds which they take have mostly grubs in them. The number of caterpillars and grubs which birds destroy during the nesting season is incalculable, and it would be an evil day for gardens in this country if the number of our birds was much diminished. G. S. S.

**Wasps.**—It is perhaps rather late in the season now to do so, but I would warn the readers of THE GARDEN not to spare any wasps they may now meet with, particularly in greenhouses, sheds, &c., as they are almost certain to be queens seeking for a convenient place in which to hibernate. They often creep under the tiles or slates of dwelling houses, &c., and live through the winter in some sunny position. In a house in which I once lived I was much surprised one day in the spring, on going into the roof, which was used as a lumber room, and lighted by some small windows in the gables, to find a dozen or more queen wasps on the windows trying to make their exit; they had evidently spent the winter in the roof, having got in through some crack or crevice in the slates, and now, aroused by the warmer weather, had flown to the light, hoping to make their escape, in which I need hardly say they were not successful. A queen wasp killed in the autumn or spring will probably be the means of preventing the formation of a nest. This spring in some places there were an unusual number of queen wasps; many, however, must have been destroyed before they were able to make their nests, as later in the season there appear to have been fewer wasps than usual.—G. S. S.

**The luminous centipede.**—While walking in a wood towards evening with Dr. — we came upon a bright patch by the side of the road, causing the doctor to exclaim, "What a number of glow-worms!" On investigating the cause we found the light proceeded from a luminous oval ring of about the area of a florin. A bright spark was rapidly passing in and out of the ring, apparently in an excited state, i.e., as regards the owner of this spark. The luminous ring proved afterwards to have been formed by a centipede—a common looking yellow insect—and some phosphorescent matter was made to complete the ring. The spark was no doubt a winged male which had been attracted by the light. I am not sure that it is generally known that the male has wings. I have also seen that this sort of centipede is called electrica, whereas the light is phosphorescent. One of my sons who resides in India informs me that the poison of the centipede there resides in its feet, and that when it stings it draws its two rows of legs together and inserts



th claws in the flesh, and leaves them there, causing such excruciating pain as to allow the animal to make its escape without being perceived, resembling the bee and the wasp in this respect, but who leaves something more than the sting behind him.—*PHILODENDRON*.

*T. R. S.*—The large moth you forwarded is one of the *Sphinxidae*, *Sphinx convolvuli*, a not uncommon insect. The caterpillar feeds on the Bindweed.—*G. S. S.*

### HORTICULTURE IN MIDLOTHIAN.

THE Queen's Park, lying at the foot of the grassy slopes of Arthur's Seat, is a pleasant breezy down, much frequented by the Edinburgh folks and its visitors, but it has a treeless and bare aspect, for which the art of the landscape gardener has as yet done little or nothing. Gloomy Holyrood, lying at the city side of the park, is externally the least attractive looking of all the royal residences. It suffers by its close contact with the precincts of the Canongate, and has a neglected appearance, and boasts of no gardens or shrubberies worth mentioning. Its forsaken halls and ruined abbey have only an interest for the tourist, and it is hardly a matter of surprise that royalty shuns it. With the option of going to any of the palatial and pleasantly situated hotels in the town, no one would care to live in ancient Holyrood. A good deal might be done to improve the appearance of the palace by cutting it free of the slums that lie so close to it and paying a little attention to the grounds which surround it; but this does not appear to be considered, and perhaps is not worth while doing, seeing it is virtually uninhabited. What an unrivalled public park Edinburgh has in Arthur's Seat, with its sunny slopes, its deep shadowy dells, its crags and steepes, and its fine drive—everywhere presenting grand and extensive views—seaward, landward, and cityward.

Still on the spot Lord Marmion stayed,  
For fairer scene he ne'er surveyed.

One cannot survey the landscape from Arthur's Seat without Scott's inimitable lines just quoted occurring to the mind. The most interesting public garden about Edinburgh is of course the

**Botanical Garden**, but time and circumstances did not permit me to do it justice, otherwise there is much to see and learn in it; and Mr. Lindsay there is a perfect walking cyclopædia of botanical lore, and kind and courteous with all. It is a good while since I last saw "the Botanic," and a great change for the better is noticeable, especially in the houses where the extensive collection of plants looked extremely well, but, like most gardens devoted to botanical purposes more than to practical gardening, it contains an immense number of things of little or no interest to gardeners or the general reader. The garden is thickly wooded and contains many fine trees and shrubs, including some noble and mature specimens of the Irish Yew. The collections of hardy plants are also good and extensive, but the display was over at the time of my visit, and both cold and wet weather had done its worst.

**Nurseries.**—One could hardly go anywhere, indeed, either about the nurseries or private gardens round Edinburgh without noticing a very decided revival in favour of hardy plants. Nurserymen declare, however, that it does not pay them to maintain extensive and varied assortments of these. Only the most popular and pretty subjects are in demand, corroborating the statement that has been frequently made in *THE GARDEN* to the effect that there are numbers of species and varieties that are not worth cultivating in our gardens, and which are not cared for. This fact was impressed on my mind by a visit to the nurseries of Mr. Munro and Messrs. Ireland and Thomson at Craigleith. Mr. Munro, of the Abercorn Nursery, cultivates a considerable collection of species, and has an extensive and familiar knowledge of hardy plants, but those he cultivates for sale are not so numerous. At the time of my visit, late in September, there were many interesting things in flower, but the most showy subjects

were his *Asters* and *Violas*, or rather *Pansies*, for there is hardly any difference between the two now. His *Asters* were, without exception, the finest lot I have ever seen, except some beds I saw in the gardens of the Trocadero at Paris. Mr. Munro only grows two varieties—dwarf *Chrysanthemum*-flowered and *Victoria*, two which are in all respects the same, except that one grows 1 ft. or 15 in. high, and the other 4 in. or 5 in. The dwarf one makes the finest show. A large bed of it was so perfectly even that one might have laid a straight edge over the plants and touched all of them. There was not a "rogue" nor a blank in the lot except where plants had been lifted to pot for the market. Mr. Munro says *Asters* do not suffer in the least if potted when in full flower, and such plants are very popular for decorative purposes. The same plan is practised by the Paris growers on an extensive scale. Next to these in usefulness for autumn work were the herbaceous *Chrysanthemums*, which were in strong force, and completely covered with bloom and buds. To succeed those out doors Mr. Munro lifts and pots plants about this season, and flowers them under glass. There were a number of varieties, 16, I think, but the best are *Golden Gem*, *White Queen*, *Fred. Peel*, and *Gem*, the two last being of a crimson-maroon colour. Other noticeable and fine subjects in flower were *Helianthemums*, in several varieties; *Harpalum rigidum*, fine; *Acanthus mollis*, a noble looking plant; *Chelone Lyoni* and *obliqua*, *Anemones*, *Michaelmas Daisies*, *Rudbeckia purpurea*, *Veronica longifolia* var. *subsessilis*, a remarkably fine species in splendid flower; *Lychnis vespertina* fl.-pl., one of the finest herbaceous subjects in cultivation, the flowers being produced freely till late in the season, of a clear, pure white colour, and excellent for cutting for bouquets. The plant does well in pots also. *Gaillardias*, *Hieracium aurantiacum*, white *Scotch Bluebells*, and blue ones as well; *Phloxes*, single seedling *Carnations*, very pretty and showy in the bed; *Oregon Daisy*, a most disappointing looking subject; a golden *Pot Marjoram*, which Mr. Munro says is most effective in spring for carpeting purposes; *Iceland Poppies* of various shades *Papaver nudicaule*, *Pyrethrum uliginosum*, and *Senecio speciosus*, with fine pinky rose-coloured flowers, which continue to expand from July till October. In the alpine pit the *Edelweiss* was growing like a weed without any care, and Mr. Munro said there was no difficulty whatever about its culture. *Primroses* Mr. Munro grows extensively, and in a corner of the nursery was a grand mass of plants of *Primula denticulata*, which flowers abundantly at Christmas, and grows during the season like a Dock. The plants were remarkably strong. The nursery walls seemed to be devoted almost exclusively to *Gloire de Dijon* *Roses*, which produce abundance of flowers for market, but *Roses* on the whole are not a strong feature in the Edinburgh nurseries, and large importations are made from the south to meet the wants of customers.

**At Craigleith Nursery**, where a remarkably well-assorted collection of hardy and exotic plants exists, the place having only been laid out a few years ago after the pattern of the methodically-planted grounds of Mr. Parker, of Tooting, the things which pleased me most was the grand display of *Carnations*. When bedding out was at its height in Midlothian, it would not have paid to have devoted so much space to this or any other hardy subject, but here they are in thousands, although the varieties are few, but good, consisting principally of *Duke of Wellington*, which constituted nearly a fourth of the lot, *Royal Purple*, a fine kind of deep pure purple colour, and red, white, and scarlet *Cloves*. The *Duke of Wellington* is a grand variety of what I should call a brilliant orange-scarlet. It is grown everywhere about Edinburgh, and produces enormous quantities of flowers, and is undoubtedly a most distinct and valuable variety. A large quantity of single *Dahlias* from seed had grown very tall, and produced fewer flowers than usual, but they were fine, especially one pure white variety which could hardly be distinguished from a large *Honorine Jo-*

bert *Anemone* a little way off. The plants were growing in the deepest and richest soil in the nursery, and were unlike plants from the same seed grown in a poorer soil elsewhere as they could possibly be, the latter flowering far more freely and not growing above 18 in. or 2 ft. high, of bushy habit, and needing no stakes, whereas those at Craigleith were 4 ft. or 5 ft. high. A moderately rich and shallow soil suits this class of plants best. A long line of the *Matricaria inodora* at the entrance to the nursery had a fine effect, and bore an astonishing quantity of its clear and neat white flowers, numbers of which are cut for decorative purposes. What a fine autumn flowering hardy plant this is! In flower in a frame was the pretty new *Gaillardia* called *hybrida splendens*, yellow with a dark centre, and one which will certainly be regarded as an acquisition. The hot-houses contained equally judicious selections of all the most popular subjects. Of *Orchids*, there were large quantities of all the best kinds—*Cattleyas*, *Lælias*, *Dendrobiums*, *Odontoglossums*, *Calanthes*, *Cologynes*, *Cypripediums*, &c. The extension of *Orchid* culture in Edinburgh and the neighbourhood is remarkable. A love of these and hardy plants seems to be growing up fast, even among the smallest amateurs, some of whom have really fine collections. The large-flowered *Dendrobium formosum giganteum* was in fine flower here, and is a magnificent variety, the largest flowered of its class, and apparently a free flowerer as well, as numbers of pieces were either in flower or in bud. A house of *Crotons*, a thing not often seen, was a unique sight also. Mans of the plants have figured at Manchester showy and all were in fine condition. They seem to be taking the place of *Dracænas*. In the nursery quarters I was struck by the fine stock of fruit trees, Apples and Pears especially, fine, clean, and freely grown specimens. If we are to believe what was told us of the demand for the Lord Suffield Apple, I should say the raiser of it deserves at least as much gratitude at our hands as has been claimed for the discoverer of the "Resting Spore," for he has done more to improve the quality of our Apple tarts and dumplings and increase their abundance than any man living. The tendency of the present time is clearly to select and cultivate the fittest and best in all departments of gardening; and this is shown in the selection of nursery stock more than in any other direction now-a-days. There is much need for this in fruit culture.

**Hardy plants.**—Reverting to the subject of hardy plants in private gardens, an unmistakable change has set in in their favour. In gardens where hardy plants were a dead letter a few years since there are now fine collections, while bedding out has ceased to be the aim and end of everyone with an ambition to shine as a flower gardener. At Melville Castle, a most extensive and really interesting collection of hardy herbaceous plants and alpine has been recently got together, all neatly and correctly named and kept in good order. At the Marquis of Lothian's, Newbattle Abbey, bedding out has been nearly discontinued, and a large number of hardy subjects introduced, but planted for effect more than as a botanical collection. The weather was and had been wretched, but the hardy borders there presented a better aspect than any bedded out borders I met with in my travels. I have no doubt but that Mr. McKinnon and Mr. Priest, who preside so worthily over both these establishments respectively, could furnish *THE GARDEN* with interesting notes on the subjects that do well in that portion of the kingdom as well as on the culture of fruit, in which both are masters, judging by their productions, not to speak of *Orchids* and other things. In one garden, near Edinburgh, noted a few years ago for its formal parterres and borders, a great change has taken place. At the suggestion of the present gardener, and with the approval of his employer, most of the floral decorations have been effaced, and the ground laid down in grass, or planted permanently with something else. There seems, indeed, to be a general tendency to go in for hardy things, where only a few years ago the man was regarded as



rather behind the times who professed much regard for them, and plenty held them in undisguised contempt.

**Mr. Bushby's Grapes.**—The Reverend B. Bushby, of The Parsonage, Dalkeith, has been a successful Grape grower for some thirty years. His success has, indeed, been extraordinary, as many gardeners from north and south of the Tweed who have made pilgrimages to his little Vinery can testify. It is a span-roofed structure some 8 ft. high, about 12 ft. wide, and not very long. The Vines during thirty years, or thereabout, for it may be a little more or a little less, have never been replanted, never failed, never been "renovated," in the sense the word is used now, never ceased to bear fine crops annually, and have always been pruned on the close-spur system. As I stood in the Vinery, with my head nearly touching the top-most bunches of the roof, I could not help thinking what a good thing it would have been if some of our "long shoot" men, whose renovatory measures require such enormous scope and so many years, could have been there also. The Vinery is built of wood down to the ground, and the ventilation is of the simplest description. The border was not made of loam from the field, but was detached from the kitchen garden quarters; neither is it very deep, and I believe I am correct in stating that it was never artificially drained. It has been extended at two or three different periods, and is now about three times the length of the Vine rods in width. This and the feeding, to be afterwards mentioned, is the secret of Mr. Bushby's success, not to mention his own good management, for he does nearly everything about the Vines himself. I first saw his Vinery in 1856, when it was bearing a grand crop (the sorts are mostly Muscats of Alexandria). I saw it annually, and often for nine years after that period, and from that time till now I have seen it at intervals, and during the whole time the crop has hardly varied in its excellence. The crop this year is one of the heaviest and best I have seen the Vines carry, and would be regarded as quite excessive by any Grape grower. I estimated that each Vine was carrying at least 1½ lb. to the foot run—probably more. The bunches were all large, perfectly set, and not a bad berry in any of them, and finishing admirably, while the foliage was as green and healthy as could be desired, a feature of the Vines, for they always carried their foliage well. Going out of this Vinery, I said, "It is always the same practice, I presume, Mr. Bushby?" His reply was "Yes; the crops have always been pretty much like the present one, and I always put a good layer of cow manure on the border every autumn; to that I attribute my success and the occasional extension of the border." I saw equally fine Grapes in various other gardens in the neighbourhood, but compared with Mr. Bushby's the Vines did not carry half a crop. Mr. Bushby's canes are trained about 2 ft. asunder, and have always been so trained. He has in the above period rooted out two plants to make room for a "Scott's" Muscat, recommended to him as a superior variety, but under Mr. Bushby's culture it is not distinguishable from the others now. The Vinery, I have always thought, stands in a good position as regards the light; the garden is open on all sides, and I have seen the temperature of the house as high as 90° by sun heat before 6 o'clock in the morning at midsummer, and it did not fall below that figure till 9 o'clock at night. That the long light has much to do with the health of the Vines there can be no doubt. I have given Mr. Bushby praise because he deserves it. I know of no Grape grower who has approached his success, aided even by means and appliances quite inaccessible to him. The weight of Grapes cut from his little Vinery during any seven years of the thirty they have been growing and bearing has not been surpassed, in proportion, I am confident, by any Grape grower I have heard of, and for a longer period he probably beats any example on record.

**Standard Peaches at Whitehill.**—Having seen an account of these trees in a contemporary, and having a conviction that standard trees will take the place of trained ones for late crops

under glass, thus saving much labour and expense in their culture, I determined to see the trees at Whitehill, and went accordingly. Mr. Leyden, the gardener there—and a thoroughly practical man, as one can see from everything around—was very willing to furnish me with all the information in his power concerning his trees. There are really only four large trees; the others are young comparatively. There are also a large number of trained Peach trees in the houses, all well managed, but Mr. Leyden gave the preference to the standards, which he said had not failed during the past ten years he had been there to bear heavy crops of fine fruit. One tree, some 12 ft. in diameter, bore last summer 600, or close upon 50 dozen fruit. The trees bore altogether 2500, not inferior, but good fruit. To the enquiry whether the standard or the trained trees did best, Mr. Leyden said the "standards most decidedly; they bear both the most and the finest fruit, and are ten times less troublesome to manage." He had indeed no doubt in his mind regarding the advantages of the system. The trees were somewhat umbrella-shaped in their heads, exposing a large surface to the light, and were not trained in any way. Both foliage and wood were fine, and the buds prominent and well developed. A quantity of the fruit from the standards found its way into Edinburgh, I afterwards learned, and those who had it told me that it was excellent in every way, and above the average in quality. From what I saw at Whitehill I am more convinced than ever that the plan is a right one, and would recommend it without hesitation. Several gardeners near Edinburgh have adopted the plan within the last few years, and the trees promise to do well.

**Strawberry farms in the north.**—Of late Strawberry culture for market has been extending in Scotland, and notably in Fife and Aberdeenshire. It is said that it was the success of the Strawberry farms in Scotland that suggested the idea of a more general extension of the culture of the Strawberry to Mr. Gladstone, who recommended it as an industry a year or two ago in one of his addresses. I did not see the Fife farms, but was told they were wonderfully productive and remunerative. From one garden on the south shore of the Forth, however, which I saw, the proprietor told me the gross receipts were about £80 per acre, a large proportion of which was nett gain. The Fife farms yield, it is said, a profit of nearly £40 per acre, and the crop is said not to be a precarious one under good management and culture. I heard reports of the value of stock and good-will of such farms such as might make any agriculturist's mouth water. The birds are the greatest pests and do much damage, the only effective means of protection being herd boys employed from sunrise to sunset. It is said also that Strawberry culture pays better in the north than in the south, and that those who produce the earliest and the latest supplies succeed best. Strawberry growing is one of those industries which it is said does not suffer much from foreign competition, the fruit being of a perishable nature; consequently the home grower has it his own way, and sellers declare the supply is as yet not equal to the demand.

**Closed parks in Scotland.**—When Hugh Miller, the geologist, first came from the Highlands to work as a stonemason at Niddrie, near Edinburgh, he was very unfavourably impressed, as he tells us in his "Schools and Schoolmasters," by the almost universal practice among landed proprietors—in that part of the lowlands at least—of enclosing their parks within high walls, thus preventing the public not only from access to them, but even from seeing into them, and he discusses the evil effects of such exclusiveness upon the common people; thought it tended to weaken their patriotism and engender an ill-feeling between classes. He complains bitterly how, in his rambles as a geologist, he was compelled to confine his peregrinations to the high ways, save in a few exceptional instances in which he was permitted to trespass on forbidden ground. What impressed Hugh Miller so unfavourably has also struck many an English traveller in Scotland as

well, for there is a remarkable difference between the two countries in this respect. In England, the people have never been shut out from the fields and woods as they are in Scotland, and it is an exception to find a demesne in England that is not more or less free to the public all the year round. Small people imitate their betters in the north, and multitudes of small places are shut in by ugly walls which are always pushed as near to the confines of the high road as possible. On large estates some of the finest scenery in the neighbourhood is so completely shut out from view in this way that it is said people living in the neighbourhood have never seen it all their lives. A notable example of this is to be found in the valley of the Esk, near Lasswade, not far from Hawthornden, where a long stretch of the most romantic scenery on the river is completely shut out from view by a high stone wall which runs along the side of the public road for miles. The road is on the route of the tourist, but, whether riding or walking, he cannot see anything of the landscape. This boundary line is far removed from the mansion of the proprietor, who has long resided elsewhere, and his gates are rarely or ever opened to the visitor, "except on business." Plenty or even worse examples could be named, but we should not like to assert that in all cases the purpose of the proprietor of the land has been simply to exclude the people. It is the custom of the country as much as anything else. The laws of trespass, too, are more strictly enforced in Scotland than in England, and an Englishman misses the numerous public bye-paths that afford access to the fields and woods in his own country, and which are such a pleasant feature as well as convenience everywhere. There are no commons in Scotland in the right sense of the word, and the exigencies of agricultural economy have pared even the road-sides and lanes down to the barest limits, so that the pedestrian is preforce compelled to keep the "crown of the causeway." The road-side commons in rural districts in the south, on the other hand, are of prodigal extent comparatively, and we hope the day is far distant when they will be curtailed, or cease to be the haunt of the school children in search of brambles and wild flowers, or even an occasional band of gipsies, with their tent and its appurtenances. These poor Ishmaelites of the road have long been compelled to strike their tents in the north, and herd together under civilised roofs in the village of Yetholm on the borders, where one must go to see a Scotch gipsy. They are as rare an object elsewhere in Scotland as an Indian in his war paint is in New York. W.

## BOOKS.

### A YEAR IN FIJI.\*

In this book Mr. Horne has gathered together a large mass of valuable information in reference to these islands. In 1877 he accepted an invitation from Sir Arthur Gordon, then governor, to visit them for the purpose of more fully examining their vegetable resources. The number of islands comprising the Fiji group is over 200, and their aggregate area is estimated at about 7400 square miles. Vita Levu, the largest island, has an area of about 4100 square miles; Vanna Levu, 2432; Taviuni, 217; and Kadavu, 124 square miles. The other islands are of small extent—from Koro, 57 square miles, downward. They lie wholly within the Tropics, and most of them are mountainous, rising abruptly from the sea. For a tropical climate it is a tolerably healthy one for Europeans, and the inhabitants are now quite civilised. Mr. Horne states that many of the grown-up people had been taught to read and write by the Wesleyan missionaries, that a church and school exist in every native town, and that most of the rising generation can read, write, and cipher to some extent. We can only find room for the follow-

\* "A Year in Fiji, or an Inquiry into the Botanical, Agricultural, and Economical Resources of the Colony." By John Horne, F.L.S., &c. (Edward Stanford, Charing Cross.)



ing few extracts, and must refer those interested in these islands to the book itself.

FERNS abound everywhere, from the sea level to the highest mountain tops, in the hottest and oldest parts, in sunshine and shade, on the poorest and richest soils, and in the driest and wettest parts. They are of all sizes, from the tiny *Hymenophyllum*, scarcely  $\frac{1}{4}$  in., to the gigantic *Alsophila*, tree Fern, having a trunk 50 ft. or more in height, surmounted by a crown of beautiful feathery-looking fronds. The number of distinct species and varieties of Ferns and allied Lycopodiums and Selaginellas indigenous to Fiji amounts, as yet found, to 246. I have no doubt the number will be raised to about 300 species when every part of the islands have been explored. Some of these Ferns are magnificent. The *Dicksonia moluccana* has fronds of a triangular shape, measuring 12 ft. in length and 10 ft. in breadth at the base. One of them would cover an area of 60 superficial ft. This gigantic leaf is supported by a stipe or stalk 6 ft. in length and 3 in. in circumference. As a contrast to this may be mentioned the tiny fronds of the Filmy Ferns, *Hymenophyllums*, and some species of *Trichomanes*, scarcely one-eighth of an inch in size. The delicate fronds of a new species of the last named genus attain a height of  $2\frac{1}{2}$  ft. Most beautiful they look when seen with the rain-drops hanging like beads of crystal from the points of their finely-divided fronds. Not less pretty in this respect are *Hymenophyllum javanicum* and *dilatatum*, generally found on the sides of streams, shaded from the sun by the overhanging banks and lofty trees.

The Davallias found in Fiji are worthy of notice. However, the most beautiful of them are *hymenophylloides* and *Blumeana*. The latter is without doubt the prettiest Fern in Fiji. Both are found on the loamy banks of streamlets in densely shaded woods. Their fronds seldom exceed 1 ft. in height, are of a pale green colour, finely divided, and their membranous texture gives them a pellucid crystalline appearance, especially when they are covered with dew. In the dry parts of Fiji one of the silver-leaved Ferns (*Cheilanthes farinosa*) may occasionally be found growing in the crevices of the rocks, and its pretty relation, *Cheilanthes tenuifolia*, which, with *Pteris ensiformis* and *Pteris geraniifolia*, abounds in dry grassy fields, and comes up after the rains. While festoons of *Lygodium reticulatum* *va kalou* (holy creeper), and tassels of *Lycopodium Phlegmaria* and *nummularifolium*, to 5 ft. in length, hang from almost every tree, the surface of the ground below is clad with one dense mass of beautiful *Selaginellas*, some of which attain a height of 4 ft. or 5 ft.

ORCHIDS.—Of these there are not many different species in Fiji, but the various members of several genera are well represented. A species of *Calanthe*, having a spike of white flowers spotted with red, which grows among Grass, is common and beautiful. Another species of the same genus, with snow-white flowers, abounds in shady forests in wet and dry localities; and a third, having beautiful orange coloured flowers, sessile and clustered together on a short spike like the flowers of a Hyacinth, was found in one place near the top of Voma Peak.

Several species of *Dendrobium* are worthy of cultivation; these are *Mohlianum*, *Tokai*, *Gordonii* (n. sp. Le M. Moore), and *Hornei* (n. sp. Le M. Moore). The latter was found in the island of Rabi, growing on a tree on the sea-shore, where it was occasionally bathed in the salt spray of the breaking waves. *Dendrobium Gordonii* was found in Samoa, growing on a *Pandanus* tree in a swamp, in the island of Upolu, and also on an old *Dakua* tree (*Dammara vitiensis*) near the Blackwater (Wai ni Loa), in the interior of Vitu Levu.

THE FLORA of Fiji is essentially tropical. A few species belonging to a temperate one may, however, be met with on the mountain tops. Its general character is Polynesian, with some affinities to the flora of Australia and the Malay Islands on the western and north-western sides of the group. These resemblances decrease towards America on the east, and the northern parts of New Zealand on the south.

**The Herefordshire Pomona.**—The fourth part of this admirable work comes to us enriched with many plates of the fruits most commonly grown, with good wood-cuts and with much trustworthy matter of interest to fruit growers. We hope to notice the work at greater length, and in connection with the other numbers, and only now say that it is extremely well produced and edited. (London: D. Bogue. Hereford: Jakeman and Carver.)

## OBITUARY.

### MR. J. C. NIVEN.

On Sunday last, October 16, Mr. James Craig Niven, for many years curator of the Hull Botanic Gardens, died at his residence in the gardens, after a long illness, at the age of 53 years. Mr. Niven was born in 1828, of Scotch parents, in Dublin. His father, Mr. Ninian Niven, held for many years the position of curator of the Royal Dublin Society's Botanic Gardens at Glasnevin. Mr. J. C. Niven was educated in Dublin with a view to entering the medical profession, disliking which he commenced his career in his father's profession at the Royal Botanic Gardens, Belfast, in 1843. After two years' residence he went to the Duke of Buccleuch's gardens at Dalkeith, and in 1847 he had moved to the Royal Gardens at Kew. In 1848, Mr. John Smith, the ex-curator of Kew, informs us, he was appointed foreman of the herbaceous department, in which he took great interest. He was assiduous in collecting wild plants for the collection then forming, and for that purpose took journeys into various parts of the country. He drew up a complete catalogue of the herbaceous collection, arranged according to the Natural System, which was printed under the title of "Catalogue of the Herbaceous Plants in the Royal Gardens of Kew." This was used for the purpose of exchanging with other botanical establishments. It consisted of 62 octavo pages and enumerated 4878 species, of which there were 536 Gramineæ, Cyperaceæ, and Juncaceæ. Previous to this he had officially attained the title of assistant-curator.

At the close of the year 1852 an application was made to Sir William Hooker, director of the Royal Gardens, by Mr. Spence, the entomologist, for a curator for the Botanic Gardens at Hull. This appointment was offered, and indeed urged upon, Mr. Niven by Sir William Hooker, and he entered upon his duties in January, 1853. Mr. Niven succeeded within twelve months in remodelling the garden, and after the first two or three years, during which time the curator had to contend with a deep-rooted spirit of exclusiveness on the part of the committee of management, a thorough reorganisation of the institution took place, resulting in a steady increase of its popularity, and in the subscription list being nearly trebled. The collection of plants also rapidly increased, till in 1866 the catalogue of hardy plants then in cultivation in it numbered upwards of 6000 species, and took rank as one of the most extensive in the country. During his stay in Hull, Mr. Niven delivered upwards of 38 courses of botanical lectures in connection with the Hull School of Medicine, the Chemists' Association, the Art and Science Department, the Philosophical Society, &c. In the formation of the new company, and in the arrangement of the present new Botanic Gardens, Mr. Niven took a very prominent part. He has, as it were, "died in harness," and has terminated a connection with Hull which has extended over many years, and which has been a source of the greatest profit and pleasure to the majority of its inhabitants. Not only will his loss be felt at Hull, but also by the horticultural public generally. In addition to

his knowledge of hardy plants, which was most extensive, his taste in designing gardens was of a very high order, and on matters of this kind he was frequently consulted. In him, too, garden literature has lost an able supporter, and more especially THE GARDEN, to the pages of which he has since its commencement been a valuable contributor. To his undoubted talent in these respects he also added an affability of manner which made him many friends.

PROVOST RUSSEL, Mayfield, Falkirk, N.B., died on Monday last. He was well-known among horticulturists chiefly for his celebrated collection of Orchids which is, or was, one of the finest in Scotland. Besides Orchids his garden is also famous for Ferns and other stove and greenhouse plants, hardy trees, shrubs, Coniferæ; altogether a most interesting place as far as plants are concerned, tender and hardy.

## GARDEN APPOINTMENTS.

CANFORD, Wimborne, Dorset, Mr. D. Williams.  
SOMERLEY, Ringwood, Hants, Mr. G. Richards.  
FLOORS CASTLE, Kelso, Mr. A. Mackellar.  
GREENLANDS, Henley-on-Thames, Mr. H. Knight.  
BROOM HOUSE, Fulham, Mr. J. Wilson.  
FRANKLANDS, Burgess Hill, Mr. A. Burgess.  
PIERREPONT, Farnham, Surrey, Mr. J. Turner.  
OWSTON PARK, Doncaster, Mr. T. Gardiner.  
FERN HILL, Thorpe Hamlet, Norwich, Mr. T. Lowns.  
CAVE CASTLE, South Cave, Yorks, Mr. N. Coppin.  
HATTON, Feltham, Middlesex, Mr. J. Gardner.  
BLAKE HALL, Ongar, Essex, Mr. W. Bailey.  
WIDBERRY HILL, Ware, Mr. F. Parsons.  
HIGHFIELD, Bickley, Kent, Mr. E. Wilson.  
CHELSTON CROSS, Torquay, Mr. J. Hobbs.  
HEMSTED PARK, Staplehurst, Mr. R. Perkins.  
RUSHMORE, Salisbury, Mr. R. Stanley.  
SHENLEY HOUSE, Stony Stratford, Mr. W. W. B. Ward.  
BALRATH BURRY, Meath, Mr. W. Kettlewell.  
GAWTHORPE, Burnley, Lancs, Mr. S. McMaster.  
BROCKLEY HALL, Brockley, Mr. G. Hester.  
SOMERSET LODGE, Wimbledon, Mr. S. Burge.  
THE MOTE PARK, Maidstone, Mr. J. Robinson.  
FLORIAN, Torquay, Mr. J. Jordan.  
BELHUS PARK, Aveley, Mr. J. Gadd.  
THURCROFT HALL, Rotherham, Mr. J. Willis.  
EDEN HALL, Penrith, Mr. G. Cuckney.  
MOUNT OSWALD, Durham, Mr. R. Irwin.  
ROSE HILL, Carlisle, Mr. R. Jackson.  
MORTON HOUSE, Carlisle, Mr. W. Murray.  
DOVENBY HALL, Carlisle, Mr. Goodall.  
SAUMAREZ PARK, Guernsey, Mr. W. Cruickshank.  
COPPINS, Iwer, Mr. J. Fletcher.  
COLWORTH HALL, Sharnbrook, Beds, Mr. A. Waters.  
WOODSIDE, Paisley, Mr. Wm. Martin.

Names of plants. — F. C. Barker. — *Viburnum Opulus*. — F. T. Drummond. — 1. *Sedum glaucum*; 2. *S. monstrosum*; 3. *S. Lydium*; 4. *Cacalia cylindrica*. — Edward. — *Hemanthus coccineus*. — W. Cash. — *Pleione lagenaria*; others next week. It is unusual for the *Pleione* to flower without leaves. — F. R. M. — *Eunymus europæus* (Spindle Tree). — A. German. — *Rhamnus hybridus*.

Names of Fruit. — J. K. — 1, not recognised. Distinct from any sort grown in the Royal Horticultural Gardens at Chiswick; 2, King of the Pippins; 3, Winter Pearmain; 4, Cox's Orange Pippin.

## COMMUNICATIONS RECEIVED.

G. T. W. — R. McC. & Co. — A. G. — R. C. — W. G. — R. B. — J. C. B. — W. H. F. — J. C. C. — J. C. C. — G. S. S. — H. H. C. — R. J. — F. C. B. — W. & Co. — J. S. — W. B. — M. N. — T. B. — R. M. G. — J. Van V. — G. C. — D. E. — D. L. — A. H. — F. — C. — E. B. — E. H. — W. T. — J. G. — L. — Peregrine. — Old Mortality. — J. H. — R. S. — W. S. — R. C. — V. — J. B. — W. J. L. — A. M. — J. G. V. — J. M. — R. D. — D. T. F. — T. J. — W. E. — Dr. N. — A. P. — T. B. — J. G. — T. D. — F. T. D. H. — R. N. — J. S. — N. — F. S. — (No name, *Polygonum* blooms). — T. G. — H. H. C. — H. H. C. — G. S. — W. C. — E. V. — J. C. C. — J. C. C. — A. B. H. — J. C. S. — G. S. — J. R. — R. P. — D. T. F. — R. D. — R. G. — T. J. L. — G. R. — T. C. — W. H. — E. A. — W. C. — J. & Sons. — T. H. A. H. — J. T. — J. S. — R. M. G. — J. S. & Sons. — J. B. & Sons. — J. C. S. — H. H. — D. O. — E. M. — D. & Co. — J. G.



No. 519. SATURDAY, OCT. 29, 1891. Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare*.

## COTONEASTERS.

COTONEASTER SIMMONDSI is now looking very fresh and bright both in leaf and fruit. Mine is planted out on rockwork, but the fan-shaped formation of the branches clearly points out that its most suitable place is against a flat surface. The leaves are deciduous, the scarlet berries remaining long after the leaves have fallen. The storm on October 14 thinned the berries very much. I propose trying this variety on a wall facing the north, an aspect that so well suits that common, but very beautiful variety, *C. microphylla*. Of this kind there is abundance in this locality, and tourists who have visited the Penryn slate quarries cannot fail to have noticed what an object of beauty it presents on the walls of the quarrymen's cottages, rambling over the porches, or running up one side of a wall and down the other. Its favourite position is, as some few plants grow, downwards. I must avow a great predilection for *C. microphylla*. One of my boyish and most lasting impressions is of an irregular bank of earth and enormous sandstone blocks, which were thrown up in picturesque confusion in Birkenhead Park, planted entirely with this Cotoneaster. It was beautiful in flower, still more beautiful in berry, and naturally and wildly pretty at all times. I have two other kinds, *C. nummulariaefolia* and *C. vulgaris*; the former is evergreen and of a very light green tint, but has neither flowered nor fruited with me; of the latter I shall only observe that it is one of our rarest local plants. EDWIN JACKSON.

*Llandegai, Bangor.*

## THE EASTERN PLANE.

IN THE GARDEN (p. 420) "G. B." complains of the rubbishy varieties propagated instead of the true Eastern Plane, and certainly both foresters and nurserymen are to blame for this. The Oriental and Occidental Planes are both clearly described by Loudon in the "*Arboretum Britannicum*," and the accuracy of his description has been confirmed by later authors, such as Selby, Brown, and Grigor. Mr. George Berry, of Long-leat, has very recently given in your columns a very full and interesting account of the Plane trees and their distinguishing marks, and he recommends the Oriental Plane as the best for planting in this country. He has omitted to notice the colour of the petioles and the size of the stipules as distinctive marks, although distinctly mentioned by Loudon, Selby, and Brown, that the petioles and leaf-stalks of the *Platanus orientalis* are green, and that those of *Platanus occidentalis* are purplish red; if this holds good, it would go far to help people to identify particular trees. Mr. Berry states that the trees in the parks and squares of London are mostly Occidental or Western Planes, but when the subject was mooted some years ago, it was the opinion of several good authorities that many were *Platanus orientalis acerifolia*, the leaves of which are somewhat like those of the *Platanus occidentalis*. As Mr. Berry has recently given close attention to the matter, perhaps he would kindly say what he thinks about this. I am glad to see his remarks on the Plane trees on the Thames Embankment. They were certainly too thickly planted, and the thinning, having been too long delayed, will now be doubly troublesome and expensive.

WILLIAM BAXTER SMITH.

## OLD-FASHIONED GARDENS.

THERE is, as we all know, a great difference between the ideas of people who laid out gardens a hundred or two hundred years ago and those of our more modern landscape gardeners. The old style is formality, the new as much variety as possible; every walk, border, and tree in old gardens is in straight lines and right angles—everything being laid out in the avenue style. The new grounds its principles on deception, so much so that a very small space is made to appear three or four times as large as it really is. The extent of the ground is carefully hidden with shrubs; you must on no account be aware where walls or fences are. Clumps of shrubs are introduced here and there with walks winding about, so that you may be persuaded into the belief that you are taking a wide range, whereas you are probably going back to the point from which you started. There must also be a good deal of turf in the new style; the old gardeners would have considered that man demented who laid out gardens so small as some are now-a-days with all the effects of park scenery. Lord Bacon, who we all know was a man far in advance of his time, in his essay on gardens, says a garden should not be less than thirty acres, and, what is singular, he appears to be the presiding spirit of the present aims in gardening. His essay appears only speculative, yet he advocates planting flowers and shrubs for each of the four seasons, naming them in succession. A Heath garden he wants and plenty of Grass, for he says, "The green has two pleasures: one, because nothing is more pleasant to the eye than Grass finely shorn; the other because it will give you a fair alley in the midst, by which you may go in front of a stately hedge, which is to enclose the garden." Every gardener ought to read that charming essay; all the favourite flowers and trees of that period are mentioned. I have read that essay more than once, and must therefore exempt Lord Bacon from being old-fashioned in his ideas.

The absolutely formal appears to have been more the style of a later period, and many of the gardens must have undergone changes towards variety, where it was possible to do so. I knew, however, an old-fashioned garden in which the proprietor determined to institute a complete reformation. He set to work, but met with absolute discomfiture. He found that a large portion of the walks or alleys, as Lord Bacon calls them, were deep trenches filled with very heavy rubbish, and it appeared as if at some period antecedent a house had been burnt down and the burnt refuse stowed under ground, so that the cost attending alterations would have been very serious. He therefore was constrained to "let well alone."

Many years ago I visited Lord Bacon's house at Gorhambury, near St. Albans, but I do not remember noting that his precepts had been carried out there. There is more of the old fashion in Sir Walter Raleigh's at Sherborne, and I think the summerhouse where he is said to have smoked the first English pipe, and where, "thinking him on fire," his servant dashed a pot of ale over him, is still standing. I also know an old-fashioned garden in Ireland; it was laid out more than 100 years ago, and is precisely in the same state as at first. I suppose some trees and plants, such as Roses, have been worn out and replaced, but they grow in the same places, and, with the exception of one or two modern plants, a *Wistaria* and a *Cotoneaster* against the wall of the house, I do not know of any change. The garden is perfectly level, and is about 200 yards long by something less wide; a broad walk goes down the centre, and at the end of it is a pretty summerhouse with Honeysuckle and Ivy growing about it. There are straight walks

down each side, leaving a 4-ft. bed all the way between the walk and the walls. Down the central walk on each side are Apple trees at intervals of about 10 yards, and between them are regular clumps of Hollyhocks and room besides for other flowers, especially Carnations, and nowhere do the latter grow more luxuriantly. About one-fourth of the ground near the house consists of flower borders laid out geometrically from a central circular bed—a formal affair, but when filled with bloom in summer a picture. All the flower borders are surrounded with Box edging, and it has often puzzled me how it has been kept so dwarf. In no place is it more than 8 in. high, so that the clipping must have been an affair of great patience. In these beds were grown all their choice flowers—Persian Ranunculuses, Polyantheses, Tulips, Hyacinths, Auriculas, and, long before they were well known in England, Japan Lilies—not auratum, but a dwarf white kind which some friend had brought from that country. Great care was always paid in old times to the Cabbage Rose long before French Perpetual and Tea Roses were known; except Moss Roses, I do not remember any other kind in that garden. They were trained against the wall and became great trees; their cultivation was an important point in the annual concoction of a pot pourri, or sweet pot. As the flowers became full of bloom they were carefully gathered and the leaves spread out on the floor of the summerhouse till dry; they were then mixed with certain other flowers and leaves, such as those of Jasmine, sweet-scented Verbena, and Oak-leaved Geranium. Spices were added and the mixture put into china vases, well closed, but occasionally opened to allow the perfume to escape. No other Rose except the Cabbage has, I believe, scent sufficient to make this compound, and that remains for a long time, though it was renewed annually. Large quantities were gathered yearly, and when dry placed at the bottom of various clothing closets and drawers.

Another important harvest was the roots or tubers of the medicinal Rhubarb; these were taken up, I do not remember at what season, but I know there is a right and a wrong one. They were hung up in a room till dry, and were used in various ways as medicine.

Another harvest was that of the Lavender, of which there was always a good length forming a hedge; this was gathered when in full flower and sent to a chemical distiller; several quarts of fine lavender water were then obtained every year. I have been told that Lavender is best grown in this way, as otherwise it becomes very troublesome in its growth, and requires renewal every third or fourth year; grown as a hedge, all the plants support each other, for they have a very obstinate way of twisting themselves about.

I have known four proprietors of this garden. The first died forty years ago in his eighty-fifth year, and all of them were delighted with the old-fashioned place and flowers.

From the summerhouse before mentioned, the old gabled house, partly covered with Ivy and climbing plants, gives one the idea that we are looking at some old English manor house, for this kind of scene is oftener to be found in England than in Ireland. The old-fashioned look of places is only arrived at by carefully making changes, and steadily repairing damaged roofs or walls, for if allowed to go too far they must come down, and the character of the place is soon altered. Nothing in this house or garden appears to have been changed to my knowledge for these fifty years, for so long have I known them.

W. T.

*Dorset.*



## HYPERICUMS.

IN reply to Mr. Archer-Hind's question about these plants in your last issue (p. 422), although I quite agree with him that the variety usually known as *H. patulum* is not the plant described and figured by Thunberg in his scarce work on Japan plants, yet I cannot assent to his suggestion that it is *H. uralum*, as I believe it to be distinctly intermediate in size of bloom between *H. oblongifolium* and *H. uralum*, or *nepalense*. I received this so-called *H. patulum* several years ago direct from its introducer, M. Oudin, of Lisieux, in France, to whom seed of it had been sent, I believe, from Japan, and when it bloomed, and I found it to be quite distinct from any variety I had, I suggested that its proper name should be henceforth either *H. Oudinense*, after its introducer, or *H. intermedium*, but my suggestion was not adopted, and the plant continues to bear its erroneous name. I find it also to be both hardier and more free flowering, as well as larger flowered, than *H. uralum*. There is, however, a far finer variety of this beautiful family of shrubs, which from not being quite hardy is as yet extremely scarce; indeed, I only know of one person besides myself (to whom I am indebted for one of the small plants I have) who now possesses it. I believe it to be a natural hybrid between *H. oblongifolium* and the herbaceous *H. calycinum*, or Rose of Sharon. Its blooms are nearly, if not quite, half as large again as those of *H. oblongifolium*, and though distinctly shrubby and hard wooded, it produces its blooms on much more pendulous branches than that fine upright growing variety. It was described some time ago in your columns by Mr. Burbidge, of Dublin, under the evidently incorrect name of *H. longifolium*, as its leaves are by no means long. I think a more appropriate name for it would be *H. oblongifolium splendens* or *magnificum*.

W. E. GUMBLETON.

## THE ROSE GARDEN.

## THE ROSE IN THE GARDEN.

THAT the queen of flowers should have a garden or plot to herself, where her majesty may not be incommoded by the common herd, has long been insisted on by those who grow the Rose for the sake of exhibiting cut blooms—specimens of what the gardener's art can do; but to those who desire rather to have a garden beautified by the presence of the Rose in its greatest luxuriance and beauty, as far as effect goes, there is yet considerable doubt as to the feasibility of such a thing, and difficulty in carrying out such a plan when begun. The Rose of modern gardens is such an artificial compound, so entirely the result of years of selection and interbreeding, that it will not show itself in full beauty except under the most favourable conditions, such as we cannot always give it in the mixed garden. It will, therefore, be well to consider how we may best arrange the various members of this favourite family, so that the original species may be found in our gardens as well as the beautiful hybrids and varieties raised therefrom.

Roses have many points of interest, some of which have been forgotten until lately. Besides the beauty of their flowers, some species have such beautiful hips that, were it for no other reason, they are worthy of a place in our gardens. It seems to me that, as no garden is complete without the Rose, the Rose should be found in each variety of garden; and where can a more fit place for the natural species of Rose be found than on the banks that compose or surround the rock garden? The climbing varieties should grace our walls, shade our arched walks, festoon our trees, clamber up poles, or spray over the waste spaces. The Tea Rose should have its sunny bank or warm wall, and

the Hybrid Perpetuals occupy the special plots provided for them. In this way only can we do justice both to our gardens and our Roses.

**Of species of the Rose.**—No one who has seen the dainty *Cistus*-like spotted blooms of the yellow *Rosa berberifolia* and its glossy leaves and dwarf growth will forget to give it the sunny and somewhat dry situation in the rock garden that suits it best. The single Macartney Rose (*Rosa bracteata*), with its large white single flowers and orange stamens, is even more charming in foliage and more vigorous in growth, though less hardy, and deserves a wall when it can be given. Its Japanese variety—called *R. Camellia*, if I mistake not—is equally attractive; but the palm for hardiness and decorativeness in exposed situations must be given to another Japanese Rose (*Rosa rugosa*), a Rose which is exceedingly hardy by the sea as well as inland, fears not the bitterest frost, and braves the keenest winds. It is now well known; both its white and deep purple-flowered varieties are to be seen in many a garden, and its large and handsome fruit is seen in autumn, contrasted with the latest blooms, reminding the spectator of the Orange tree, which alone used to enjoy the reputation of glorying in flower and fruit at the same time. Persia, which has sent us *R. berberifolia*, also has given us the Persian yellow; but it is from the Levant we obtain that most perfect of all Roses in colour and shape, *Rosa sulphurea*, the despair of many a cultivator. Its glaucous blue leaves and purely golden globes of bloom can never be forgotten by those who have seen it in full beauty, and there is no doubt that there is more chance of flowering this beautiful low-growing Rose where there is reflected heat and sunshine from rocks than in the Rose garden. *Rosa lutea*, the single yellow, and *R. punicea*, the brilliant Austrian Brier, are also suitable rock garden Roses. *Rosa alpina* is sometimes so richly coloured as to adorn any situation, and has very handsome lips. *R. pyrenaica*, a tiny form of this species, is a favourite already in many places, and has long, handsome fruits to succeed its short-lived little flowers. The Scotch Rose (*R. spinosissima*) with its white flowers is not unworthy of a place in the wilder rock garden, and its double varieties thrive in cold and shaded situations where no other Rose would exist. The Sweetbrier deserves a place also by it for the sake of its delicious fragrance and its bright hips. Another Japanese Rose, but lately introduced, the Bramble Rose (*R. polyantha*), may be planted for its distinct habit and thyrsoid heads of small white flowers; but it is much to be hoped that a greatly superior Chinese variety, with larger flowers and growth, and more golden yellow stamens, may soon be introduced, as in its native country it thrives anywhere and stands severe frost. The little fairy Rose, *R. Lawrenceana*, is very pretty among rockwork, where it gains the needful warmth and protection. *Rosa microphylla*, quaint in flower and fruit, and its double form will give a good effect in the wild Rose garden where there is some shelter.

**Climbing Roses.**—If we look round in Continental gardens where not one tithe of the labour and care lavished on English gardens has ever been bestowed, but where a warmer climate and more constant sun brings out luxuriant growth in many things, we see such arcades, bowers, pillars, and climbing masses of beautiful Roses on all sides as to make one feel discontented with our beautiful individual blooms and absence of these luxuriant masses that neither require nor obtain any special care whatever from one year's end to the other on the Continent. If, as is only too true, the varieties of the Rose that produce such glorious effects in

foreign gardens are not hardy enough for us, why do we not try to raise new varieties that shall resist our cold and changeable seasons? Surely there is choice enough of species and varieties in a plant that ranges from Kamtschatka to India, among which we may find something that shall be the parent of hardy climbing varieties, as beautiful in our climate as the Noisette and indica major Roses are in the south of France and elsewhere. We have *R. sempervirens* and several garden varieties, such as *Félicité Perpetuelle* and others that will climb a pillar or shade an arcade. We have the Ayrshire Roses, *R. arvensis* and its varieties, such as *Rampant*, *Ruga*, &c., which are very charming in their way, but only bloom in summer, as do the varieties of the Boursault Rose (*R. alpina*). They are all quite hardy and of vigorous climbing growth, but they do not satisfy those who love the Hybrid Perpetual, the Noisette, or the Banksian Rose. We have the continuous blooming *R. rugosa*; have we the beautiful *R. sinica*, the parent of the so-called large white Banksian Rose *Fortunei*? There is, too, the semi-double yellow *R. Fortunei*, also from China. Cannot some hybrids be raised from these and the *sempervirens*, *alpina*, or *arvensis* species? or should we use the *R. canina*, the common Dog Rose for a parent? There are several hardy American climbing Roses little known that are of merit.

Surely if the great Rose raisers would direct attention to this new field instead of multiplying varieties on the old lines, then we should have climbing varieties which would realise for us the beauty of summer climes. Meanwhile let us make use of what we have already at hand, and plant such hardy climbers as are already mentioned in the wilder parts; make combinations of the ubiquitous and excellent *Gloire de Dijon* and its progeny (none of which, unless it be *Belle Lyonnaise*, come up to their parent in abundance or sweetness of bloom) with such red climbing Roses as can be found hardy. Cheshunt Hybrid, where temperatures below zero are not to be found, is perhaps the best; and the old semi-double Bourbon Rose, *Gloire des Rosomanes*, will succeed in warm soils, and light up an arch with its bright red blooms in autumn as well as in summer. The many climbing varieties of *H. P.* Roses that have lately been raised are all good in their way, but they demand good soil and space for themselves. When it is a warm wall that needs clothing, then it is that the Banksian or various hybrids of Noisette and Tea Roses may be used, though all are liable to be cut down to the ground in cold situations and seasons. Of these, for general effect, I would give the palm to *Ophiré*, whose glossy sub-evergreen leaves and Apricot clusters of bloom contrast so exquisitely with the autumn Clematis, and whose vigour of growth is amazing. For sweetness, as well as continuity of bloom, Lamarque's clusters of lemon-white flowers must stand first; and *Maréchal Niel* is of course unrivalled for the splendour and sweetness of its golden bells, but it is only a shy bloomer in autumn. Climbing *Aimée Vibert* is the only thoroughly hardy member of this section of the Rose family, and should be found in every garden. Its blooms are individually small, but its white clusters are so continuously abundant and the foliage so persistent as to make it rank very high as a decorative garden Rose. *Rève d'Or*, in a warm situation, is a delightful climber, and may be called a climbing *Madame Falcot*, so bright are its half-expanded buds. Many other charming Roses there are in this section, but, as a rule, they do not succeed in English gardens unless the situation be exceptionally good. If some hybrids were raised between the *Rosa indica* major, the Dog Rose, the single Banksian, and the Japanese



*R. rugosa*, I believe a new race of perfectly hardy and decorative climbers would result. May the great growers of the Rose take the hint!

**Hybrid Perpetuals.**—These are so well known and grown that it seems superfluous to attempt to add anything to what has been admirably stated by others, always premising that generous treatment is the only means of assuring a good show of bloom in summer and autumn. Lists of the various varieties for different purposes have repeatedly been given.

**Tea Roses.**—This section has also been pretty thoroughly worked out, but one point may be insisted on, and that is that they prefer a more open and sunny situation than is generally given them, and will thrive on dry banks with a southern exposure if watered and mulched the first season while they are establishing themselves. For future results it is by far the best plan to plant out Tea Roses in early May, having first bloomed them in pots under glass, so that they have some firm foliage to help the root action when planted. For some time they will appear to be at a standstill, but the autumn bloom will be good, and the next year's growth and flower all that can be wished for. Lists of varieties suitable for such positions have also often been given.

**Bourbon Roses** are amongst the most useful of garden Roses where they succeed; they seem, however, somewhat capricious, with the exception of *Souvenir de la Malmaison*, a Rose well known to the veriest tyro in Rose growing. Sir Joseph Paxton and Baron Gonella are two useful varieties.

**Monthly Roses**, as they are commonly called, are not nearly as much grown nowadays as they deserve to be, and when the soil is light and warm will thrive anywhere. Charming beds of these and hardy *Fuchsias* that are cut down each winter may be made, the dwarf varieties being placed at the edge. In sunny glades, where there are clumps of *Pampas Grass*, *Tritomas*, and other autumn-flowering plants, a most charming effect may be produced by the addition of such a combination.

**Summer flowering Roses.**—This section is disappearing from our gardens; but though a race of continuous blooming Roses is always a thing to be sought for, there are some old favourites, such as the *Rosa centifolia* (Provence, or Cabbage Rose), that should always find a place; and the Moss Rose must not be forgotten, though the season of its flower be not long. The Hybrid Chinas are most useful as pillar or climbing Roses; and *Blair No. 2*, *Charles Lawson*, *Fulgens*, and *Vivid* are in the season of their flowering worthy representatives of the queen of flowers.—E. W., in *Field*.

#### THE GALE AMONG THE ROSES.

THE season has been somewhat peculiar for Roses. Tried by an abnormally severe winter and nipping spring frosts, hardly had they begun to grow than they were overtaken by a long and severe drought. This hastened and also shortened the Rose season. Hardly could we say they are here till in many localities they were well high past. To the drought succeeded a long persistent spell of wet weather. This excited and has sustained the growth of Roses so much that many Perpetuals and most of the Teas were attempting to flower more or less profusely when they were caught by the severe hurricane of Friday, the 14th. So fierce was the gale here that it actually blew some of our dwarf Roses clean out of the ground, and whipped many of the others to such an extent against each other and the earth that they will have to be cut back to nearly the ground line. These were young plants, mostly

spring-rooted cuttings, that had made vigorous growth, and were still in full vigour when the gale arose, and this harshly treated and forcibly arrested their further progress. Older and stronger plants being less flexible suffered less on that account, though all the late blooms and very many of the more late and vigorous shoots have been ruined or injured by the strength of the wind and the severity of the frost that so soon followed it on Sunday night. Teas on walls suffered less, unless where exposed to the full fury of the wind on north-west walls. Loose shoots in such positions were almost whipped to death. We hastened to stake our dwarfs where most exposed, for even the strongest of them suffered much from the purchase of the wind on their tops, which twisted the plants round in all directions, causing their stems to form holes like the mouth of a funnel around their stems. After so much wet as we have had this autumn, and especially on account of the late growth and consequent tender condition of so much Rose wood, it may be needful to earth or mulch up the stems of Roses earlier than usual this season. The tops of Teas and other tender Roses should also be protected as soon as practicable. What with the whipping of the wood by the gale, late growths, and the probability of an early and severe winter, it is the best plan to take every precaution in good time. Too many rosarians are caught napping in these matters; they lock the stable-door after the steed is stolen, that is, protect their Roses after they are already killed. It is the first frosts that do the most, I had almost written all, the mischief, and hence all tender Roses should have their roots and tops made safe early in October.

D. T. FISH.

#### OCTOBER ROSES.

UP to the gale of October 14 our autumnal bloom this year has not been up to the average by any means. Hardly had our Roses escaped from the effects of those terrible frost-bites in winter when a severe drought laid hold of them, and many of their constitutions already weakened felt the drought very much, while not a few gave way under it. To this state of things succeeded the copious rains of the autumn, accompanied by rather a low temperature. This effect has been very diverse; weakly trees have not become stronger under the rain, while many young and strong growing sorts have run to wood rather than rushed freely into flower. The combined results of these, and probably other adverse influences, have been but a scant harvest of autumnal Roses in these gardens. But for some Teas on walls we should have been indeed badly off; these have enabled us to cut a fair supply, and the following have proved our most useful autumnal varieties: *Gloire de Dijon*, *Souvenir de la Malmaison*, *Rubens*, *Adam*, *Alba rosea*, *Anna Olivier*, *Triomphe des Rennes*, *Celine Forestier*, *Safrano*, *Madame Margottin*, *Homer*, *Duc de Monpensier*, *Comtesse Riza du Parc*, *Madame Lambard*. The *Maréchal Niel*, which has generally been one of our finest and most useful late autumnal Roses from standards, was wholly killed last winter, and we very much miss its golden cups this winter. Among the Perpetuals several of those that have generally done well have disappointed us this autumn; prominent among them have been *Auguste Mie*, *John Hopper*, and *Jules Margottin*. The best and most useful of all Perpetuals—if it is a Perpetual—has been *La France*. The following have also flowered freely: *Maréchal Vaillant*, *Beauty of Waltham*, *Comtesse de Serenye*, *Chas. Lefebvre*, *Sir Garnet Wolseley*, *Duc de Rohan*. This Rose has been exceptionally good this season, alike in summer and autumn. *Madame Victor Verdier*, *Paul Néron*, not so large and coarse as in the summer, flowered freely with more refined blooms. *Prince Camille de Rohan*, *Sultan of Zanzibar*, *Marquise de Castellane*, *Comtesse d'Oxford*, *Francois Louvat*, *Madame Chas. Crapelet*, and the old favourite, *General Jacqueminot*. The old common pink and scarlet China Roses are also invaluable for furnishing buds in the late autumn,

as is that useful, but far too little cultivated Rose, so useful in bud and so little esteemed unless fully expanded, *Bourbon Queen*. Probably other growers will be good enough to send to THE GARDEN lists of their latest cuttings from the open air. Such notes will prove most valuable in themselves, and will afford much needed and useful data on a subject as yet very imperfectly known or understood—the effects of climate and locality on different varieties of the Rose.

D. T. FISH.

#### NOTES AND READINGS.

Those who have not entertained sanguine expectations of the use of the electric light in horticulture will be struck by some of the results obtained lately by Dr. Siemens by the aid of his electric lamps, as stated in a late number of "Nature." Some may indeed regard them as rather inexplicable. Thus Strawberry plants started under the influence of the electric light at the middle of December produced ripe fruit on February 14, this is not much sooner than they can be ripened without its aid; but "Vines which broke on December 26 produced ripe Grapes of stronger flavour than usual on March 10." From this it would appear that the electric light has little effect on Strawberries, but a remarkable influence on Grapes. From the time Vines break till the fruit is ripe it takes four months or more with early varieties, so that Dr. Siemens gained nearly two months, and this during the winter time, a result that must be regarded as simply marvellous. With the Strawberries he only gained about a week, if so much. These results, which are so inconsistent with each other and with ordinary experience, were obtained in a house "maintained as nearly as possible at a temperature of 60° Fahr. from October 23 to May 7," a remarkably low temperature for Vines all through.

The success attending the planting out of greenhouse Azaleas during the summer, as recorded by a contemporary, one can credit in every way. The *Rhododendrons* can be grown out of doors during the summer, and lifted and forced most successfully in winter, and no doubt the Azaleas will succeed in the same way. That planting out in a good bed will save much labour in the culture of the latter and also produce better plants cannot be doubted. One of the greatest difficulties of Azalea culture in pots consists in the persistent attacks of thrips and other pests which frequently do almost irreparable injury to the plants. They also soon suffer from careless watering, want of potting in time, and other causes, all of which the planting out system would obviate to a large extent. The Azalea is such a useful winter and spring flowering subject, and such a splendid conservatory plant, affording such a variety of rich and pleasing colours as well as quantity of flowers, that anything tending to encourage its culture by making it easier will be welcome. Azaleas, *Bouvardias*, *Heaths* of the *hyemalis* type, and many other things grown for greenhouse decoration might probably all be treated in the same manner—planted out when done blooming and lifted and potted in the autumn. In fact, all those plants which produce a mass of small fibry roots like a Heath or an Azalea would succeed in this way, and many of them are so treated by gardeners and nurserymen.

There is something abnormal about the latest new Grape, *Alnwick Seedling*. When it does swell its berries they frequently reach an enormous size, and they colour superbly. We have recently seen berries that measured 3½ in. in



circumference both ways. There were numbers of such in the bunches, and they were bulgy and unequal in shape and sutured like a Peach. Whether the berries set or no, they always swell unequally. In the first case they can only be characterised as big and bigger, and in the other as little and less. In this respect they manifest the same peculiar tendency to grow to very unequal dimensions. At the best the Grape is a bad setter, even when the berries swell well. The criterion of healthy and successful fertilisation is the number of seeds in a berry. Thus the Hamburgh and Muscat, and many other free-setting sorts produce three, four, and sometimes five seeds, and if a berry contains one perfect seed it will swell as large as if it contained the maximum number, and be better to eat; but the maximum number of seeds produced by the Alnwick Seedling never, so far as I have observed, exceeds two, and the large berries spoken of contained only one each. It will thus be seen that there is but a slender margin between a good set and no set at all. So long as the berries of a Grape swell to their proper size, it is not of much consequence practically how many seeds they contain, but the number of seeds, nevertheless, must always be regarded as the true test of fertility in any variety. Some of the best finished Hamburgh Grapes we ever saw, though not the largest in size, were produced by an amateur in a very small Vinery, and almost without fire heat, and nearly every berry contained four seeds, which did not contribute to their excellence for dessert purposes.

The colouring of Grapes is a fertile source of discussion among gardeners, and there seems to be a pretty general concurrence of opinion that the surest way to get good colour is to crop light. There is just a fear, indeed, that high finish is not unfrequently secured at the expense of crop. Looking at a crop of prize Grapes not long since, the remark was ventured that the quality was first-rate, but that the crop did not run to the rate of the orthodox pound weight to the foot run of rod—indeed, it did not reach much above half that weight; the reply was, “No; if you want colour you must feed well and crop light; very few crops of Grapes at the pound rate finish in the best manner”—a remark in which there is a good deal of truth. Of course a Vine will bear Grapes at the rate of two pounds to the foot, and finish them fairly well, but it is not safe to put Vines to such a test in an ordinary way.

But a light general crop does not always mean good finish. It has often been noticed, if it is not invariably the rule, that crops of large bunches rarely finish or colour well, while crops of moderate-sized bunches do, the general weight of crop to the rod being the same and all other things equal—that is to say, 10 1-lb. bunches on a Vine will colour better than one 10-lb. bunch left alone. The explanation of this is probably that each bunch of Grapes depends chiefly upon the shoot and its leafage on which it is borne, and within certain limits is not benefited by the other branches and vigour of the Vine. Another fact familiar to all Grape growers is that the colouring process generally begins at the top of the bunch, while the point is the last portion to turn black, and in cases of bad colouring it is always the worst finished part of the bunch, looking just as if the colouring matter, whatever it may be, had not been sufficient to go over all the berries, those nearest to the trunk appropriating the lion's share.

The example of Grape growing furnished by Mr. Bushby's Vinery shows that we have a good deal to unlearn on the subject. Mr. Bushby's

Grapes will bring to the recollection of many of your readers the constant and fine crops produced by the same Vines for a period of nearly forty years at Cole Orton under Mr. Henderson's care. The culture given by Mr. Henderson was essentially the same as that given by Mr. Bushby; in both cases it was simple and inexpensive, and consisted principally in annually giving liberal top dressings of manure. The little Vinery at the Dalkeith Parsonage has been frequently noticed in the horticultural papers. It is just about ten years ago since it was described as containing “a magnificent crop of Muscat Grapes and Vines in high health,” and as having been doing the same for nigh a score of years previously. The methodical, but simple culture practised by Messrs. Bushby and Henderson differs in no essential particular from that pursued by the Vine growers at Thomery, in France, who cannot compete with us in size of bunches, but beat us in the aggregate and in the quality of the fruit. Simply made borders composed of the natural soil and rich top dressings constitute the whole of the root culture with them, and the rest of their attention is bestowed upon bunches and leaves. Constitutional vigour is steadily maintained by these means, and periodical failures alternating with flushes of success are unknown in their practice and would not pay.

Loudon wrote some fifty years ago that “the Vine would thrive in any soil that had a dry bottom,” an opinion confirmed by Lindley on scientific grounds later on, and Loudon also gives preference to the kind of manure patronised by Mr. Bushby, and which he tells us is generally preferred in France. After a period of high and scientific culture it is curious to find old-fashioned practices, if not beating the newer ones, at least equaling them, and such facts as have been stated cannot fail to encourage multitudes of small cultivators who are compelled to be content with simple means and appliances.

The *Morning Post* in an article on “Trees and Health” thinks we are getting rational in a great many things that pertain to health, but that miasma slumbers in the hollows of our fashionable shrubberies. “Hydro-carbons are being generated in them, and methylic hydride formed in awkward quantities. We make statutes to protect our vineries from the effects of hydro-carbons and carbonic anhydride, while we cheerfully make those compounds in our gay shrubberies and let them season the air of our drawing rooms.” Rather appalling this to dwellers in gardens and gardeners, who, according to statistics, manage to exist to a good old age notwithstanding. In order to correct this state of things the *Morning Post* proposes to plant “Firs instead of things that are so little useful,” and thinks London especially would benefit if copses even of *Pinus sylvestris* were planted in and about the city where people go for pleasure. The idea that Conifers are killed in London by the smoke and “blacks” is, we are told, merely a fancy of many people. The correspondent of your fashionable contemporary has discovered the true cause of the destruction: “I have found that the Coniferæ require less carbonic acid than almost any other description of forest tree, and so they die in town, not so much from the clogging of the stomata as from excess of carbonic acid.” Important distinction between six and half-a-dozen this! “I have decided,” continues this oracle, “that the evil which causes the trees to droop arises from the gases absorbed. *Pinus Pinaster* will thrive heartily on a bleak foreshore, but it dies when transferred to a large town; yet there is no reason whatever why Pine groves should not be planted round about London and other great

towns.” Did ever anybody read such a contradictory jumble? One cannot help thinking that the writer on “Trees and Health” has not the least idea of what he is talking about, and had his communication been sent to any horticultural paper, it would undoubtedly have been put into the fire, as the best place for it. It is one of those articles which one detects at once as being the production of an ignoramus on the subject; nevertheless such communications to such papers always attract attention in certain quarters, and are sometimes acted upon, and it is not surprising to find that the article in question has prompted several letters from other sanguine writers, who have been struck by the wise suggestions of your contemporary's correspondent, and wish to add their testimony to that effect. Really the “dailies” should submit their horticultural papers to some sensible and experienced person before giving them an extensive circulation.

Rather a remarkable exhibit was that before the Scottish Horticultural Association from Dunkeld Gardens. Eighty sorts of Apples from a private garden in the Highlands, and all of fair quality is a fact worth noting. Notwithstanding the number shown by the grower from his own place, he gave it as his opinion that six varieties of good cooking Apples were enough for most places, and the names of these are Lord Suffield, “which will cook from September to January,” Tower of Glamis, Warner's King, Ecklinville, Keswick Codlin, and Yorkshire Greening, which carries on the supply till the following summer. The dessert kinds spoken of as succeeding well in the north were Ribston Pippin, Summer Thorne, Juneating, Ogle Grove Pippin, Ravelstone, Early Harvest, Cellini, Devonshire Quarrenden, Gravenstein, and King of Pippins, &c. Most cultivators will dissent from Mr. Fairgrieve's opinion, however, that Scotch Apples are equal, if not superior, to the American kinds imported into this country, and which are not as a rule “deficient in aromatic flavour,” while they beat ours wholly in other respects. Good cooking Apples, however, can be produced in almost any part of the three kingdoms, and these are perhaps the most extensively used by the generality of people.

P. REGINNE.

## GARDEN IN THE HOUSE.

### SUCCULENTS FOR WINTER DECORATION.

DURING these last few years a great variety of succulent plants, from the stately Agaves to the humble Echeverias and Sedums, have been used with good effect for the decoration of the flower garden; although they possess but little brilliancy in the way of colour, they are certainly not without beauty of form, and since the sub-tropical or fine foliated department of flower gardening has become so popular, there are few gardens in which succulent plants of some kind are not extensively used; and now that the time has again arrived for getting them under the cover of a glass roof, it may not be out of place to direct attention to their utility for indoor decoration during the dull days of winter, when the confined atmosphere and dust of ordinary living rooms are so trying to flowering plants. With a good washing to free them from dust, these fleshy-leaved plants will live well in rooms with a minimum of attention as regards watering and other work of a routine character, without which flowering plants quickly become unsightly, and even sometimes perish. We have lately been lifting such plants as *Agave americana* and its variegated ally, and find that they look quite as much at home in a beautiful vase as plunged to form central plants for succulent beds. Their appropriate carpeting of *Sedum glaucum* or *S. carneum* can be readily transplanted with them,



and in large vases in such places as entrance halls, where the amount of light is generally defective, causing flowering plants to look miserably unhappy, such plants as these come in most opportunely as a change or relief, and they seem to enjoy rather than suffer from the subdued light. There are also the many forms of *Echeveria* so much used as central and edging plants in carpet beds. The larger kinds, such as *E. metallica* and *E. m. glauca*, if allowed to flower at lifting time make pretty plants for vases, or for mixed stands and jardinettes. Even the well known *E. secunda* and *E. s. glauca* have pretty arching spikes that look well hanging over the edges, and they withstand treatment that would kill ordinary flowering plants. There is, too, *Kleinia repens*, *Pachyphytum bracteosum*, *P. Hookeri*, and many others that have of late years added quite a new feature to the flower garden, and which may be equally effectively used for indoor decoration. I by no means wish to banish flowering plants, but we all know how desirable decided changes are in plant decoration. In the class of succulents indicated, we have quite a distinct character of growth that cannot fail to be attractive, and as they must be sheltered during the winter months there is no reason why they should not be utilised in the way just mentioned.

J. GROOM.

Linton.

## CHURCH DECORATION.

THE superiority of simple materials over those which are expensive for this, as well as for other decorative purposes, was well illustrated in an example I saw quite recently, wherein the pretty little church at Jonesboro' was decorated for the harvest thanksgiving. The groundwork of all was Moss—beautiful green feathery Moss in large flakes, from 2 ft. to 4 ft. long. These had been taken from the surface of stones, prostrate tree stems, &c. Window-sills were carpeted with it, covering the stone and hanging down as a curtain in front. The cushions of the pulpit and reading desk were covered with it, and it also hung down in festoons in front. It formed bays and promontories, upon which every bit of colour told. Long sprays of the seedless *Berberis* were largely used; coloured leaves of Virginian Creeper, Mountain Ash berries, sprays of the variegated major Periwinkle, variegated Ives, common Spindle tree, branches of brightly coloured evergreens, various grains, such as Oats, Barley, and Wheat, were all used. The Barley was most effective employed as a fringe below the Moss, but wherever used the contrast was striking. In carrying out the work, repetition had been in most cases avoided—here a bay partly filled with the coral-like fruits of the *Berberis*; variegated Ivy crept over the adjoining mound; there a spray of Virginian Creeper trailed over the Moss and hung down below it; here again a mass of white Snowberries; and there, glistening hips of the Dog Rose amongst variegated Periwinkle. This latter was used rather freely in various combinations, and is a first-rate subject for the purpose. Many of the flakes of Moss were freely interspersed with the beautiful pale green trifoliate leaves of *Oxalis Acetocella* wisely left in, as were also sprays of the Ground Ivy (*Nepeta Glechoma*), wild Strawberries, and other weeds, every bit of which was effective. One can readily imagine what endless combinations could be easily worked out upon such a groundwork. The finely cut leaves of the common Oak have also a good effect; a bunch with Acorns in one place was very distinct. I thought how pretty a few Primroses and similar small plants dotted in here and there would have looked, and many early ones are now in flower. So pretty was the whole, that the least example of formalism struck one at once. On the front of the pulpit someone had placed a well-coloured Virginian Creeper leaf and a bunch of Rowan berries on each side—

a bad combination, as were also ripe Apples dotted at regular intervals over the top and bottom of the otherwise well-decorated font. Simple materials like those just described are infinitely better and very much easier to arrange than the usual cumbersome and laborious-to-make stereotyped wreaths.

Newry.

T. SMITH.

## NOTES OF THE WEEK.

**The Urn flower** (*Urocelina aurea*).—Among the numerous rare bulbous plants in flower in Messrs Henderson's nursery, Maida Vale, is this charming Peruvian plant. It is now pretty well known, but to those who are not acquainted with it, it may be described as a plant with Onion-like bulbs, bearing large leaves like a *Eucharis*, and stout erect stems terminated by a pendulous umbel of urn-shaped blossoms, of pea-green and canary yellow, colours which render the flower unique among cultivated plants. It is grown in a stove or warm greenhouse.

**The smaller Eucharis** (*E. candida*).—We were gratified lately to find that there is little likelihood of this lovely plant ever being again such a rarity as it has hitherto been. We saw it by the thousand in Messrs. Shuttleworth and Carder's nursery, Park Road, Clapham—plants in all stages of growth, from fine flowering specimens down to the leafless bulbs that have not yet been taken from the imported cases. There can be no doubt about the merit of this beautiful plant, for if it does not surpass the popular *E. amazonica*, it is quite equal to it in loveliness, and many would prefer its smaller and more elegant blossoms, which are produced more numerous and are of a purer white than the other, and the central cups are devoid of the greenish ring that is so conspicuous in *E. amazonica*. It is a very free flowerer, and appears to be of simple culture, and flowers well in winter when the blooms are most valuable. It is a plant that ought to be taken in hand by private gardeners and by market growers now that it is becoming so plentiful. Mr. Shuttleworth grows it well in an intermediate Cattleya house.

**Osbeckia pulchella**.—This is one of the numerous Melastomaceae plants that are to be met with in good collections of plants. It is showy, having large flowers of a pleasing rosy pink, like those of a *Monochætum*. These terminate long and rather straggling branches, which is somewhat a drawback, though it does not detract from its value for cutting from. It is free in growth and flower, and of simple culture in a stove. In flower in the Pine-apple Nursery, Maida Vale.

**Antigonon insigne**.—By the introduction of this most beautiful plant from Central America our stoves have been greatly enriched, as it is said to rival even the glorious *Bougainvilleas* that are so indispensable to every good garden. This, however, remains to be proved, which will not be long judging by the huge plants Messrs. Shuttleworth & Carder have succeeded in importing in a live state. These, in their nursery at Park Road, Clapham, have since their importation made wonderful growth, and the vines from the large root-stocks trail elegantly along the roof of the Orchid houses, and we may soon expect to see them in flower. The flowers of this species are much larger than those of the common species, *A. leptopus*, which has long been in cultivation, and Mr. Shuttleworth, who has collected it in its native locality, says that it is among the loveliest of floral treasures in South America. It is apparently quite amenable to greenhouse culture, and, judging by the conditions under which Mr. Shuttleworth says it grows, it ought to succeed well in a cool, moist atmosphere.

**The Nerines** in numerous variety are just now in great beauty in the Pine-apple Nursery, Maida Vale, where all kinds of tender bulbous plants receive more attention than elsewhere about London. These Nerines are certainly very beautiful, and they surely are not sufficiently known to cultivators, or we should meet with them oftener

in gardens. The only kind that appears to be in general cultivation is the old *N. Fothergilli* and the major variety of it, yet there are others equally if not even more beautiful and quite as desirable to cultivate for other reasons. For instance, *N. cornusca*, which has brilliant vermilion blossoms, produced some two or three weeks later than *N. Fothergilli*, is very desirable, as the flowering period of the Nerines is extended thereby. Then there are *N. rosea*, of a lovely rosy carmine tint; *N. pulchella*, with narrow waxy petals of a clear rosy pink; *N. humilis*, similar to the last, but smaller in all its parts; *N. Planti*, a deep rich red, flowers as large as *Fothergilli*; *N. pudica*, almost white, very pretty; and *N. filifolia*, the smallest of all, with grassy foliage and small carmine-tinted flowers. These are only the varieties that we saw in flower the other day, and do not represent the entire collection, some being past and others yet to flower.

**Glomera jasminiflora**.—It would be difficult to name a more chastely beautiful plant for autumn and winter flowering than this shrub, which is comparatively new to cultivation, and is still somewhat rare, though the quantity we lately saw of it in the Pine-apple Nursery is a proof that there is a demand for it. The pure white Jasmine-like blooms, produced in elegant clusters, are very suitable for cutting, especially for bouquets, for which purpose, no doubt, it will be in great request when it becomes more known. Grown in an intermediate house in pots, it is extremely floriferous, and continues in beauty a long time.

**Autumnal tints**.—Mr. Gumbleton sends us from his garden, at Belgrove, Co. Cork, some leaves of the Ramanas Rose (*Rosa rugosa*), which he justly considers the most beautiful examples of autumn colouring, golden yellow and deep green being evenly distributed over each leaf. There is first a margin of yellow, and the midrib is likewise yellow, from which run off featherings of the same colour through the green, the whole exhibiting a charming intermixture of green and gold.

**Blue-berried Æchmæa** (*Æ. cœrulea*).—In the Bromeliad house in the Pine-apple Nursery, Maida Vale, this rare species is now attractive on account of the large dense head of deep blue and pure white berries it has produced. The leaves, like in most of the other species, are vasiform, and the flower-spike rises from the centre. It is very distinct and well worth growing as an ordinary decorative plant.

**Rondeletia anomala**.—As we remarked a short time ago, this stove plant makes a strikingly pretty object grown in suspended baskets, so that the long slender flowering shoots may fall gracefully over the sides. The blossoms, about the size of a sixpenny piece and of a rich deep crimson, are produced at the tips of the shoots in small clusters. In flower in Messrs. Henderson's nursery, Maida Vale.

**Gardeners' Royal Benevolent Institution**.—Up to this date the number of contributors to the Pension Augmentation Fund is 426, and the amount that has been received is £509 7s. 4d., giving an average of £1 3s. 10d. each response. The committee, we understand, have decided to close the list for this year on the 16th November, and they will be greatly obliged by all cards being sent in to the secretary on or before that day.

**Magnolia grandiflora in October**.—From Linton Park Mr. Groom sends us some blooms of this *Magnolia* to show that it is still in full beauty. Its large ivory-white flowers and their delicious perfume seem in no way deteriorated as yet by frost.

**New Conservatory at the Jardin des Plantes**.—It is stated in the Paris papers that the conservatory now being erected in the Jardin des Plantes will, from its great size and the specimens of plants which it will contain, be regarded as one of the future sights of Paris.

MR. F. A. FAWKES, author of 'Horticultural Buildings,' will, it is said, give a course of three lectures at the Crystal Palace School of Gardening, at 5 p.m. on Nov. 16, 23, and 30, to the students and the public, on the construction, fittings, and heating of greenhouses and other horticultural structures. These lectures will be illustrated by diagrams.



## THE LATE GALE.

IN the course of a considerable journey throughout the country since the storm we have seen such ruin among trees as we have no previous remembrance of. The storm seems characterised by the large area over which it wrought its fury. In the London parks, by the Broad Walk at Windsor, in the midland counties, along the little valleys among the almost treeless downs of Berkshire and Wiltshire, in the fens of Lincolnshire, or on the rocky coast of Wales, the same sight of torn up or broken trees is everywhere visible in about the same proportions.—V.

— There will be lamentations in abundance on the destruction of trees by the late gale, but not many on the almost universal fashion of removing all fallen and frequently even ruined ones, not indeed on account of their often less than worthlessness, but in consequence of the unaccountable notion that they must be in that condition eyesores. Now we are not in the habit of carting away our defunct castles and abbeys. Why, then, should we treat these other ancient and cherished friends in so heartless a manner? If one of the finest objects in Nature is a grand old standing tree, is it not too much to regard the same tree with its vast roots high aloft as less than second to it in rank? The fallen Druid Oaks in the beautifully kept grounds of Oakley Park, near Ludlow, are protected with jealous care, but this is an exception to the rule. The artist knows the value of a prostrate butt on his canvas? Why should the real thing be regarded in so opposite a light?—C. E. ISHAM, *Lampport, Northampton.*

— Here the finest Chestnut tree in this county has been entirely destroyed. On the estate there are over 1000 trees blown down; some have their roots up in the air with a ball of earth 10 ft. or 12 ft. high; others have their stems broken over at various parts; some are down here and there, others are gone in masses. Oaks, Pines, and Elms have suffered most; Ash always resists storms best. Many evergreens are sadly disfigured, and outdoor flowers are nowhere to be seen, although they were more plentiful previous to the storm than I ever saw them in October. All kinds of vegetables have suffered; our Peas and Kidney Beans, which promised to last for some weeks yet, have disappeared entirely, and many other things were blown out by the root. If all Broccoli have gone like ours, heeling over will be light work this winter. These remarks apply to the greater portion of South Wales.—J. MUIR.

## THE GALE AND AUTUMN FRUITS.

THE rich scarlet, deep bronze, and golden hues of autumn were late in coming this year. The long spell of wet weather after several months of drought kept the trees and shrubs full of sap, and the leaves of many of them verdant as in June. Still October made up for its want of bloom by colouring not a few of the leaves, and just as Maples, Oaks, Elms, Planes, Birch, Limes, Liquidambar, Guelder Roses, Pears, Medlars, Cherries, Poplars, Virginian Creepers, &c., had begun to paint their leaves with the rich crimson and golden hues of autumn, the gale of the 14th arose and scattered all the coming harvest of beauty to the ground, for it is a fact that scarcely a coloured leaf is left on shrub or tree. This will be easily understood and believed when it is added that the colour is the proof of maturity, and hence these ripe already partially dead leaves were the first to go. Possibly some of the torn and disfigured leaves left might have taken on the mellow tints of autumn but for the frost that followed the gale on Saturday, and especially on Sunday evening. When frosts of 4° or 5° strike green leaves in October the result is they fall, not colour. The frost arrests the process of colouring and simply shrivels up and kills the leaves, so that within less than a week after the storm the leaves are falling fast, and I fear we have already seen the last of the rich tints of autumn. The loss has been sudden and is irreparable throughout the woods and

shrubberies; the glowing colours of the autumn have been succeeded by the sober leaden gray of winter. The difference wrought in a day and night is marvellous. The loss is most apparent in the Maples and Liquidambers. The common Virginian Creeper is also quite stripped, though the later and closer growing *Ampelopsis Veitchii* has retained its foliage, which hugs the wall with a richer beauty now it is left alone in its glory. Some Virginian Creepers rising up and over Hollies, and crowning them with a brilliancy that totally eclipsed the berries, had not a leaf left after the gale. On economic grounds it is also unfortunate that so many tree and shrub leaves have been frozen in a green state. Many of those frozen leaves have the provoking habit of remaining on the trees in a semi-dried or dried state. Instead of falling in masses and in reasonable time they will keep dropping a few at a time till the end of the year, and probably far beyond it, to the torment of those responsible for the good keeping of gardens and pleasure grounds. D. T. FISH.

## THE FLOWER GARDEN.

## AUTUMNAL NOTES.

LONGFELLOW's beautiful "Autumn" sonnet has often occurred to my mind during the past fortnight—

Thou comest, Autumn, heralded by rain,  
With banners, by great gales incessant fanned,  
Brighter than brightest silks of Samarcand,  
And stately oxen harnessed to thy wain!  
Thou standest, like imperial Charlemagne,  
Upon thy bridge of gold; thy royal hand  
Outstretched with benedictions o'er the land,  
Blessing the farms through all thy vast domain!  
Thy shield is the red harvest-moon, suspended  
So long beneath the heaven's o'erhanging eaves;  
Thy steps are by the farmer's prayers attended;  
Like flames upon an altar shine the sheaves;  
And following thee, in thy ovation splendid,  
Thine almoner, the wind, scatters the golden leaves.

This is from the American point of view, where the landscape is all aglow with the splendid tints of the Maple, but here we have more sombre colouring. The hardy Azaleas, however, come very near to this picture of "brighter than brightest silks of Samarcand," and this year they are glorious in their rich tints of yellow, orange, and deep crimson. Where they can be seen against the sky they have a most beautiful effect, and on the other hand they light up the sombreness of the wood, or the Rhododendron border almost as effectively as they do with their lovely flowers in early summer.

We have a good many hardy Azaleas planted here, many of them chosen for their autumnal foliage alone; and those who have not considered their uses at this dull season when flowers are scarce, and foliage has an added charm, would do well to visit the nurseryman and select those plants which would thus add colour to their gardens in the autumn as well as in the spring. The golden leaves have been scattered with a vengeance this time, and we have to mourn the loss of many fine trees by the hurricane which swept over us three days ago, and now we have the meadows flooded, and then covered by ice before the middle of October. All the Dahlias are killed, and many other tender flowers are gone, so that only the beautiful *Anemone japonica*, and a few *Helianthus*, *Rudbeckias*, and *Phloxes* are left.

We have been very busy of late in re-arranging our borders for spring, and planning them this time to show off the Primroses especially. Our stock of fine coloured Primroses is the result of five years' careful labour, and we have now sufficient numbers of our very best to enable us to mass them in clumps of five or six, so as to get the full effect of their rich colours.

With these we are using red and white Daisies, variegated Arabis, *Lamium aureum*, *Myosotis*, Dean's giant white *Polyanthus*, large quantities of the double Cuckoo flower (*Cardamine pratense flore-pleno*), *Antennaria tomentosa*, *Aubrietias*, *Cheiranthus alpinus*, *Alyssum saxatile*, Wall-flowers, single and double Tulips, Crocuses, &c. The interest, however, of this will depend upon the Primroses, which I have never yet seen used in quantity for spring bedding. It is very little trouble to rearrange the borders from summer to spring flowers if they are worked on a systematic plan, and it costs but little when once you have the proper stock to raise the large quantities required for clothing the home borders for spring. The beauty of a spring display is far greater in my opinion than anything which can be achieved later in the season, and as it comes also at Daffodil time it adds to the most delightful of all floral treats. In May the amateur gardener has his climax of floral delights, and for this he must prepare now. There is sufficient beauty in the variety of foliage when the borders are thus clothed for spring to carry us through the winter without feeling the dismal barrenness which seems now to fall on most gardens in the autumn, and this is one great reason for taking all the trouble to alter the borders at this season.

*Didsbury.*

BROCKHURST.

**Stobæa purpurea.**—To "Delta's" question, "Is this plant worth growing?" I answer that it finds no favour here. Two plants of it were purchased in the spring of 1880 and given good positions. They grew well, but we could see no beauty in them, and they were destroyed. The question, however, as to what plants are worth growing and what not, is a very knotty one, and one on which no two persons hardly agree. Single Dahlias and the Paris Daisies are a case in point. Of late I have met many who dislike them, and an equal number who value them.—J. C. F.

**Seedling perennial Phloxes.**—"W. J. M." says (p. 422) that seeds of these take from six to eight months to vegetate, a statement at variance with facts, as they vegetate in a couple of weeks, and the plants produce grand branched spikes in four or five months. Nor are the seedling plants the same as their parents. We were anxious to raise some good white Phloxes, and saved seeds from some pure white varieties, but not one of the seedlings were white. Seeds were also saved from a richly coloured variety named *coccinea*, but not one of the seedlings were like the parent. At present (October 22) we have a grand lot of seedlings in flower, notwithstanding 9° of frost a week ago. They will continue to produce flowers till Christmas if the weather permits; whereas, all the named varieties were out of flower early in September.—J. DOUGLAS, *Loxford Hall, Ilford.*

**Dividing Asters.**—What is the best time to divide Asters, *Rudbeckias*, &c.? Is the large white Daisy flowering now a *Pyrethrum*? [Asters, *Rudbeckias*, and in fact all hardy herbaceous plants may be divided at any time after the stems have died down if the weather be not too frosty. Autumn is, however, the best time. The large white Daisy now in flower is either *Chrysanthemum Leucanthemum* or *Pyrethrum uliginosum*.—G.]

**Gentiana bavarica.**—Would it be better to keep this during winter in a cold frame or to plant it out? If in a cold frame, should the pot containing it stand in a saucer with water always in it?—A. C. BARTHOLOMEW, *Reading*. [This Gentian is best planted out on a well-drained rockery; if in a cold frame the pot should be plunged up to the rim in a bed of coal ashes, and only watered occasionally to keep the soil in a moist state.]

**Palestine bulbs.**—Could any of your correspondents suggest some way by which I might acquire some of the choicest bulbs of Palestine? I am told it is hopeless unless one digs them up for oneself.—A. C. BARTHOLOMEW, *Reading.*



## INFLUENCE OF SOILS ON ALPINE PLANTS.

THE question that has been raised lately (not for the first time) in *THE GARDEN* as to the influence of soils on the more sensitive of our alpine and other hardy plants is one of great importance, as bearing on success in their cultivation. At one time I was of opinion that the ingredients of the soil affected plants more mechanically than chemically, but I have had abundant reason to think otherwise. Again and again I have been perplexed at the failure of plants when all the conditions seemed favourable. I have only, when it was too late, found out that I had been growing them in limestone when they required granite or sandstone, or *vice versa*. I am unacquainted with the list referred to by Mr. Whitehead, but he would confer a favour on myself and, I believe, on many others by giving us more information about it. The hints on the subject given in Messrs. Backhouse's catalogue are valuable, but much too general to be a sufficient guide. For instance, when grit is said to be needful, the further question we want to know is, what sort of grit? No plant, perhaps, illustrates the need of this discrimination better than the two alpine *Rhododendrons*, *ferrugineum* and *hirsutum*. I could point to spots where the two are growing apparently intermingled, but where the presence of either is a sure indication of the soil beneath. And so it is with scores of other alpine. In fact, in many instances, one species is only the modified form of another under different conditions of soil, as, *e.g.*, *Ranunculus alpestris* in limestone districts answers to *R. glacialis* where lime is absent. Take, again, the different alpine *Primulas*. *P. marginata* flourishes only, I believe, in limestone; whereas to *P. viscosa* limestone is proportionately distasteful. Correct and detailed information on this point would be of great value, and would do more to promote a better kind of horticulture, by furthering success, than half the instructions which are commonly supplied. The remark applies to Cryptogamous plants in an equal degree. For some years I failed to cultivate *Woodsia ilvensis* out-of-doors, but when I learnt to press it close between pieces of granite, its growth was ensured at once. On the other hand, *Asplenium fontanum* is as happy in chinks of limestone in our moist climate as on the arid heights of the south of France.

May I offer a practical suggestion in reply to a remark of Mr. Brockbank with regard to the list of plants published at *THE GARDEN* Office as useful for effecting exchanges amongst amateurs? So many of our most valuable plants are of recent introduction, that a yearly edition would be necessary to keep it posted up. It has occurred to me that an interleaved edition, in which these additions might be entered, would be a boon.—CANONICUS.

**Villanova chrysanthemoides.**—I found this rather pretty composite in the north of Spain

two years ago, and brought it home. It has much the habit of *Leucanthemum lacustre*, with flowers like those of *Chrysanthemum segetum*. It grows between 2 ft. and 3 ft. high. It is killed by a severe winter, but may be first propagated by cuttings and seeds.—H. H. CREWE, *Drayton-Beachamp Rectory, Tring*.

## DAILIA WHITE QUEEN.

THE accompanying woodcut represents a plant of the beautiful single white *Dahlia* named *White Queen*, which some time ago created such a fine display in Mr. Ware's nursery at Tottenham. It grows from 3 ft. to 3½ ft. in height, forming a



*Dahlia White Queen.* (Drawn from Nature, October, 1881.)

compact bush 3 ft. or so across. It begins to flower about the middle of August, and continues in perfection until injured by frosts if unprotected. As may be seen, the flowers are neither pendent nor upright, but borne Sunflower-fashion, and they are not produced singly, but three, and sometimes six and nine, upon a stalk. In a cut state the blooms last in good condition for three or four days if in a cool room, and few flowers are more charming than these are when tastefully arranged in a vase with foliage.

The plant from which the drawing was made had 175 buds and expanded flowers upon it.

Nothing can surpass it either for planting in large masses on lawns or as an autumn bedding plant for large spaces, more especially in parks. The substance of the flowers is such that wet does not discolour them, and the substance increases as the season gets later. For church decorations it is unrivalled, especially when associated with scarlets, purples, and other colours. W. G.

## LILIUM POMPONIUM VERUM.

THIS lovely Lily, illustrated in *THE GARDEN* last week, must not be confounded with the *Lilium pomponium* of the trade, which is simply the red variety of *Lilium pyrenaicum*. It is a native of the Maritime Alps, and was formerly abundant in certain localities, but in many of these it is now becoming a rare plant. It was introduced some years since, but only in limited quantities; now, however, when it can be obtained at a nominal price, it must sooner or later find its way into every garden, and as it grows so freely, it must become one of our most popular plants. It is exceedingly elegant in growth, possesses a vigorous constitution, and is in bloom at a time (June) when there were no others of a similar colour in flower, it being much earlier than the numerous varieties of *chalcidonicum* and *pyrenaicum* to which it is related. It grows about 3 ft. in height, is of an erect habit, and has long linear leaves from 100 to 150 on a stem, each leaf having a conspicuous white edge, the general appearance of the plant suggesting a gigantic form of *Lilium tenuifolium*. The flowers are produced in a lax raceme 1 ft. through, and on well established plants I have had this year twenty flowers. In the rich loam at Tottenham it grows most luxuriantly both in sunshine and shade, and no difficulty has ever been experienced with it, either in the case of home-grown or imported roots. Although the latter sometimes arrive in a very emaciated condition, yet every plant seems to grow the first season, and flower the second. The bulbs attain a very large size, often measuring from 11 in. to 12 in. in circumference; such bulbs have only been in the ground two flowering seasons, and it is a

rare occurrence to find a sickly bulb, although thousands are planted in various positions and soils. It is one of the most vigorous in growth of this family, and as effective as the old scarlet *Martagon*, but it blooms three weeks earlier.—A. P.

—In a notice accompanying a plate of this flower (p. 420) it is questioned whether the true *L. pomponium* has ever been cultivated in this country. More than forty years ago, and until twenty years of the present time, I can answer for having in my garden, in Northumberland, a Lily under that name totally distinct from *pyrenaicum rubrum*. If the figure in *THE GARDEN* is not of abnormal size, it represents a flower rather larger than mine, but mine was a pure



scarlet, unspotted flower, exactly like *chalcedonicum*, except in size. The leaf, of course, is very different. In size it was larger than *tenuifolium* and smaller than *chalcedonicum*. It was about 4 feet high, brilliant scarlet (not orange-red), an abundant bloomer, much finer in habit than *pyrenaicum*, but not less easy of cultivation. I grew also at the same time *Lilium pyrenaicum rubrum*, *L. pyrenaicum* (yellow), *L. chalcedonicum*, and the then recent *L. testaceum*; there was thus no reasonable room for error. Beside these I had *L. monadelphum*, the pure, large, unspotted yellow, which is now scarcely to be had. I had *L. pomponium* from the vicarage garden at Kimbolton, Hunts, where in those days were to be seen the finest epiphytes and also the most choice collection of bulbs and herbaceous plants then in cultivation, amongst others, *Pæonia anemoneiflora*, which was introduced first into that garden.—T. H. ARCHER-HIND, *South Devon*.

#### NOTES FROM PASSAIC.

MESSRS. WOOLSON and Co., the well-known American hardy plant growers, send us the following interesting notes from Passaic, New Jersey:—

**Oiled paper.**—In a recent number of THE GARDEN is a note in regard to waxed paper. We would say that we make a very excellent article in the following manner: Mix equal quantities of raw and boiled linseed oil, select a thin, at the same time strong, manilla paper, then with an ordinary paint-brush cover one side of the paper with a very thin coat of oil prepared as above. The sheets are then hung by the corners to lines and allowed to remain until needed for use. We find this a very cheap mode of preparing paper for sending plants by post. We send plants packed in moist *Sphagnum*, and surrounded with this paper, so that they travel safely to very long distances. Plants were packed in the above manner and sent to New Zealand, arriving in excellent condition. For cut flowers we use a very thin tissue paper.

**Lilium canadense and L. superbum.**—We often see in the English horticultural press cultural directions for these two North American Lilies. Some of them are somewhat at variance with our experience, which must undoubtedly be accounted for by difference of climate and soils. We find that while *L. superbum* is naturally found growing in quite moist, swampy localities, it will grow and make excellent bulbs in very dry sandy soil, and that *L. canadense* growing in the same localities will not grow so vigorously in dry soil, but soon dies out. A few years since we planted a considerable quantity of *L. canadense* in the higher and drier part of our nursery; the first season they bloomed well, but made no fine bulbs, and now there are but a few straggling plants left. Two years since we, after considerable hesitation, finally decided to plant this species in a low, and during the winter, quite wet part of the nursery; they made a remarkably large and vigorous growth, flowered well the following season, and are now (Aug.) just coming into bloom for the third time, so that we now always plant them in our low moist ground. There are thousands of blooms just opening, and we have never seen any plants more thrifty. We have some *L. superbum* showing 35 flower-buds; this species is from two to three weeks later than *L. canadense*.

**Calochortus and other California bulbs.**—These we find in our climate should be planted in the latter part of October up to the last part of November to succeed best. If planted earlier they at once commence growth, and are severely injured by frost, if not entirely destroyed.

**Cooperia pedunculata.**—This rare species from Texas has been flowering in our grounds for the past month, and yet there are plenty of buds still to come. The flowers are of a pure white, very fragrant, with tubes 6 in. to 8 in. long; these only remain open for a day. *C. Drummondii* is smaller flowered, not fragrant, and only continues in bloom for a few hours.

**Lewisia rediviva.**—We grow this plant in a very light sandy soil, fully exposed to the sun, where it blooms beautifully every season. A few years since a large bed of it was destroyed by a fungus, which attacked the leaves and destroyed the whole plant. This fungus seemed very much like that which attacks the *Portulaca*. Since then we have seen no return of it.

**Spiræa crispifolia.**—Some eight years since we received of Mr. Thos. Hogg, from Japan, a small plant of a very peculiar looking *Spiræa*, which we catalogued as *Spiræa* sp. Japan. After it flowered Dr. Gray decided that it was a distinct form of *S. callosa*, and it has since received the horticultural name of *S. crispifolia*. The plant never grows over 12 in. to 15 in. in height; the leaves are crisped and small, only  $\frac{1}{2}$  in. in length, and the flowers are borne in small clusters, rosy red in colour; it blooms from June until August. Its very dwarf habit renders it a desirable shrub for herbaceous borders, as the foliage remains of a bright green all summer.

**Viola pedata.**—During the past summer we visited a locality where this species actually covered over 100 acres. The native soil is sandy and dry, and even quite gravelly in spots. In this vast field of flowers we were unable after a diligent search to find a single variety bicolor, but we found an abundance of the variety alba. This last becomes very large and fine in good soil and by cultivation, and is also a desirable plant for growing in pots in a cool greenhouse or cold frame. We discovered in a large sod of the variety alba a few plants of a fragrant sort, which were nearly as fragrant as the ordinary sweet Violet. This is the first instance we have seen recorded where a fragrant variety has been noted. The variety bicolor is quite rare in the eastern States and is worthy of more general cultivation. Like the variety alba, it is well adapted for growing in pots and becomes very large and showy. We have a row containing nearly one thousand plants, many of them at this date (October 3) flowering for the second time. The spring bloom, however, is larger and finer than the autumn one.

**Allium stellatum** (the Starry Allium).—Among the many species of this genus in the United States we have seen no more showy representative than this. The flowers are lilac-rose, and in dense clusters on stalks 12 in. to 15 in. high, the individual flowers being nearly  $\frac{1}{2}$  in. in diameter. The bulbs are large, nearly 1 in. in diameter, and the species is a vigorous grower in any light rich soil. At this date (October) the plants are in full bloom and quite attractive.

**Lilium superbum.**—In our nursery we have a row containing over 2000 bulbs, all of which average 5 ft. in height, and have produced from 25 to 35 flowers to the stalk.

**Crinum caribbæum.**—We have been much pleased with the flowering of this bulb in our grounds during the summer. It has been grown in the open ground and well supplied with water during the season. The perianth is composed of long (5 in. to 6 in.) narrow parts with a large crown, which makes the plant very showy. The bulbs are very large (3 in. to 5 in.) in diameter, and bear leaves from 2 in. to 3 in. wide. Although this species has long been in cultivation it has only recently been detected in Southern Florida, from whence one of our collectors forwarded a quantity last spring.

**Aster ptarmicoides.**—We were glad to see in a recent number of THE GARDEN a favourable notice of this really showy and desirable species. We have grown it for several years, and have given it the name of Bouquet Aster from the large flat corymbs of flowers it bears. Some of our plants have corymbs of flowers 15 in. across, which will remain for several weeks. Unlike many of the Asters, this species does not spread and become weedy.

**Corydalis pallida.**—This species is a native of Japan, and was sent us by Mr. Thomas Hogg a few years since. The foliage resembles that of *C.*

*aurea*, but it has a much more luxuriant growth. Some of our plants are now 3 ft. in diameter, and are covered with spikes of beautiful yellow flowers resembling those of *C. nobilis*, but not in such compact spikes. It has been in bloom for over a month now (July), and from its manner of growth it seems likely to continue for several months to come.

**Crawfordia japonica.**—Another of Mr. Hogg's introductions seems likely to prove a desirable climbing plant; it has been called Climbing Gentian, the flower being nearly 2 in. long and light purple, in colour and shape resembling a Gentian. We have not as yet tested its hardiness, it being too valuable to leave out-of-doors during the winter; it has, however, stood safely in a cold frame, and we propose to allow a plant of it to remain in the open ground during the coming winter.

**Jamesia americana.**—This beautiful shrub flowers with us very abundantly, and was perfectly hardy even during last winter when we had the temperature as low as 30° below zero Fahrenheit. When young it makes a very slow growth with us, but in a few years when well established it grows vigorously. A few years since we found in Colorado a semi-double variety, but, owing to the great difficulty at getting at the root, which grew in the crevice of a rock, we were unable to secure the plant.

**Phlox pilosa.**—This is one of the showiest of the North American species; it grows to a height of 10 in. to 12 in., and flowers abundantly from June to August. The flowers are from  $\frac{1}{2}$  in. to  $\frac{3}{4}$  in. in diameter and purple in colour; leaves, narrow, linear, and of a bright green, so that even now after the plants have done flowering they are noticeable on account of their foliage.

**Chrysanthemum coronarium.**—This, though not showy, should be grown wherever cut flowers are much in demand. What renders it of value for cutting is that its blooming season extends all through the summer and autumn months, the same plants giving many flowers until frost comes to spoil them. By the early autumn it grows into a large bush, and is covered with bloom at a time when so many of our summer flowering plants exhibit a rather woe-begone aspect. The flowers suffer but little from long-continued or heavy rains.—V.

**The Chimney Campanula.**—What a wonderful family is that of the Hairbells, and how valuable for the decoration of our gardens. Perhaps the most valuable of all is what is sometimes called by the above name, and botanically *Campanula pyramidalis*. In certain parts of the Continent we believe it is much used for the house; but we have never ourselves seen it better placed than as a border flower, forming a dense pyramid of its handsome star-like flowers, 6 ft. high when well grown, and flowering on till late in autumn, when good things are not too plentiful. Oddly enough, one seldom sees it about London. More is the pity, for there are few things so fine. It is easily raised from seed, and when strong young plants are obtained they may be planted three together in the mixed border. The white variety, well grown, is a beautiful star-like flower, and may be grown in the same group with the ordinary blue variety or kept distinct, which is the better way.

**Colchicum autumnale.** By the omission of the word "white" the point of my remarks on *Colchicum* (p. 108) is lost. I meant to say, writing of the abundance of *Colchicum autumnale* in the neighbourhood of Wells, "On a hillside between that city and Shepton Mallet the white variety abounds." May I add *Viola arborea* to the list of puzzling Violets. —NORMAN.

**Double Nasturtiums.** Are you not a little hard upon these? My flowers, even after a hard fight for life with the awful gale of Friday and three consecutive frosts (when the thermometer has fallen to 29°, 29°, and 25° respectively), hardly deserve the reproach of being "somewhat dingy." —NORMAN.



## THE INDOOR GARDEN.

## AUSTRALIAN BEEF-WOOD.

(CASUARINA QUADRIVALVIS.)

NEITHER foliage nor fine flowers contribute to the decorative value of the Beef-woods, but

consist of quite a shower of inflorescence, the male flowers of which are only represented; the females are borne in dense cones and are curious, but not ornamental. Young trees without flowers are extremely handsome; one about 8 ft. in height is well furnished with slender pendulous branches from the top to the ground.



Australian Beef-wood (*Casuarina quadrivalvis*).

graceful in a high degree are their slender branches, a fact admitted by the interest lately evinced for the tropical *C. equisetifolia*, which by the way is not the only one worth cultivating. *C. quadrivalvis*, another kind, is equally well worth attention. The tree from which the specimen here illustrated was cut is about 20 ft. high, and the whole upper part seems to

These two specimens, which grow in the Cambridge Botanic Garden, are capitally illustrative of the genus which alone composes the Natural Order Casuarineæ. This species is the Oak of South Australia; the different kinds are said to be called Oaks in Australia, and on account of their sombre appearance are planted in cemeteries, where their branches produce a

mournful sighing sound as the breeze passes over them, waving at the same time their hearse-like plumes. These plants are of much botanical interest, and are striking to any observer on account of the close superficial resemblance which their young stems bear to Horse-tails or Equisetums. One species is sometimes planted in the south of Europe on account of its elegance. Nearly all are greenhouse plants in this country but one; the *C. equisetifolia*, before referred to, is a native of the South Sea Islands, the Indian Archipelago, and India, and therefore requires perhaps a higher temperature. A plant grown under this name does well in a greenhouse. They are all easily cultivated and grow rapidly. They grow readily from seed. L.

**Allamandas restricted at the root.**

We have an *Allamanda Schottii* that has been continuously in flower for the past four months, and which looks as if it would continue so for an indefinite period. It is trained on a trellis over the pathway of a stove, the long shoots being allowed to hang quite loosely, intermixed with those of the lovely *Cissus discolor*, and they make a charming combination. No one would credit the enormous quantity of bloom which this plant has produced if they saw its confined root run. It is in a narrow box set close to the hot-water pipes, where it gets a thorough saturating with water every day, and on bright days twice a day, and also a liberal quantity of liquid manure. In gathering the flowers, only the fully expanded blooms should be removed, as the terminal buds keep on pushing out fresh flowers, and to cut the trusses would be wasteful. We find the large yellow blossoms extremely useful for dinner-table decoration laid on long sprays of the *Cissus*, or any bright tinted autumn foliage may be utilised for vases associated with these blossoms for contrast. Allamandas are among the cleanest of stove plants, and look well in almost any form; but I think their floriferousness is greatly increased by full exposure to as much light as they will safely bear, and restricting the root space to a minimum, making up for lack of soil by increased supplies of liquid manure.—J. GROOM, *Linton*.

**Bougainvillea glabra.**—This can be grown and flowered successfully in a slightly heated greenhouse, but it must be in such a position as to permit of its enjoying all the sunlight possible in winter. We have a plant in our conservatory planted out and growing on one of the ends of the house, and about two months ago this plant was a perfect sheet of flowers of the richest colour. The treatment for this plant is nothing extraordinary, a brick bed of rich loamy soil well drained and kept as dry as possible during the resting season, with a liberal use of the pruning knife, being all that is necessary. The most important point to observe is the choice of a plant to start with, as where small tender plants are subjected to a low winter temperature death is almost sure to follow. A strong healthy plant should be selected and grown in a cool house in a pot the first year, and the following spring the bed should be prepared and the plant planted, so that the whole of a summer's warmth may help to establish the plant and enable it to bear the winter.—B.

**Mackaya bella.**—I am afraid that few, if any, have succeeded in flowering this plant satisfactorily. I have tried it for the last three years, and have succeeded in growing it to almost any size, and have also had something like a fair promise for flowers, but, owing perhaps to some fault either in watering or temperature, there has never been enough to please me. Mr. Green, who has flowered this plant so well, very kindly gave (*Vol. XVI., p. 150*) the details of his treatment, which were briefly as follows: "Plant it in a rich loamy soil in a bed or large pot in a warm greenhouse. Treat liberally throughout the summer, so that the growth may be strong and free. In autumn give plenty of air, and allow all the light possible



which will ripen the growth and send the plant to rest. Withhold water during winter. As soon as the flower-buds begin to show themselves give the soil a thorough soaking, and as the racemes lengthen a little, weak manure water will be of great assistance to them. The flowers ought to be at their best about April." Such is the treatment Mr. Green recommends, and with which he succeeded in flowering his plant, and such is the treatment I have endeavoured to give, and have failed to flower it. Undoubtedly there is a hitch somewhere, and I would like to find out where it is. It may be the plant is a shy bloomer as a rule, and Mr. Green dropped on one of the exceptions. This year we have several strong healthy young plants in pots. These were placed out of doors during the warmer part of the year, and now they are in a dry light house to ripen, and by bringing them into a moist stove early in spring I hope to prove whether they may be flowered satisfactorily thus. Whilst writing about plants I have not succeeded with I may mention another beautiful plant, much in the way of the above in floral characters, viz.:

**Antigonon leptopus.**—This was introduced some few years ago as something infinitely superior to the Bougainvilleas, both as regarded flowers and habit, and according to the opinion of collectors and the figures that have been published, it is certainly a very desirable stove plant. But the value of a plant horticulturally rests almost as much on freedom of development as on mere beauty, which means in other words that "handsome is as handsome does," and, therefore judged by this standard of merit, the *Antigonon* is a failure. This year I have tried plants in hot stoves, in greenhouses, planted out, and in pots; have treated some liberally; others again have been starved, and last year I did the same thing, but I have not seen a flower yet. I should be thankful to any person who has grown and flowered this plant for a few hints. In Central America and other species of *Antigonon* are said to grow and flower like Dog Roses here, and I am told by a friend in Burmah that these plants, especially *A. leptopus*, are of the commonest climbers there, growing and flowering as profusely and with as beautiful effect as the *Clematis* does here. I do not remember now whether Mr. Bull ever flowered *A. insignis*, which was sent to him by Dr. Seemann some few years ago, who said it was more than beautiful; in fact, he had seen nothing to equal it—a character it may deserve out in the American wilds, but it does not seem to have proved worthy of it here.—B.

**Ventilating Violets.**—"A. D." (p. 401) refers to this matter, and points out that there are many ways of ventilating even in this case. With Violets under glass the object is to get flowers for as long a time as possible, and as they do not like forcing, various expedients are adopted for giving a light, dry, buoyant atmosphere as much like that of a spring day as possible. Whether this is attained by lights tilted back and front, or at the sides, or only one end, matters but little if the plants have been well prepared during the preceding growing season. Except it rains hard, or the thermometer is close upon the freezing point, we keep the lights pulled off altogether, and with us Marie Louise has been flowering freely for some time, and the Neapolitans are now coming in, the Czar being plentiful in open beds. The main point is to get the runners out early in April, keep them clear of red spider by copious waterings and heavy syringings, and all of the side runners kept cut closely off. Under these circumstances there will be no lack of Violets, even if the cultivator has a fancy for trying various modes of ventilating, so long as they really do get plenty of fresh air daily. I have long held that the Neapolitan was the best of all Violets, but must own that Marie Louise has proved the earliest with us this season. As, however, they are of quite distinct shades of colour, both are well worthy of cultivation.—J. GROOM, *Linton*.

**Rochea falcata.**—This is one of the good old plants that needs looking up for autumn decoration. In growth it is very much like a *Crassula*, and similar treatment will doubtless suit both. I

lately came across some beautiful plants of it growing in a house that answers for conservatory, vinery, and plant house combined. Their orange scarlet colour is very effective now when brilliant colours are scarce. I procured a few pieces, and mean to give them a fair chance of doing well, for although an old friend nearly forgotten, it is quite as worthy of a place as some of the new and rare introductions of modern days.—J. G. L.

## THE GARDEN FLORA.

### PLATE CCCVIII.—THE SPANISH IRIS.

THE Spanish Flag or Iris (*Iris Xiphium*, *Xiphion* vulgare, *Xiphion angustifolium*) is a very old inhabitant of our gardens, having been well known to Clusius and to Parkinson. It and the so-called English Iris or Pyrenean Flag (*Iris Xiphoides*, *Xiphion latifolium*) are at present the bulbous Irises which are most commonly cultivated. Singularly enough, the native habitat of each is extremely limited, the Spanish Iris being found in Spain and Portugal, and only here and there in the south of France, while the Pyrenean form, as its name denotes, comes from the Pyrenees. Both species, as far as I know, are absent from the north of Africa (though represented there by allied forms), and from Italy as well as from the rest of Europe, and from Asia and America. The misleading title of English Iris applied to the Pyrenean form appears to have arisen from the plant having been introduced to the Dutch gardeners, not direct from the Pyrenees, but in a roundabout way through some Bristol merchants, in whose gardens it was a favourite long ago.

The Spanish Iris begins growth early; at the present time its awl-like shoots may be seen spearing above the soil. Having attained a few inches in height, they will remain stationary during the winter, careless of even biting frosts. In the spring the tall narrow leaves will grow apace, and a stalk, almost wholly ensheathed by clasping leaves and spathe valves, will, late in May or in June, bear one or two flowers whose great beauty consists in the vividness and yet chasteness of their colouring. The bulb which produces offsets in great abundance is much smaller than that of the Pyrenean Iris, and its coat, though it may be spoken of as fibro-membranous, is not nearly so thick and rough as is the coat of that species. The flower in many of its features imitates in a singular manner the flower of the *Spuria* group of Irises, the falls being long and narrow, and the style being bent down closely over the fall, so that only strong insects can make their way to the nectary. It may be mentioned in passing that old Sprengel was led to his discovery of the use of insects in fertilising flowers by his observations on this same Spanish Iris.

The plant having been for many generations in the hands of the Dutch florists, many seedlings have been raised and much variety of colouring has been gained, though the number of named varieties is not so great as in the case of the Pyrenean Iris. The prevailing colours are blue, with various shades of purple or violet, yellow, and white. There is a form known under different names in different florists' lists the opaque snow-white hue of which renders it very charming. Of the beauty of their colouring there can be no doubt; but to my mind the stiffness of their form lessens their merit, and not one of them in my opinion can compare with the lovely Iris *juncea*, an allied bulbous species whose graceful outlines, deep pure golden colour, and sweet odour (the Spanish Irises are practically inodorous) render it one of the most desirable of midsummer flowers.

The blue tints of the cultivated seedlings seem to be derived from the typical native

Spanish plant; the yellow hues, as far as I can learn, may be traced to the Portugal variety known sometimes under the name of *Iris lusitanica*. Gawler (*Bot. Mag.*, 679) gives an elaborate description of this variety, which he distinguishes not only by colour, but by form from the typical plant. The most striking distinction in form which he gives is that while the falls of the typical plant spread out almost horizontally, and are narrow, so that the base of each standard stands out quite distinct from the base of the claw of the fall on each side of it, in the Portuguese varieties on the other the falls rise upward, so as to form a funnel, and are broad, so that they lap over and cover in the base of the standards. Now, in looking over a series of Spanish Irises it is very easy to distinguish two types of form, illustrating very clearly the differences just mentioned, but blue, yellow, and white appear indiscriminately in the two types; and there are many forms intermediate between the two. Moreover, many yellow plants imported direct from Portugal (such a one was the yellow form figured in the plate) do not answer to Gawler's description as far as their form is concerned, but resemble rather the typical plant. For these reasons it seems to be undesirable to keep up the name of *lusitanica* as indicating a distinct variety. As far as I know, the Portuguese plants are for the most part yellow, and generally have the more funnel-shaped flowers, while the Spanish plants are generally blue and have more spreading flowers; but the distinction is not absolute, and the cultivated varieties are mixed both in colour and form. I see no evidence of blood either from the Pyrenean Iris or Iris *juncea*, or indeed any other bulbous Iris having been introduced, as Gawler thought, into the seedling Spanish Irises of the Dutch florists. The Iris *sordida* of Salisbury is confidently asserted by Gawler to be simply a form of the Portuguese variety, in which the yellow is blotched with purple or violet, a phase of colouring which is not at all uncommon in the Dutch seedlings.

Of the third handsome, robust form figured in the plate, the so-called Thunderbolt, or Clouded Iris, I have already (see p. 42) said all I have to say, and have nothing to add except that, whatever it be, I feel more and more disposed to consider it as a pure sport of the ordinary Spanish Iris.

**SOIL AND SITUATION.**—One point on this head is, I think, clear, viz., that the Spanish Iris cannot stand being waterlogged in autumn and winter. As far as I can make out it prefers a loose, friable, sandy soil, which, however, should not be too poor, for it repays feeding with rich well digested stuff—thoroughly rotten leaf mould, or manure—by giving fuller and richer bloom. Sun it must have, but its slender stalks suffer from the winds; it should therefore have the protection of shelter without shade. It needs an autumn drought to ripen its bulbs, and a winter dryness to keep it at rest; but in the spring when it is rapidly pushing its slender leaves and shoots it loves any rain which is not excessive. On the whole it flourishes in dry places much better than the Pyrenean Iris, which will stand a much greater amount of wet. The Thunderbolt or clouded variety is much more robust than either the typical form or the Portuguese kind, and will flourish even grandly in stiff damp soils where they would speedily perish. I may mention as possibly an instance of how the influence of one plant on the soil may benefit another, that the best blooms I ever had in Spanish Irises was on one occasion when I planted some bulbs among Carnations; but it is possible that this was purely accidental.

The golden rule of not meddling over much applies most distinctly to the Spanish Iris. The new roots begin to shoot out almost before the











old stalk has withered, and the bulb hates to be kept out of the ground. Plant, then, the Spanish Iris in clumps in some rich loose friable plot, where their bright colouring may be shown to advantage, and let them stay there year after year until the dwindling foliage tells you that they have exhausted their territory of soil. But as far as my experience it will be some time before that comes to pass.

F.

## TREES AND SHRUBS.

### THE AUSTRIAN PINE. (PINUS AUSTRIACA.)

THIS Pine when in a group is one of the most massive of all Pines, owing to its stout sturdy

soil and in exposed places, although in the latter position its rate of growth is of course much slower than where it is sheltered. As a nurse tree or for plantations it is largely used; indeed, for such purposes it is in many places preferred to the Scotch Fir. One great advantage possessed by the Austrian Pine is its more rapid habit of growth, and on the score of hardiness it is surpassed by none, braving as it does our severest winters with impunity. It belongs to the two-leaved section—one that includes several of our best known Pines, such as the Cluster Pine (*Pinus Pinaster*), the Stone Pine (*Pinus Pinea*), the Corsican Pine (*Pinus Laricio*), the Scotch Fir (*Pinus sylvestris*), and others. The leaves are from 4 in. to 5 in. long, stiff, and sharp pointed, but this species is too well known to need minute description. It is, as the name implies, a native of

them being very large; the plants were thus literally taken up without roots, and very little hopes of their succeeding were entertained. In about three years, however, they thoroughly re-established themselves, and are now in a magnificent condition, the whole space of the wall being covered with vigorous foliage. They were replanted in ordinary garden mould, with leaf-mould and sand added, and heavily mulched. Nothing could be more satisfactory than their present condition, and, considering that the stem of the large one was much decayed when subjected to removal, the result is the more remarkable. Another instance of even more severe treatment is that of a plant removed from a distance to Joldwynds; in this case no care whatever seems to have been taken with the plant, and very little interest shown as to whether it grew or not. The plant was torn out of the ground and the roots hacked off in a most careless manner, in addition to which it received very rough usage in the matter of transport. That, too, has shown signs of extraordinary vigour, and promises to make a very fine plant. If these instances of transplanting Magnolias, as I believe them to be, are authentic, having been communicated to me by the gardeners at each place, how easy it would be to furnish a large space of wall in a short time with such a desirable plant—certainly a great gain in point of time as compared with waiting for young plants to assume such proportions, and I have seen large plants cut down when pulling down old buildings, being considered useless, which if they could have been moved with the facility and success described above would in reality have been most valuable.

E. D.



Cone and Leaves of the Austrian Pine (*Pinus austriaca*).

habit, the density of its leaves, and their dark green colour. When standing singly it retains its bottom branches for a very great length of time, forming a blunt pyramidal tree, and one that from the solidity of its appearance is well adapted for planting as a contrast to other and more elegant forms of Coniferae. For the embellishment of parks and places where bold and extensive planting is carried out, it might be employed with advantage, as its growth is rapid, and a clump of it stands out conspicuously amid all surroundings. When old it forms a column of from 80 ft. to 100 ft. in height, crowned with a tuft of branches after the manner of the Scotch Fir, but it differs from that in the more regular arrangement of its branches, its darker and more rugged bark, and in its having a greater depth of colour than the steel grey hue of the native Fir just named. As regards soil or situation, this Pine is in no way fastidious; it thrives equally well in good

Austria, but it is principally found in the mountainous districts.

ALPHA.

### TRANSPLANTING MAGNOLIA GRANDIFLORA.

Two instances of the successful transplanting of this noble wall shrub have come under my notice which may interest some of your readers. When some few years ago Abinger Hall was rebuilt, two very fine Magnolias, one covering upwards of 150 sq. ft. of wall surface, the other somewhat smaller, were transplanted from the old hall to the new, very few roots were found to have made their way into the soil outside the house, the main roots having penetrated underneath the foundations and ramified under the floors. The gardener, in order to release the plants, cut the roots asunder with mallet and chisel, some of

### OLD ELMS.

THERE are now growing at Haverland Hall Park, Norfolk, three very singular and interesting old Elms. They are standing in a group some 100 yds. or so east of the beautiful little church, rebuilt by Mr. Fellowes, the present proprietor of the estate, some thirty years ago. They are in the midst of other trees, but they form a group of themselves, being of a date far anterior to anything with which they are associated, though there is no lack of good trees in the park and in the wood, which forms such a glorious background to the lake. The first or outside tree is a well-grown specimen, measuring 21 ft. 6 in. in circumference at 5 ft. in height; it is 10 ft. to the first branch, from whence spreads out a magnificent head, having a diameter or spread of branches of about 12 ft. The second tree is a very curious specimen; near the ground it measures 22 ft. round, but about 5 ft. up a large burr has grown out of it which of itself girths 23 ft. 6 in. This has at one time thrown out a large arm, the whole of which is now dead. The portion now alive consists of part of the trunk—in fact nearly the whole of it, and a large arm which has grown out of it is quite sound, and measures 14 ft. 6 in. about 3 ft. above the burr. The third is another curiously developed tree, but not so large as the others. It only girths 18 ft. About 6 ft. from the ground this tree has also thrown out a large burr which measures 19 ft. in circumference, and from this burr a large arm has sprung, having its chief development eastwards, where its branches have a spread of 50 ft. The diameter of the branches of this tree, which notwithstanding the unwieldy burr is perfectly healthy, is 115 ft.

There is also now standing the remains of what was once a very fine Elm tree in the grounds of Abbots Repton Hall, near Huntingdon. The top has disappeared long ago, and the trunk is quite hollow. It must once have possessed a long, straight, handsome bole. It measures 21 ft. in circumference at 5 ft. from the ground. It is the largest tree in the parish, and is known as Lady Grace's tree, though how or why it obtained this appellation I could not learn. When at Killerton last summer Mr. Garland showed me the butt end of an old Elm blown down that measured 7 ft. in diameter; but Killerton is the home of fine trees.

E. HOBDAV.



**The true Service tree** (*Pyrus Sorbus domestica*).—A tall slender tree, growing in this rather rare tree, growing in the pleasure grounds at Longleat, has borne a good crop of reddish brown cheeked miniature Pears this season, but the recent hurricane having showered them down to the ground, on examining the fruit I find the greater number of them are seedless; a few of the largest sized Pears contain one or two pips, but are not quite ripe yet. The height of the tree is 76 ft. Its stem is clean and clear of branches up to 34 ft., where it divides into a few branches and forms a rather meagre looking top; the stem girths 3 ft. 9 in. at 5 ft. above the ground, and contains 20 ft. of timber.—G. B.

**Giusti Garden, Verona** (p. 353).—Your readers will be sorry to learn that the winter of 1879-1880 has irreparably damaged, if not absolutely killed, the grand specimens of *Cupressus sempervirens* in the Giusti Garden. Those which were not killed had their close-pressed upright branches so much opened out by the weight of snow which fell in that severe winter, as entirely to destroy the peculiar spire-like appearance of the trees. They were the finest *Cypresses* I knew on this side of Constantinople. Bay trees (*Laurus nobilis*) of great age and size were, at the same time, killed to the ground.—R. M. R.

**Ceanothus Gloire de Versailles**.—This delicate blue-flowered bush is a descendant of one of those which abound on the sunny hills of California, but which, unfortunately for our gardens, do not bear our winters well. Still it seems harder than the rest, otherwise we should not have had such a beautiful bunch of it the other day from the gardens at Highclere, a bunch at first sight resembling a fine, but delicate Lilac. Few plants are more valuable for placing against a warm wall. We know not if it would grow away from that shelter successfully; still, Highclere is a hill garden, and not so very warm. The amount of flowers an established bush of this affords for cutting is quite remarkable.

**Cornus Mas** (Cornelian Cherry).—This old-fashioned shrub may be said to be one of the early heralds of spring, as it displays its yellow flowers on leafless branches in February. During summer it is one of the least attractive of shrubby plants; the foliage is by no means handsome, and being of a squat style of growth it is less conspicuous than most other shrubs. It is seen to the best advantage when raised above the ground level, or hanging over a wall or bank. It looks well when in blossom on the banks of an island or pond. A goodly sized bush of it hanging over a bank on an island in a pond at Longleat is at the present time quite effective and ornamental on account of its showy display of bright Cherry-like fruit. I do not remember to have ever seen a plant of this species so beautifully fruited before.—G. B.

#### WILD FRUITS.

**SELDOM** in this north country have we such crops of wild fruit as meet one's eye at every turn this year. Brambles and Elderberry, both of which are so extremely useful for making jellies and wines, are very plentiful. The Mountain Ash, or, as it is called here, the Rowan tree or Quicken tree, is exceedingly handsome with its heavy crop of brilliantly coloured fruit and handsome foliage. This tree is the badge of the clan McLachlan, and Sir Walter Scott has immortalised it, as he did many others in his time. Great quantities of the Rowan tree berries have been brought to the large towns of this district and sold in the fruiterers' shops for button-holes and hat ornaments for ladies, who have worn them extensively. Of equally as much beauty and much more dangerous is the fruit of the Yew, with its delicious looking, fleshy covering. This is the part eaten by the small birds which feed upon it; they do not eat the seed itself. Heavy crops of these may be seen wherever the Yew is grown in quantity. Christmastide is seen looming in the distance through immense strings of Holly berries, which are always suggestive of that festive season.

Berberis berries are very plentiful, as also are the dull, dusky, bluish-looking fruit of the flowering Currant (*Ribes sanguineum*). Cotoneasters and evergreen Thorns, trained against cottage walls, may be seen everywhere laden with brilliant scarlet berries. Sycamores, Planes, Oaks, Chestnuts, Ash, and, in fact, all the forest trees, as well as ornamental shrubs, are each and all heavily laden with fruit. If the old saws of the quantity of "Hips and Haws" indicating the number of "snaws and blows" are true, we are surely on the verge of another Arctic winter of equal severity and rigour to the last three. Time will show.

OLD MORTALITY.

#### GARDENING IN GRAVE-GROUNDS.

Two or three years ago I gave in **THE GARDEN** some hints on this subject; since that time I have had some experience in this particular branch of the profession, and I have now no doubt that the conditions set forth in "God's Acre Beautiful" will come to pass, but we may not live to see the accomplishment of a "consummation so devoutly to be wished." In the meantime we ought to try to make the most of the subject, viz., giving it our support as much as possible. The way in which most burial grounds of the present day (always excepting the so-called "fashionable" places) are kept is not very creditable to the "powers that be," while in those that are better cared for the style of "bedding out," and otherwise turning the place into a gay and gaudy promenade or public park cannot be too strongly condemned. Burial grounds may be made solemn without being sombre, and quiet without being dull or forbidding. I do not object to the use of any particular flower, or class of flowers; it is the way in which they are used to which I object. We want ornamentation without excessive decoration. This may perhaps seem a distinction without a difference, but it is not so. A burial ground may very properly be ornamented with every description of flowers, shrubs, and trees, both choice and common, but it is no place for the obtrusive display of the same. Planting flowers on graves is now much more practised in the north than it used to be; in fact, it was comparatively unknown in the days of the parish churchyard, only putting in an appearance with the modern burial ground. Strewing flowers about the graves is much older. One of the requests of the ill-starred Earl of Derwentwater was—

Let a solemn requiem be sung  
From Hexham's holy towers,  
And let six maids of fair Tyneside  
Scatter my grave with flowers.

In the poorest parishes many people cannot afford to pay the fees required by the burial board for the decoration of their graves, but are wishful to do something themselves if allowed. In some places they are prohibited by the board, which allows no one but its own servants to plant anything on graves. This may be right, or it may not.

Another far more disheartening thing to the possessors of decorated graves is the practice of many burial boards making the Grass of the burial ground into hay for sale, thus keeping the place almost waist deep in Grass in the best season of the year. There is no necessity for this; but the members of burial boards—like those of other public bodies—are now drawn so much from that class which is always clamouring for popularity among the people—men who but for Goschen's Act could not have held seats on any board, that everything has to give way to the false and wearying cry of economy. Burial grounds were never intended to be made into model farms, however desirable it may be to keep down extravagant expenditure. The Grass in every burial ground in the kingdom

might be mown off as regularly as if it were a lawn in front of a mansion. With short Grass all over the place people could walk about with some degree of comfort and pleasure. In nearly all the burial grounds that have come under my notice the walks are every one as straight as an arrow, though this need not necessarily be so, more especially now that the religious distinction between consecrated and unconsecrated ground is partially cleared away by the Burials Amendment Act of September, 1880. Nothing is so tiresome to look at as long straight roads or walks. Of course there will be objections to winding walks on the score of the everlasting economy principle, getting all the sections square and so on.

Tree planting, too (always a difficult thing to do right), is nearly always done wrong in grave grounds. Townspeople, of whom burial boards are usually composed, have, as a rule, no idea at all about planting trees beyond having an avenue, however much it may be needful or necessary to avoid such a thing. Avenues are all very well, but one does not see an avenue properly planted or placed once in a lifetime. After the avenue then they must go over the place, dotting down their precious trees like currants in bakers' pastry. Distinct and effective groups are rarely if ever seen. Architects (so-called) have often too much to do with the planting of trees about new places. Altogether, what with the man clothed in a little brief authority, and the man who knows nothing at all about trees or how to plant them any more than he knows how to build a house from one of his own plans, the planting is generally ruined. Fine open stretches and sweeps of turf, relieved by effective groups of trees or shrubs, suitable to the locality and climate, ought to be aimed at, and can only be secured by appointing men of experience and skill to carry out the work. It will be seen that I would have burial grounds as well, and better, if possible, cared for than public parks, without letting them sink to the level of promenades, or without effecting the gaudy style of gardening so common in them. Cleanliness ought to be scrupulously observed; after that, becoming planting of flowers to ornament the place, and encourage the people to come to it, without making it an attraction. Our thoughts ought to be directed to another channel than that of feasting our eyes on the beauty of a bed or border when we approach God's acre. Therefore, let all planting be done with the view of giving the place that charm of repose and quiet that is so suggestive of the common lot. Persons in charge of burial grounds would do well also to preserve and encourage as much as possible the birds of the district. Nothing can be much more beautiful than the idea that the city of the dead is also a sanctuary for the humblest and most beautiful of Nature's creatures. Above the door of my office two broods of swallows were this year safely hatched, as were also other two within a few feet of the bell of one of the chapels. They never seem disturbed by the tolling of the bell during the period of incubation. Burial boards of former days, I might say in their younger days, were extremely fond of appointing ex-policemen to the office of superintendent without ever considering their suitability for the post. That idea is happily fast being exploded, and practical gardeners of experience and ability are now sought after for superintendents. In a few years' time a nation will have arisen which knows not the Joseph of other days, and under such teachings as are to be derived from works like "God's Acre Beautiful" and the new edition of "The Wild Garden," we may hope for a better and more systematic style of gardening in grave-grounds than has hitherto prevailed.

OLD MORTALITY.



## THE FRUIT GARDEN.

## THE APPLE.

*(Continued from p. 425.)*

**Standards** for orchards with clean stems 6 ft. or 7 ft. high being in greatest demand sorm the majority of Apple trees grown in nurseries, and those budded or grafted on Crab or free stocks and well attended to as regards cultivation make rapid progress. If kept free from insects and other pests that sometimes are very persistent in their attacks on the young wood, the leading shoots from grafts or buds will reach from 4 ft. to 6 ft. high by the end of the season, but in habit different sorts vary so much that what would be a good average growth for some of the small wooded table Apples would be but a poor growth for erect growing kitchen Apples, and even these vary considerably, for Stone's Apple or Loddington is one of the worst to form a tall standard quickly. It is frequently, therefore, grafted standard high on other sorts. I observe that this variety is invariably staked in the nurseries during its first year's growth, and as it makes top growth fast it should be loosely tied or cords should be run for its support the entire length of the row. Care should be taken to get as complete a union of scion and stock during the first year's growth as possible; the clay should be removed as soon as the scion is in active leaf growth, and the ties removed as soon as they can be safely dispensed with. Some time in August the heel of the stock that was left opposite the graft should be cut clean off in an upward slanting direction, so that as the scion swells up it may completely cover the junction with a layer of young wood before winter sets in. This can only take place when the scion and stock are in such close relationship that they make about equal rates of growth. If the scion overgrows the stock it will generally rush into bearing quickly, but its existence will be brief. In order to grow trees large enough for orchards they must make rapid growth in the earliest stages of their existence; consequently, any over-precocity is detrimental to them. Provided all has gone well with the young trees, they will at the end of the first season's growth be fit to send out as maidens or one-year-olds, and many extensive growers of fruit buy their trees at this stage and train them according to their wants.

In the second year the same routine of cultivation is followed, viz., keeping the surface soil free from weeds, and frequently stirring it to keep it loose and friable. To facilitate this the stocks should be planted 3 ft. apart from row to row, a distance which enables a set of hoes to be worked by a pony or donkey, and in this way a large tract of ground can be kept cheaply in thoroughly good condition. In ordinary seasons the leading shoots will generally attain the desired height by midsummer, when their points are pinched down to a few buds above where it is desired the head or main branches should start, and in strong young trees a really good head is formed after midsummer or a good standard fit for being finally planted in the orchard two years after grafting. Up to this time the leaves and small shoots will have been left on the stem, as they help to thicken it, but they may now if extending too far be shortened or pinched to encourage the formation of a head of leading branches; in an ordinary way it takes three seasons to make a first-class orchard tree. The leading shoots should be shortened to where the wood is firm, always cutting to a bud that points in an outward direction to encourage an open spreading head; only such shoots as have room to develop into main branches should be left, as near equi-distant

from each other as possible; any that cross or grow inwards should be cut back to form spurs. The same routine of cultivation is followed as in former years, but after midsummer the stem is cleared of its superfluous growths, which are cut clean off close to the stem. The latter should now be too strong to bend with the weight of the head, and the cuts will get well healed over before the season for lifting has arrived.

**Half standards.**—These are formed in the same way as standards, but in less time, for the maiden tree is usually tall enough to top down to the height required by the end of the first year, and a good head of shoots is formed by the end of the second from the graft fit for finally planting, the lowest buds and shoots being pruned in closely during the summer. Trees with short, stiff stems about 4 ft. high are in great request for mixed orchards, and, except for the reason of getting the head of branches out of the reach of cattle, nothing is gained by a long stem, which needs staking. Many orchards are under-cropped with bush fruits of various kinds, and for these half standards with good clear 4-ft. stems are preferred. The bushes may be cleared out as soon as the Apples begin to obstruct the light too much to make them profitable, and the soil may be sown down with Grass seeds for sheep feeding.

**Dwarfs or open bush trees** are very useful either for private establishments or market gardens. They are quite distinct from the miniature dwarfs that are grown on Paradise stocks. Those just named are on the Crab or free stock, and are merely a modification of the preceding form, but with the stem reduced to a minimum. The head of the dwarf bush tree starts directly above the graft, and generally consists of three main branches; therefore any grafts that have thrown out three shoots of about equal strength may thus be utilised, and if cut back at the winter pruning will originate from six to nine leading shoots, which will form the groundwork of the future tree. The main object is to keep the centre of the bush open. No more leading shoots must be allowed to grow than can be fully exposed to light and air. They may be planted finally as maidens or as one-year-trained trees. The usual distances apart are from 12 ft. to 15 ft. Although in gardens great care is sometimes taken to train these bushes with hoops and stakes, I find quite as good shaped ones, and certainly as fruitful, in market gardens where they are merely pruned into the desired shape, always cutting to a bud that points in the direction required, and pinching or cutting back all the side spray, so as to form a mass of fruitful spurs from base to summit of the main shoots. They generally grow somewhat erect for the first few years, but the heavy crops which they bear soon bring them down until the outer branches assume the desired cup shape, and the quantity of fruit an orchard of this kind will bear is almost incredible to those who may not have seen good examples in favourable situations. Alternate rows of bush trees and standards or half standards is a very good mode of planting where the soil under them is to be kept cultivated, as the trees get a more equable share of light and air than when all the heads are on one level.

**Pyramids.**—These are useful, as they require neither stakes nor ties. They are ornamental, too, as well as useful, being especially suited for the sides of walks, and if planted from 12 ft. to 15 ft. apart their produce forms a valuable addition to the fruit store. If planted as maiden trees, the best plan is to let them grow without cutting them down too hard, merely shortening the leader a little to induce it to throw out stronger shoots from the base.

When the leaves have fallen the following autumn prune it down to about 1½ ft. high, and shorten the side shoots to where the wood is firm, always cutting to buds that point in the direction the following year's shoot should take. Thus having laid the foundation of the tree, any attention needed in future will be summer pinching, which if carefully done will greatly reduce the need for much winter pruning. Commence by stopping all shoots that appear to be monopolising more than their share of sap, as very much of the success of trained trees depends on the maintaining an equal balance of growth in all parts. The leading shoot must be kept down till the lower part of the tree gets furnished, but under favourable circumstances the leader may extend from 1 ft. to 1 ft. 3 in. per year until the desired height is attained. As pyramids are supposed to form a perfect cone when fully grown, the height and circumference at the base must be proportional; but nothing is gained by having very tall pyramids, any extra extension of top being at the expense of the lower branches; from 6 ft. to 9 ft. is high enough for any useful purpose. If it be desired to give the young tree a perfect pyramid form at once, a hoop or strong wire must be run round it for fastening the lower tier of branches to, and the upper tiers must come down in succession, but I find that if allowed to grow more naturally with the points inclining upwards, the balance of growth is much more evenly maintained, and as soon as the trees get heavily cropped the weight of fruit will gradually bring back the shoots to their desired place.

**Espaliers.**—These form one of the most useful modes of growing dwarf Apple trees, and are well adapted for amateurs with limited space, for if the trees are worked on the Paradise stock they may be kept in very close compass, and many kinds may be grown in a limited area. As a rule they are bought in from the nurseries with three or four tiers of branches already started, but if bought in and planted as maiden trees, the leader is cut down to within about 1 ft. from the ground, and only three shoots are permitted to grow—one to be the leader, and one on each side to form the lower tier of branches. These should not be tied down in a horizontal position at first, but should be brought to it by degrees. The following season the leader must be cut back to three or four buds above where the next tier of branches is to be, for if trained to a wire trellis the horizontal shoots should spring a little below that level. The wires are usually 9 in. or 1 ft. apart; therefore, if the leader is cut down to the next wire each year, the trees will soon cover a trellis, for about five or six tiers in height is ample for any purpose. After the tree is formed its future management will consist principally of summer pinching, for in this way its strength may be more readily equalised. Commence by pinching the uppermost part of the tree first, so that by leaving a larger amount of foliage on the lowest tiers of branches they will recover the balance of growth, which from being unfavourably placed they may have lost. A decided improvement on the old horizontal espalier is that of planting at closer intervals on dwarfing stocks, and after the third year of training in horizontal form turning the points up at equal distances apart and training erect, leaving five or seven shoots to each tree. The trellis is thus quickly covered. The shoots are more equalised as regards strength, and on the Paradise stock they require very little pruning if carefully pinched in summer.

**Cordons.**—These have of late years become popular, more especially for the choicest kinds of Apples, such as the White Calville and the



Lady Apple, or any that require a little extra warmth to bring them to perfection. I have lately seen very fine examples of this mode of training at Barham Court, where every foot of bare wall is thus utilised, and at the foot of Peach walls a double cordon is planted in front of the Peach trees and trained right and left about 1 ft. from the wall on a strong galvanised wire. They are easily protected in spring, and the heat radiated from the wall greatly helps them. These do well on low terrace walls with a southern aspect, or even upon a boarded fence, but it is as an edging to the fruit tree quarters that cordons are mostly grown. The single cordon is simply one shoot from the bud or graft. The usual plan is to plant maiden trees and cut them down quite close to or just below the height required for the trellis; during the first season one leading shoot is allowed to grow unchecked, the rest of the shoots being pinched moderately close to form spurs. The leader is cut back to thoroughly ripened wood the following autumn, and tied down to the horizontal wire. The following summer the leader is tied down as it extends, and the shoots that spring erect are pinched to five or six leaves, the spurs being shortened or thinned out at the winter pruning. When the leader meets the stem of the next cordon it is stopped, and a continuous wreath of fruiting spurs is thus maintained from end to end of the line simply by pinching the shoots in summer, twice thinning and shortening the spurs, and securely tying in winter. A little fresh mulching put on at mid-summer to keep the surface roots supplied with food and from suffering from drought is all they require to keep them in good condition for many years.

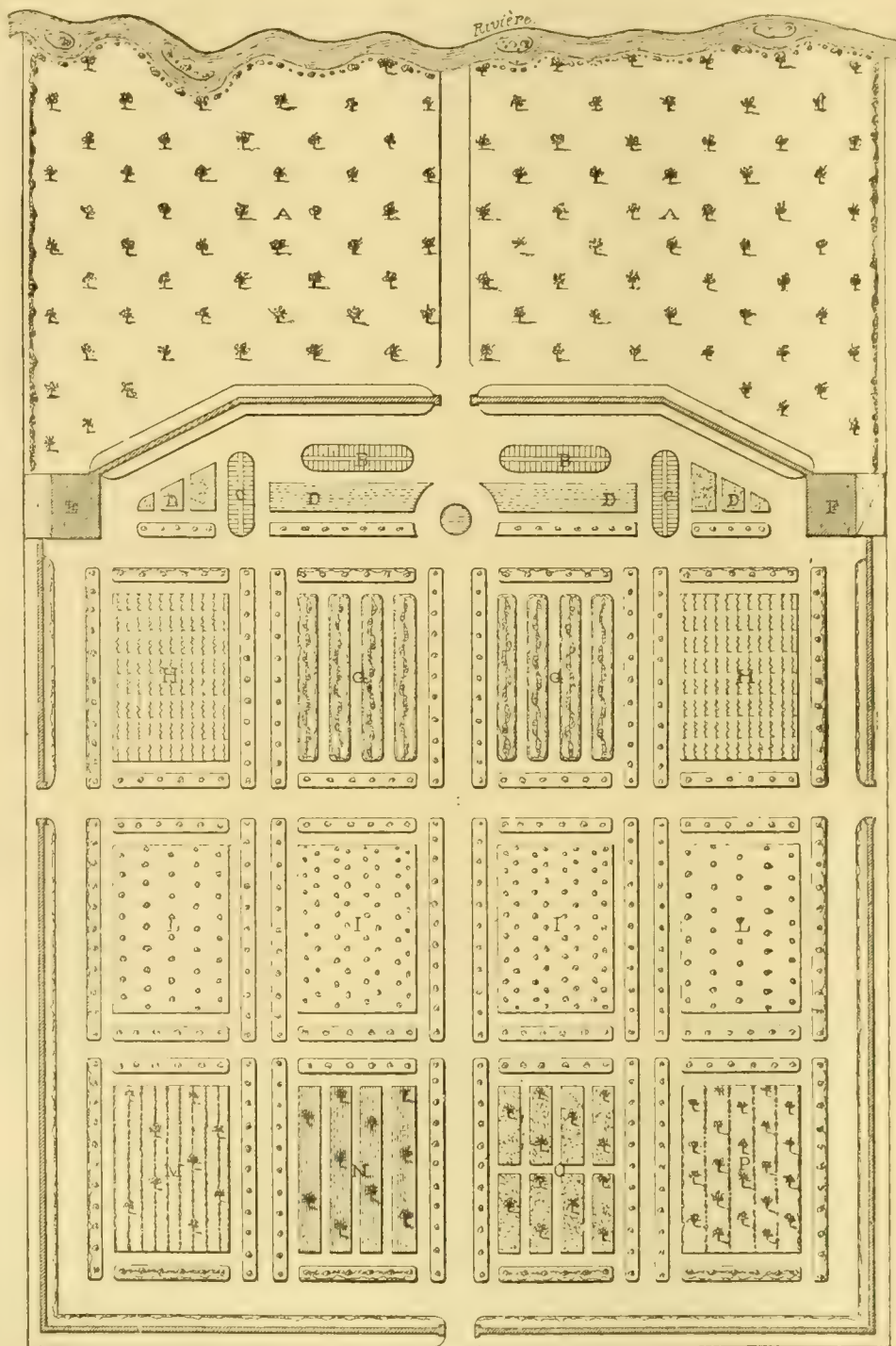
**The double cordon.**—This is treated in every respect like the single cordon; only two

shoots are retained and trained right and left until they meet the points of the next cordon. There can be no question as to the merits of the system, for, looking at the fine wreaths of high-

than they are. When it is desirable to have some fine specimens hang as long as possible on the trees, the only precaution necessary is to put a little extra litter under them, on which if they fall they are not injured.

**Apples for walls.**—In addition to horizontal cordons that are so useful for covering low walls or bare spaces below Peaches and other choice fruits, walls may be quickly covered with them trained obliquely the same as Pears, and I have no doubt they would be more useful in northern counties than they are in the south, where most kinds of Apples reach perfection on open standards. When, however, one finds the difference in value between good and bad fruit in the market, it is quite worth considering whether or not our choicest Apples should not be afforded in some cases a wall, for as long as we give them secondary positions and treatment we shall only get secondary results. To get walls entirely covered with Apples I should prefer oblique cordons or young maiden trees planted  $1\frac{1}{2}$  ft. apart, and trained to wires fastened to the wall in the desired form. It would not take a great extent of wall to furnish a certain supply of the choicest Apples for a private family, and when we consider the length of time they are available for dessert, and the very meagre results that too frequently attend wall tree culture in the case of other fruit, we are led to wonder why the choice kinds of Apples are not, as has just been hinted, more largely utilised for wall trees, as a really good Apple is worth more on an average than a good Peach or Apricot.

**Apples as pot trees.**—It may seem useless to grow Apples as pot trees in a country where, at the present time, Apples are lying in heaps as if they would never be consumed; yet they are so grown in quantity and repay good



Plan of a Fruit Garden. (Designed by Mons. Ch. Baltet).

AA, orchard; B, forcing houses; C, early fruit houses; D, fruit tree nursery; E, F, fruit rooms, sheds, &c.; G, espalier Pears; H, Vines on trellis; I, Apples trained in goblet form; L, pyramid Pears; M, standard Apricots with Gooseberries beneath; N, standard Peaches with Strawberries beneath; O, standard Cherries and Raspberries; P, standard Plums and Currant bushes.

coloured fruit of Emperor Alexander, Cox's Pomona, Cox's Orange Pippin, and similar sorts, or the gigantic specimens of Belle Dubois or Warner's King and Stone's Apple, the wonder is that cordons are not much more largely used



culture with a greater certainty than almost any fruit cultivated now-a-days in gardens, for there is always a demand in Covent Garden for the choicest samples procurable, even when indifferent fruits are a drug in the market. For growing in pots nothing beats dwarf pyramids on the Paradise stock; these potted in 12-in. pots, carefully pinched in, and top-dressed annually will yield enormous crops of the finest fruits, and of sorts that cannot be got to high perfection by any other means. The white Calville and other tender skinned Apples that are nearly transparent when ripe will pay for the protection of glass in some form or other, and a few well established trees plunged in the orchard house and carefully tended will be found to yield a valuable addition to midwinter desserts. Now is the time to procure dwarf trees that have been carefully pinched in the nursery; pot them in good stiff loam, and plunge them in a bed of leaves; they should not be allowed to carry fruit the first season, and all strong shoots should be carefully pinched, but the following spring they may be removed to the orchard house, and take their place with other bearing trees. Top dressing, pinching, and above all a regular supply of liquid food constitute the main elements of success in the cultivation of Apples under glass. JAMES GROOM.

#### A FRENCH FRUIT GARDEN.

As this is generally the season for forming orchards and carrying out planting in all ways, a hint or two on such subjects may probably be gleaned from the accompanying plan of a fruit garden in France, designed by M. Baltet, the well-known pomologist: The ground slopes naturally to the river, a valuable adjunct to a fruit garden; a fruit tree hedge encircles the orchard department, strictly so-called, and high walls the other part of the garden. The walls are furnished with Peaches and Apricots on the south aspect, Vines on the west, Peaches on the east, and Pears on the north. The walks are skirted by Pears in pyramids, fan-trained espaliers, and cordons. Quinces, Medlars, Nuts, and miscellaneous fruit occupy the river boundary. A fruit garden of this kind possesses many features worthy of imitation in this country, though, of course, the climate does not admit of Peaches and Apricots being grown as standards or Vines away from walls.

#### PREPARING VINES FOR FORCING.

In cleaning and preparing Vines for forcing it is the usual practice of many to strip off a large quantity of loose bark from the rods, and sometimes to scrape them over with a knife, so that they have more the appearance of so many walking-sticks than living Vines. Having undergone this process, they are generally painted over with a mixture of sulphur, soot, lime, Tobacco juice, and soft soap, and a little clay or cow manure is added to make it stick. This cleaning and dressing is intended to destroy any insects or their eggs which may be on the Vines. The removal of the bark would doubtless prove effectual in destroying many, but it would be injurious to the Vines. Such a remedy would therefore possibly prove as bad or worse than even the presence of the insects themselves. In cases where Vines have been badly infested with mealy bug and treated as above, I have noticed that as soon as a brisk heat has been applied to the house, the bugs have emerged from parts that escaped the eye of the operator at the time of cleaning, and appeared thankful for the shelter they had received underneath the dressing through the cold weather.

Having been troubled with mealy bug on Vines to a considerable extent, I found it far the best plan not to remove the bark, but to take a medium-sized painter's brush and, with a mixture of Gish-

hurst compound, or soft soap at the rate of about four ounces to the gallon of soft water, thoroughly wash the rods, working it well into every crevice, and if this could be repeated on some wet day, when men could not work outside, very few insects would be found to survive after such treatment. If the woodwork could not be painted it should be treated in the same way as the Vines, and the walls should be thoroughly washed with hot lime. If the borders are inside remove 2 in. of the surface soil and replace it with fresh loam and manure in equal proportions with an addition of a few  $\frac{1}{2}$ -in. bones. Should the border be outside, of course it will be quite as necessary to thoroughly cleanse the floor of the house. I also treat Peach trees in a similar manner, but greater care is necessary in using the brush, and the Gishhurst or soft soap should not be so strong as that recommended for the Vines. Where Vines are infested with mealy bug, and having been treated as advised, it is necessary to keep a watchful eye on them through the season, destroying the bug as fast as it makes its appearance, and thus preventing its getting into the bunches. ROBT. D. LONG.

#### OUT-DOOR GRAPES.

In a village in Huntingdonshire, I noticed a few days ago that nearly every house on the south side of the street was furnished with a Vine bearing either black or white Grapes, the bunches being both fine and numerous and pretty well ripened. Many of them must have weighed upwards of 1 lb., and everyone of them which the Vines had put forth had been allowed to remain, doubtless they would have been finer. The public road or street came within a couple of feet or in some cases less of the walls of the houses, so there could have been little or no border, and the roots had doubtless gone into and under the broken stones which formed the roadway. Here the roots would find moisture, and also warmth, as the sun would strike with considerable power upon the south side of the white roadway, and the reflected heat would help both to ripen the fruit and the wood; the latter, though not strong, looked hard and brown. I am convinced means might be found if the south walls were made the most of to supply ourselves with good home-grown Grapes—at least good enough for wine making.—E. HOBDAV.

— Out-door Grapes are exceptionally good this season. I have lately seen crops in this locality that are quite equal to the average of what are called cool house Grapes; in fact they are far less liable to mildew and insect pests on open walls than in cold houses. On a south aspect, the following sorts were in excellent condition, viz., Royal Muscadine, Foster's Seedling, and Buckland Sweetwater, with bunches many of them over 1 lb. Black Hamburg and Esperione were the best black Grapes, but if I only grew one sort I would select the Royal Muscadine for certainty of cropping and exquisite flavour. Foster's Seedling is quite at home out-of-doors, having the finest bunches of all, but it is not so early as Royal Muscadine, and consequently liable to suffer when winter sets in early. The early part of this season was all that could be desired, but the latter part has been cold and cheerless. There is nothing new in the cultivation of out-door Grapes; any one with a few spare feet of wall with a south aspect may count with more certainty on having a crop of eatable fruit, provided he has a border of good kitchen garden soil, than if he grew Peaches or Apricots. For low walls the Vines should be grown on the long-rod system, that is, running up young rods from the base every year, and cutting away those that have fruited, as is done with Raspberries; for high walls they must be either spurred in or trained in tiers in the long-rod style. This way of training undoubtedly produces the finest bunches and the most prolific show of them, but to have good sized berries and bunches they must both be carefully thinned, and the shoots stopped and regulated the same as those under glass.—J. GROOM, Linton,

#### LATE BLOOMING FRUIT.

WOULD you kindly name for me a few of the kinds of Apples that bloom late? My object is, of course, to select those most likely to escape spring frosts. From the same point of view, is there any practical difference in the blossoming time of Plums to influence a choice? Would the tall Lombardy Poplar make a good screen from north-easterly winds? or is it likely to shelter insect foes? PYRUS.

[The latest flowering Apple I have yet met with is Court Pendu Plat, commonly called the Wise Apple, from its flowers not expanding until quite the end of May, or sometimes early in June. It is an abundant cropper and good table or cooking Apple, keeping well until May of the following year. Graham's Russet is a good late flowering kitchen Apple, and when in flower is very beautiful, having very large blooms. These, too, are the latest sorts with which I am acquainted. The following may be added as tolerably late and good bearers, viz., Northern Greening, Norfolk Beefing, and the Wellington for kitchen; and for dessert, Sturmer Pippin, Golden Knob or Russet, and Scarlet Nonpareil. I may add that some of the earliest flowering Apples, such as the Codlins, are quite as prolific as any sorts we have; therefore I do not always charge our losses to spring frosts. Plums are noted for their precocity in the way of flowering, but they withstand a great amount of cold if dry; in fact, Plums frequently set best when cold dry weather prevails during their flowering time, and I do not think there are any sorts sufficiently late in flowering to make any practical difference as regards their cropping properties. The best sorts in that respect are Rivers' Early Prolific, The Czar, Early or New Orleans, Victoria or Dauphin, Diamond, Pond's Seedling, Belle de Septembre, and Grand Duke. Tall Lombardy Poplars will afford shelter about as quickly as any trees grown, but I would supplement them with Spanish Chestnuts or some Scotch Firs, for the Poplars are liable to break if exposed to heavy gales of wind. If a belt of Chestnut is planted, a few may grow into tall trees, and the rest may be cut as underwood, one-half of the belt being cut down and the other half left to get up to a good height to form shelter, so that there would always be a break to the wind. They make excellent Hop poles, or for park fencing when split and peeled, and they do not encourage insect pests.—J. GROOM, Linton.]

#### ORCHARD HOUSE TREES.

WILL some experienced grower of these in pots kindly name a few of the best sorts of Apricots, Figs, Plums, Peaches, and Nectarines? also the best six Grapes for a late Vinery?—G. R.

[It is not easy to say which are the best varieties of fruit trees for orchard-house culture, as some sorts succeed better in certain localities than in others. The following, however, will in most cases be found suitable for the purpose, viz., Apricots: Moor Park, early Moor Park, a kind of good quality, and considerably earlier than the ordinary Moor Park; Hemskirk, Large Early, Kaisha, and St. Ambrose. Figs: Lee's Perpetual, Castle Kennedy, Carrington, White Marseilles, Black Bourjassotte, Grizzly Bourjassotte. Plums: Green Gage, Coe's Golden Drop, Jefferson, Washington, Reine Claude Violette, and Kirke's Plum. Peaches: Dr. Hogg, one of the largest early varieties, and of excellent quality; Acton Scot, fruit small, but bears freely, and excellent in quality; Crawford's Early, very large, with yellow flesh; Royal George, Noblesse, and Grosse Mignonne. The best late sorts are Barrington and Late Admirable. Among newer or less known kinds are Dymond, very handsome and good; Prince of Wales, very large, rich and fine; Princess of Wales, excellent in quality, and very handsome; Sea Eagle, large and well flavoured; Hale's Early, a good American variety; and Stirling Castle, one of the best for forcing. Nectarines: Elruge, Imperatrice, Lord Napier, Hunt's Tawny, Pitmaston Orange, and Rivers' Orange. As regards the best six varieties of Grapes for a late Vinery



if all are desired to be black sorts, the following may be recommended, and they are placed according to their supposed value as long keeping kinds, viz., Lady Downes' Black, Black Alicante, Mrs. Pince's Black, Gros Colmar, West's St. Peters, and Venn's Black. The best late white sorts are Trebbiano, Calabrian Raisin, or, best of all, Muscat of Alexandria. But it is hardly advisable to plant this along with other late sorts, as it requires peculiar treatment and succeeds best in a house by itself. Gros Colmar is an exceedingly handsome variety, and one which produces large berries and bunches of enormous size, which hang very late if desired, and is, on that account, well worth growing, although in quality it cannot be considered to be first rate.—P. G.]

#### ROOTS TOO DEEPLY COVERED.

MR. MACKIE'S remarks on root lifting (p. 365) contain very timely and good advice, for at this season many will be starting to root prune, and will follow out the instructions faithfully of opening a trench all round and cutting both top and bottom roots off instead of carefully lifting and laying them in nearer the surface. If roots are buried out of the reach of solar warmth, either at planting time or by means of over top-dressings, no amount of attention afterwards will make the tree fruitful; but why not avoid this by planting so that the roots may finally settle just below the surface? Carefully rake off accumulations of exhausted top-dressings, and never dig the alleys near fruit tree walls or trellises. Trees planted on soil that has been trenched should be raised a little above the level at which they are to stand when the land gets consolidated. There is no necessity for large mounds; on the contrary, they should be just sufficiently elevated to keep them from sinking below the part where as a stock they were first grafted or budded; and with wall trees or espaliers at least 3 ft. in width of soil should be left wholly undisturbed for the roots. In digging borders the common practice is to work the soil uphill towards the wall, and if only a little addition is made to its depth over the roots every time it is manured, dug, or top-dressed, it does not take many years before the tree becomes unfruitful through the roots getting buried too deeply. Then the root-pruner's work begins. I have frequently lifted, or rather destroyed, unfruitful Pear trees, and in nine cases out of ten their barrenness arose from the roots being too deeply buried. When trees have been top-dressed during the summer, the exhausted material should be lightly raked off with the fallen leaves now, and buried in the open vegetable quarters now being trenched. Even if trees are planted carefully at first constant care is needed to keep them from getting buried too deeply, as in that case root lifting or root pruning is the only remedy.

J. GROOM.

*Linton.*

**Training wall trees.**—The falling leaves tell us the time is approaching for going through the routine of pruning and nailing or tying again. And as the spring always brings more than its fair share of work, I always like to get as much of this work done before Christmas as possible. I am not going to enter into the question as to which is the best system of training, whether fan, horizontal, palmette, which is a combination of the latter, and vertical or any other; doubtless all are good if rightly managed. But what I wish more especially to notice as being seasonable now is the way in which the branches are crowded together in many gardens where fan training is adopted. I have no doubt some of the debility and weakness observable in many trees is, if not due to over-crowding, at least aggravated by it. The leaves of wall trees should not quite meet between the branches, or at any rate they should not overlap each other if the wood is to be well ripened and the foliage strong and healthy. It is not easy, indeed it is hardly desirable, to lay down any hard-and-fast line as to the distance the branches should be trained from each other, as the vigour of different fruit

trees varies, but 18 in. will not be too much for Pear trees trained horizontally, especially if the trees are expected to be long lived. Some arches will in most cases do for Peaches and Morello Cherries. Early fruiting Cherries should have as much space as Pears. The main branches of Plums and Apricots if worked upon the mixed system of natural and artificial spurs, laying in a young branch where there is space, should be trained a considerable distance from each other, at least from 15 in. to 18 in. apart. The more space the tree is expected to cover, the wider apart should the branches be trained if the centre of the tree is to continue fertile. Old trees that are full of weakly wood might, by thinning and rearranging, be improved in health, and as soon as the leaves are down before the cold weather sets in is a good time to set about the work. As far as one can judge by the appearance of the wood now the trees are full of promise for next year.—E. HOBDAV.

**A few good Pears.**—Our best September Pear is doubtless Fondante d'Automne, a very hardy kind; on west walls here it has borne fine crops for nine years in succession. It is no giant in size, but a very prince among September Pears as regards flavour. Beurré Hardy is 'also good, a fine bearer, and very hardy. Its only fault is being slightly gritty. This variety grows here freely on a standard. This month (October) the good old Marie Louise is fairly beaten by Thompson's, of which I am sorry to say I have but few, the trees being young. It is the most delicious of all Pears I ever tasted, excepting Seckle and Passe Colmar, grown in the sunny south. I shall certainly increase my stock of this variety. The manner in which Pears behave in different localities is somewhat singular. I have a vivid recollection, when at dear old Chiswick, of noticing Beurré d'Aremberg quite devoid of all good qualities, while at Arundel it was really good and most refreshing, although almost without aroma. Again, that fine looking Pear, Flemish Beauty, was really passable at Chiswick, while at Arundel it is simply worthless. While speaking of Pears, I may note that Glou Moreau, Easter Beurré, and Catillac (the latter the best of baking Pears) are all exceptionally large this year and free from speck or blemish; in fact, the year 1881 will be remembered here as one of the best fruit years on record.—R. GILBERT, *Burghley.*

**Standard Gooseberry and Currant trees.**—It is strange that nurserymen do not offer these for sale; they are easily formed and very ornamental, as well as useful. The most convenient length of stem is some 18 in. or 2 ft., and the heads should be kept in compact and suitable form, by judicious summer stopping and pruning, so that when the fruit is ripe, the heads may be readily covered with lace or netting to preserve the fruit from the attacks of birds and insects; by this means, too, it may be kept until late in the season. To still further secure this desideratum, as regards Currants at least, a portion of such trees may be kept in pots plunged in the open soil, and removed into a cool orchard house or similar structure about the beginning of October; fruit may there, if desired, be kept in good condition until near Christmas. As regards the most suitable sorts for the purpose, there are possibly none better than the red and white Dutch; but the following varieties are larger in bunch and berry if somewhat less sweet, viz., Champagne, pale red; Houghton Castle, red; Invincible, red; Knight's Large Red; Mammoth, red; and Wilmot's White Grape Currant. With regard to Gooseberries, the Red Warrington will no doubt prove to be one of the best for the purpose.—P. G.

**The Cockle Pippin Apple.**—Permit me to add my praises to those of Mr. Roberts in favour of this Apple. In one situation I grew quantities of it, and it was equally esteemed for culinary purposes and dessert. The trees were standards of considerable age and size, and never missed a crop. The King of the Pippins was our next most popular Apple. But soil and site alter cases, and neither have ever prospered so well with me since.—D. T. FISH.

## THE KITCHEN GARDEN.

### THE CHINESE YAM. (DIOSCOREA BATATAS.)

THIS esculent, although not much grown, is a useful winter vegetable. Its greatest merit is perhaps its excellent keeping qualities, as, like most other deep-rooting subjects, it will keep in good condition for five or six months if the crop is well matured. I have thought it desirable to direct attention to it now, as the winter season offers a good opportunity to prepare ground for its reception in spring, for if not well prepared the roots cannot be grown to a suitable size. It is useless to expect to grow them well in soil less than 2½ ft. deep, and it should be as rich at the bottom as at the top. In order to ensure its being so the ground must be trenched to the required depth, and some thoroughly rotten manure mixed with the soil at various depths. The majority of the rootlets are perhaps near the surface when the plants first commence to grow, but as the roots get downwards they send out at numerous points fresh fibres, and unless these have a rich open soil upon which to feed the crop will be small. In a heavy soil I find coal ashes and leaf soil a capital compost to mix with the staple as well as the manure. In very light soils the addition of loam with the manure instead of coal ashes and leaf soil would be beneficial. The extent of ground to be prepared must depend upon the consumption. In my own case I trench up a bed 4 ft. wide; this holds three rows of plants. After growing them on one spot for three or four years, I change the bed to another part of the garden. I do this less often than I should do, as ours is a stubborn, heavy subsoil, and the labour of preparing a piece of ground for this plant in such a soil is considerable.

**Selection of the plants.**—This should take place in November, when the bulk of the crop is lifted. As the roots are taken out of the ground about 4 in. of the top should be cut off, and these should be stored in some dry soil out of the reach of frost till planting time arrives. These tops form plants for another year. Where plants are scarce the whole root may be cut into 4-in. lengths, and I find it better to cut them up in the autumn than at planting time, as they start into growth quicker; sets so obtained are not, however, equal to crowns formed near the surface.

**Planting.**—Before planting fork over the surface of the bed, and rake it down rather fine. Put the first row in the centre, and one row on each side 15 in. from the centre. The sets should be put in with a dibber, and should be 12 in. apart in the rows, keeping the crowns just under the surface. The first week in April is early enough to plant the sets, as if planted earlier the young growth is liable to be cut down by May frosts. The roots are supposed to be injured by frost, but we have had them in the ground for several winters without their sustaining any harm.

**Summer management.**—As soon as the young growths get a few inches out of the ground they require some support, as the plants are decidedly trailing, and if they then have nothing to which they can attach themselves they will over-run each other, thereby impeding the progress of the roots. This I have proved from experience, and therefore we use neat stakes for supports about 5 ft. out of the ground which answer admirably. Ordinary Pea sticks would, however, doubtless answer equally well. If a long period of dry weather occurs early in summer the plants will be benefited by copious waterings about twice a week. No insects or slugs seem to trouble them, but if well watered they like a hot tropical summer. The beds must be kept free from weeds, or they will rob the surface roots of moisture and other nourishment. The growth requires no training, as it takes to the supports readily.

**Lifting the crop.**—This should take place about the second week in November. Take out a trench 3 ft. deep and 2 ft. wide at one end of the bed and carry it to the other end. In getting the long roots out of the ground the greatest possible care must be taken that they are not broken in



pieces, for they are about as brittle as glass. Each root must be searched for separately by commencing to remove the soil from the surface and working downwards; any attempt to pull them out by force will be sure to snap them asunder. In a good soil and in a favourable season the largest roots will go down to a depth of 3 ft., and unless the soil is removed the whole depth they cannot be got out without breakage.

**Storing the crop.**—As soon as all the roots are out of the ground, cut off the crowns, as before advised, 4 in. long, and place them together with their tops just under the surface in a flower-pot filled with dry soil. Then set the pot in a dry cellar or other place free from damp or frost. The roots for consumption must have all the earth rubbed off them, and then they may be placed in the store in which other roots are placed. Before being sent to the kitchen they should be well washed. As soon as the crop is out of the ground the beds should be prepared again for next season by giving a liberal supply of rotten manure, and again stirring up the soil to a good depth to expose it as much as possible to the action of the winter frosts. J. C. C. CLARKE.

**The Celery crop.**—I do not remember to have seen this crop so fine and free from disease for many years as it is at present. I have seen no traces of the Celery fly, and, favoured by moist showery weather, what we call our late crops are finer than our earliest have often been in years when the foliage has been injured. Our trenches are dug out one spit deep, and dressed with the rottenest manure procurable. We make the trenches 2 ft. wide, to hold two rows of plants, with 3-ft. spaces between. The seed is sown in boxes in March, and the young plants are pricked out under glass in April, in about 3 in. of rich soil laid on a hard foundation of coal ashes. The roots are thus kept close to the plant and they lift with a ball of earth and feel scarcely any check. After planting, one good soaking of water is given, and if drought prevails a good watering once a week with liquid manure greatly helps them to make a vigorous start. We let them get nearly full grown before earthing them up, except the late sorts, that have a little soil put to them as they progress for protection to the heart as well as for the purposes of blanching. I find Incomparable Dwarf White and Sandringham Dwarf White as good as any, and Major Clarke's and Williams' Red good for late crops. Although Celery is in request all the year round for culinary purposes, we find it most appreciated as an addition to the winter salad or from October to February, and as a stewed vegetable it is one of the best and most wholesome of its season.—J. G., *Linton*.

**Carrots for market.**—Field crops of Long Surrey Carrots look well, the tops being healthy and strong, and the roots clean and bright. Good samples are realising fair prices, loads consisting of 20 doz. running out at about 3s. 6d. to 4s. per doz.—J. C., *Surrey*.

**Potato Parisienne.**—A new variety was shown under this name in Paris and obtained a certificate. It is a mid-season kind, and the raiser states that of the many varieties grown by him during the past summer this was the only one that did not "grow out" after the dry weather.—J. C.

**Southend, Darlington.**—In visiting this establishment the other day I noticed some fine examples of Pine-apple culture. The varieties grown are principally Queens and Smooth Cayennes. Of the former I was informed one was cut about a fortnight ago which weighed 5 lb. 10 oz., a beautiful symmetrical fruit of fine quality. There are still a good many to cut, and although at this late season for Queens they will average from 3 lb. to 4 lb. each. Of Smooth Cayennes there are also some good fruit which will weigh from 5 lb. to 6 lb. each. The succession plants, too, are strong and vigorous, and have the appearance of yielding good fruit. They are grown in frame-pits, in which they get plenty of light, and they are plunged in tan, and the size of pot for fruiting

them in is 12 in. I also noticed in one of the houses a magnificent plant of *Lapageria alba* furnished with a good sprinkling of flowers, which are much appreciated for wreath making.—A. MACKIE, *The Woodlands, Darlington*.

## SEASONABLE WORK.

### FLORAL DECORATIONS.

J. HUDSON, GUNNERSBURY HOUSE.

AN effective arrangement for a centrepiece for the dinner table may be made with the following flowers now in season. In the first place I will assume that we are using a stand with a base resting on the cloth, and from which springs a cornucopia, the height of which should be in proportion to the diameter of the base. To form a groundwork on which to arrange the flowers and to have a fringe to the same, we may resort to several forms of foliage. For this purpose the hardy Ferns, chiefly British, will do good service, as will also the following coloured foliage, viz., that of the *Berberis aquifolium*, *Ampelopsis*, and the many forms of *Bramble* (the cut-leaved in particular). The flowers may consist of a few blooms each of *Chrysanthemums* James Salter and Elaine, together with a few flowers of a yellow *Pompon*. The addition of some small sprays of one of the autumn-flowering *Starworts* would be effective in the case of daylight decoration, and by artificial light the white *Paris Daisy* might be used with advantage. For entwining around the stem a few sprays of *Berberis vulgaris* with its pretty little bunches of fruit will be useful, and for suspending around the edge of the trumpet use the terminal growths of the *Virginian Creeper*. In the trumpet itself might be arranged two or three forms of ornamental Grasses, among which might be dotted a few spikes of *Rhodanthé*, pink and white, or somewhat small flowers of *Helichrysums*; both of these can be secured, as suggested in last week's notes. This kind of decoration is within the reach of anyone having an ordinary greenhouse. Violets are best arranged by themselves in small vases or in other appropriate receptacles. The *Neapolitan*, *Marie Louise*, and *Russian* may now be had. Spikes of *Pampas Grass* intended for indoor decoration ought to be secured as soon as they are unfolded the entire length. This should be particularly observed in the neighbourhood of large towns where the impure atmosphere soon spoils their beauty. Cut them as long in the stem as possible and give them an airy position for a few days, after which they may be arranged in the places allotted to them. They make fine objects for sideboard decoration and for the embellishment of entrance halls and corridors. The spikes of the *Gladwin* (*Iris fetidissima*) should also be cut and suspended for a while. They will come in very appropriately for decorations for the Christmas festivities.

### FLOWERS AND PLANTS IN THE HOUSE.

AT this mid-October time, after the first sharp frosts followed by hard rain and gales, few flowers remain out of doors; still there are plenty for our bouquets. There is a grand bunch of *Tea Roses*, probably the last of the year, or the last to be had in their full beauty—*Catherine Mermet*, *Rubens*, *Safrano*, *Madame Falcot*, *Celine Forestier*, and *Gloire de Dijon*—arranged in a wide bowl with their own red foliage, the best possible accompaniment. We do not hesitate to pick these beautifully coloured unripe growths at this time of the year, knowing that if we do not cut them the frost soon will. Then there is a great sheaf of white *Japan Anemones* put by themselves in a tall jar, others cut short in single flowers with red foliage of *Virginian Creeper*; a large glass of *Mignonette*, perhaps the last picking from the open ground, and good bunches of *Czar Violets*. A walk by hedgerows and in woodlands gives many treasures for house decoration. *Bramble* leaves all shades of red, gold, and purple, unmanageable in long pieces, and usually with only two or three

well-coloured leaves on each, but very handy if the good part is cut right out with a sharp knife or secateur, cutting about 1 in. above the best upper leaf and a few inches below the lowest. They are very good in some flat basket or dish, with *Dog Rose* hips and the red-stained *Ivy* leaves that are so common in hedgerows; they also combine most charmingly with pink *China Roses*, or with other wild growths of warm autumn colouring. The *Spindle tree* is another valuable wild shrub for indoor decoration; its berries are now in perfection, and the leaves brilliant red. But the best of all wild berried shrubs is the *Water Elder* (*Viburnum Opulus*), the single form of the garden *Guelder Rose*, highly decorative both in flower and fruit, but especially in fruit, and when the leaves, as now, have taken their red colour. *Gesnera exoniensis*, with its broad, red velvet-like leaves, is one of our best table plants. We grow them on shelves close to the glass to keep them dwarf and compact, and yet shaded to develop the colour of the leaves, which is very rich and valuable under lamplight. This is a good dinner-table plant, and it is easy to grow a number to match well. G. J.

### INDOOR PLANTS.

T. BAINES, SOUTHGATE.

**Vallota purpurea.**—This is one of the most useful of all autumn flowering plants, and, considering that it is so easily grown, and when well managed increases so much faster than most bulbs, it is strange that it is not to be met with in every greenhouse similarly to *Fuchsias* or *Pelargoniums*. When the plants receive the treatment they require, the bulbs get strong and as large as medium-sized *Amaryllis*. Similar to most other bulbs, it does not do well with overpotting; it likes strong, moderately heavy soil, but cannot bear the presence of stagnant water at the roots either through defective drainage, or the soil being kept too wet during the winter, when there is an absence of growth going on. Now when the flowering is over, in place of being thrust, as they often are, in any out-of-the-way corner where they get insufficient light, and either too much water, or the opposite extreme, too little, they ought to have a light airy position in the greenhouse, and the soil maintained in a slightly moist condition, for the foliage, being evergreen, they will not bear drying off like the deciduous *Amaryllis*.

**Lachenalias.**—The time of growing and flowering of these pretty bulbous plants to a certain extent is dependent on their treatment, but in most cases they will now be making growth freely; the soil should be kept fairly moist, and if there are more bulbs in the pots than can be well supported, they may with advantage be shifted into others that are larger; but where this is done, at the present time when growth is being made there should be no attempt at separating the bulbs or disturbing the roots in any way further than giving them additional soil with a view to enabling their maintaining the requisite strength.

**Mignonette and Schizanthus.**—Late-sown *Mignonette* intended to flower in pots in the spring should have plenty of air in mild weather, but if in pits or frames care must be taken that the soil is not allowed to get too wet by running the lights down. It is not well to allow too many plants in a pot, even for this late flowering stock; three or four to a 6-in. or 7-in. pot will be enough. The pots of tree *Mignonette* should now have got well filled with roots, and the plants must be sufficiently sustained by the use of manure water, or some light manure sprinkled on the surface of the soil, which will strengthen them and prevent the yellow, sickly appearance in the foliage, which detracts much from their beauty. The *Schizanthus* is not so much cultivated in pots for greenhouse work as it deserves to be; yet anyone who wants an inexpensive really effective flowering plant for spring use could scarcely have a better. The perfect



sheet of delicate flowers with which they are covered, so as to scarcely allow a leaf to be seen, make them much more telling objects in a greenhouse or conservatory than many things which cost much more. A light position on a shelf near the glass is what they require through the winter, with enough pot room as this is wanted. Four or five of these autumn sown plants are enough to fill an 8-in. or 10-in. pot; they must be regularly attended to with water, and kept free from insects.

**Neriums.**—Seldom as these most useful, free-flowering plants are now seen in private gardens, they stand almost equal to Tree Carnations for producing flowers early in spring; but to do them in small pots, such as imported from the Continent, they must be especially prepared by early propagation, and a thorough hardening and ripening of the wood out-of-doors, fully exposed to the sun during the summer, keeping them well supplied with water, for although the Neriums will bear any amount of ill-usage without its killing them, still they resent the bad treatment by failing to bloom. If kept too dry now when their flowers are set they usually fall off; in like manner large specimens occupying big pots must not be let to get over dry at the roots. They may be wintered anywhere, in houses or pits, out of the reach of frost. They stand moderate forcing, but it is not well to attempt flowering them too soon, or the buds are liable to drop; neither must they be subjected to too much heat, or the same mishap will follow. After the commencement of the new year, when they are put in heat, a temperature of from 56° to 60° in the night is enough.

**Tuberoses.**—If a sufficient stock of these have not already been procured no time should be lost in doing so and in getting them potted; 7-in. pots are large enough. Many who have not had some experience with these fragrant flowers do not succeed with them, the failure mostly being through the soil getting too much wet before roots are formed. When potted the material should be in a medium condition, neither too wet nor too dry, and on no account should they be watered before some root progress has been made; otherwise the chances are that they fail to make either root or top growth. To prevent the soil getting so dry as to require water before the roots have begun to move freely, the pots should immediately the bulbs are put in be stood on a moderately moist bottom, such as the earthen floor of a greenhouse, but where they will not get drip from above. In private gardens where white flowers that will last well in bouquets and button-holes when mounted are regularly wanted, there are not many plants that answer the purpose better than Tuberoses, for, like perpetual flowering Carnations, the blooms open in succession so gradually that all can be used without loss.

**Lilies.**—The majority of the failures that take place in the cultivation of Lilies are traceable to potting at the wrong season, that is when the roots are in motion. For general usefulness none are superior to *L. auratum*, *L. speciosum*, and *L. eximium*; such of these species as require any disturbance at the roots, either to divide them where overcrowded, or for the removal of the small bulbs which the two latter kinds form so freely, should at once be attended to. I have found nothing suit these plants so well as good turfy loam with about one-fifth of leaf mould, a little rotten manure, and a good sprinkling of sand, keeping the bulbs well down in the pots, so as to permit most of the stem roots, which *L. speciosum* produces freely, being below the surface. The soil ought to be pressed moderately firm in the pots, and the bulbs should be kept in separate sizes, the largest by themselves, and also the medium and smallest. After potting they may be put under a greenhouse stage, plunged in ashes in a cold pit, or anywhere where they will not get frozen. For the quantity of large flowers which can be had from a very small pot, there are few things equal to *L. eximium*; it forces well if not hurried too much, but when it is to be so grown the bulbs should be potted at once. Two

or three will do well in a 7-in. pot, but whoever intends growing this variety should be careful to get the true *L. eximium*, not the closely allied *L. longiflorum*, which, though all but identical in the appearance of the flowers, will not produce more than one-third the number. With all these and other pot Lilies it is a matter of the first importance that the soil should be kept continuously until the shoots appear above ground in a medium condition for moisture; when the roots begin to move, if too dry, they cannot make progress, and if too wet they rot.

In stoves that contain those plants which require the most heat to grow them, the temperature should now be reduced to its lowest point, except such as occurs during severe frost. A much shorter rest—or rather a reduction of growth to its slowest point—than is often given to this class of plants results in a better return in the quantity of flowers they yield.

## ORCHIDS.

J. DOUGLAS, LONDON HALL.

**East India house.**—Unless the nights happen to be very cold, the temperature should not fall below 65°, but if on cold nights with an east wind blowing the temperature should be 60° before sunrise in the morning, there is no need to rush to the stovehole and drive the temperature up by over-heating the hot-water pipes; the sun would raise the temperature much better perhaps an hour later. There is always more danger from over-heating in frosty weather than the reverse. The spikes of the various species of *Phalaenopsis* will now be advancing strongly, and where this is the case more water will be required for such plants than for those that are almost dormant. *Phalaenopsis* like a moist atmosphere, and when they are exposed to the reverse of this during winter, the plants are apt to lose some of their leaves. *Dendrobium chrysotoxum* and *D. suavisimum* have not yet completed their growth, nor will they do so for a few weeks yet. *D. thyrsiflorum* and *D. Farmeri* are also backward, owing to their being rather retarded in order to induce them to flower late. They are all placed in the warmest part of this house, well exposed to the light. *Cattleya labiata* Warneri is just now beginning to make its growth. The potting material should be kept moderately dry as yet, and the plants near the glass at the coolest end of the house. Any other plants of this character that are making their growth should be well exposed to light. The Madagascar Orchids require to be placed in the warmest end of the house. Small growing *Angraecums* should be placed near the glass. They are best grown in small teak baskets or pans. *Grammatophyllum Ellisii*, a very remarkable plant, has been recently introduced in quantity. This, though a strong grower, seems to do well near the glass. Plants of it should be placed in the warmest position while making their growth, but if that is completed they may be kept cooler, and also rather dry at the roots. Recently imported plants must be treated to a high temperature or not, according to the state of the growth. The peculiar looking *Bollea coelestis* did not succeed with us either in a cool house, or a *Cattleya* house temperature; perhaps it would do better in the cool end of this house. Plants of it are now making their growth, and a warmer temperature is the more necessary.

**Cattleya house.**—There are numerous species of Orchids either in flower or showing in this section just now; some of the *Cattleyas* and *Lelias* are very showy; others have a delicate and transparent beauty of their own, which makes them quite as valuable as the more showy species. *Cattleya Loddigesii*, for instance, amongst the more soft tints of rose is very beautiful; so is the pretty *Lelia alba*, which is also useful for cutting. *L. autumnalis* is now in great beauty, although this does best in the cool house. *L. anceps* and its varieties will soon be in flower. The pretty *Oncidium cheiroporum* is also opening its clear yellow blossoms, which are densely placed on slender spikes; the pseudo-bulbs have nearly

completed their growth as the flowers open. This pretty Orchid should be placed near the glass in baskets or pans. The *Restrepas* are not so much grown as they ought to be; their singular flowers are very pretty nodding on slender stems. In Messrs. Low's nursery plants of *R. leopardinum* are now well in flower; they are densely spotted with reddish maroon, and are grown in small baskets or pans near the glass, as the whole section of them ought to be. In the same nursery *Masdevallia Wagneri* is in flower, and under the same conditions; this is also a pretty Orchid. Its flowers are of small size, creamy yellow, and translucent, and the petals have greenish-yellow tails, the sepals have also similar tails thrown backwards. Many of these tufted little plants take up but small space, and well repay the trouble of looking after them. They add greatly to the interest of collections, and should not be lost sight of. There are many Orchids in this house now making their growth, and many more have completed it; those throwing up their flower-spikes or going through the process of completing their growth require to be kept rather moist. The pseudo-bulbs of *Odontoglossum hastilabium*, for instance, have completed their growth, but strong flower-spikes have also pushed out of their sheaths; this species indeed should never be allowed to become very dry, as it always seems to be in a growing state. Another very handsome species of *Odontoglossum*, viz., *C. citrosimum*, requires a good rest during winter; the compost should be allowed to become quite dry before any water is applied to it. *Odontoglossum pulchellum*, a very charming species, seems to require rather more water than some, especially when making its growth, which it is doing now. *C. Phalaenopsis* does not seem to do well in several places; it makes all the difference whether it is placed near the glass or not, with a free circulation of air around it, and a temperature in winter of about 55° as a minimum. Under such circumstances it does well with us. This when well grown is a fine and distinct species, though it cannot compete with *Roezli* and *veixillarium*. In mild weather the ventilators ought to be open a little at night.

**Cool house.**—The temperature here will range from 45° to 55° at night according to the weather, falling to 45° on frosty nights. In mild weather it often does not fall below the highest figure without any artificial heat. Any plants that require repotting or surfacing should at once receive that attention, that is if the repotting can be done without interfering much with the roots. None of the plants should be divided so late as this, as probably they would not very quickly recover the check. As our knowledge of the requirements of cool Orchids increases, we find that there are many species that succeed well here which do not do so well in the *Cattleya* house. I saw in a large establishment quite recently *Oncidium varicosum* and *C. Marshallianum* doing remarkably well in a cool house in juxtaposition to *C. macranthum*. Many grow the first named in a *Cattleya* house; it is as well to state that they succeed kept quite cool. The lovely *Dendrobium infundibulum* and *D. Jamesianum* are also at home here. They do not long remain in good health in a warm temperature. The pretty pure white *Masdevallia towarensis* should now be in every collection. A year or two ago 1 guinea a leaf was asked for plants of it; now one can purchase good tufts of it for 5s. each. It thrives admirably in the coolest house. Whatever insect pests have attacked the plants should now be eradicated, as they are more easily destroyed at this season than in summer.

## ROSE GARDEN.

W. H. PRITTINGHAM, BEESTON.

ALL worthless varieties and sickly plants observed during the blooming season should now be dug up and cast away in order to make room for healthier plants and better sorts. Planting may now be proceeded with, at least in the case of those who prefer autumn planting to that of spring. Roses in pots if not already placed in a cold



frame or under some similar shelter from heavy rains should be seen to without further delay, not forgetting to give all the air possible every day. Cuttings of Dog Rose, Manetti, and other Rose stocks should now be put in, thus enabling them to callus ere the ground gets too cold.

#### FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

LEAVES are now falling fast, and must in many cases be removed, but where they can be left without being an eyesore, as they may generally in shrubberies where the shrubs feather down to the ground, they should not be disturbed, but allowed to remain drifted under the branches and around the collars of the plants, to which vital parts they afford most excellent shelter, and are a great protection to the roots, which they preserve from frost, and thus render shrubs able to stand out against a hard winter. It is the practice with some to dig shrubberies over, but it is a barbarous one, as, however carefully done, surface feeders are destroyed wholesale, and if plants are to be kept healthy, it is these that must be encouraged. Instead, therefore, of digging, it will be much better to leave the soil undisturbed, and give a dressing of any light vegetable mould that may be laying idle and can be spared for this purpose. By managing thus, any bare vacant spots near walks or other parts that can be seen may be made gay with Crocuses, Snowdrops, Hyacinths, Daffodils, Primroses, and many other plants which in early spring will charm by their beauty. The planting of any or all of these alluded to should be taken in hand forthwith, as the sooner they are placed in the earth the stronger and better they will bloom, but as rats and mice are very fond of the Crocus, much watchfulness will be requisite to keep those pests from devouring the roots, and trapping sometimes must be the order of the day, as rats and mice are vermin that increase at a very great rate, and do much mischief in a very short time. Mice may be easily dealt with by the old-fashioned figure of 4 trap, but a more simple and perhaps better one is that made by supporting a brick or heavy tile on end by running a piece of Raffia Grass up the front and fastening the ends to a stick stuck in behind. Near the ground a pea or piece of bread or cheese as a bait should be tied in the Grass, which a mouse will bite through and let the weight down on its back. Rats are too wily to be so caught, but may be poisoned or taken in steel traps set near their haunts if a little meal or grain is scattered over the ground.

Although no advocate for transplanting evergreens at this season, it often happens to be the most convenient time with many, and where this is the case, and the plants it is desired to operate on are not large, they may with safety be taken in hand if the work is begun and finished before we get much further on in the year. Hollies, however, and Barberries are ticklish things, and had better be left till the spring, as should we get cutting winds or a winter like the last, they are almost sure to become defoliated, and after that they frequently die altogether. The great point in the removal of evergreens is to secure good balls, and to succeed in this it is necessary to open out a wide trench well away from the stems, and then work up towards them by forking out the loose earth from among the roots till the plants can be lifted. The holes for their reception should be large and broken up below, that the roots may have a fair chance to penetrate, and be afforded plenty of room to spread themselves out properly, and when this is done the filling in may commence, for which the best of the soil should be used. That this may be washed into all cavities in and under the ball, it is a good plan to throw in plenty of water, and then leave all to subside before the last of the earth is put in. The next thing is to mulch over the surface around each plant, which will keep out frost, prevent evaporation, and afford encouragement to the roots to form fresh feeders. That these may not be strained or injured, the heads of the plants should be supported by proper staking and tying so as to pre-

vent them blowing to and fro, as when allowed to do that they stand but a poor chance of becoming established. As regards deciduous trees and shrubs, there is no month so favourable in the whole year for their removal as November, as then there is still some warmth in the ground, and the roots feeling this, quickly get over any disturbance and obtain firm hold of the ground again by the spring. If those to be transplanted have large heads they should be thinned out, and with some it may be advisable to shorten back, so as to balance the tops and bottoms as it were, that the roots may be able to support the branches and keep plump the bark, for if this shrivels and becomes contracted plants rarely do well. In the case of those with large bare stems, such as standard Limes, Planes, &c., it is a good plan to bind them up with Moss, which by keeping off the drying air ensures success.

#### PROPAGATING.

**Abutilons.**—These may be increased with equal facility either by seeds or by means of cuttings. The former are easily obtained, and to produce plants for winter blooming should be sown about April in pans of moderately light soil and placed in a warm greenhouse, in which they will soon germinate, but as many seedlings grow away very strongly before flowering for general purposes plants raised from cuttings are preferred. The cuttings may also be taken in April and inserted in pots of sandy soil without removing or shortening any of the leaves and placed in a close case in the propagating house or in a frame with a slight remaining bottom-heat. There, if kept close and shaded, they will be rooted in a fortnight, when they may then be hardened off.

**Acacias.**—The smaller growing kinds, such as Drummond and *arnata*, are readily propagated from cuttings in this way: When the flowering season is over shorten back any irregular branches at which they will break forth into fresh growth, and when the new growth is moderately firm take off the cuttings. The pots should be filled to within 1 in. of their rims with broken crocks, over which must be placed the soil, consisting of sandy peat with a small proportion of loam, the whole being pressed down firmly. A little sand should be put on the top. About 2 in. will be found the best length for the cuttings, the leaves being carefully removed from the lower half. When inserted, the base of the cuttings will rest on the crocks, which for the top should be broken small, and care must be taken that it is made firm or it will shrivel up. When the pot is filled with cuttings, place a bell-glass over them, and keep it in a greenhouse temperature well shaded for a few weeks until they callus, when they may be removed to more heat and will then quickly root. When rooted, which will be perceived by growth taking place, tilt the bell-glass and gradually harden them off.

**Anthurium.**—The Flamingo plant and its white variety are both readily increased by division in spring; all that is requisite is, if the roots have been very much disturbed, to keep them close until they recover from the check. Its ally, *Anthurium Andreanum*, is propagated by taking off the top of a plant when it has attained a sufficient length, and putting it in as a cutting in a small, well-drained pot. The soil best suited for this purpose is fibrous peat, Sphagnum, and sand. As soon as the side shoots produced after that operation are large enough, they may be taken off and treated in the same way. The cuttings must be kept in a close case in the stove till established in their pots.

**Begonias.**—The winter-flowering kinds, such as *manicata*, *semperflorens*, *fuchsoides*, and *Ingrami*, are all readily propagated by cuttings of the young growth taken off in spring and treated as Fuchsias or similar plants.

**Bouvardias.**—These beautiful winter-flowering plants are increased either by cuttings of the young growth taken in the spring, or, as preferred by some, root cuttings. For the former method,

which is the one most generally followed, introduce the stock plants into a brisk heat about the middle of February, when they will grow rapidly, and as soon as the young and succulent growth has attained a length of 2 in., take off the cuttings, not at a joint, but immediately above one, thus leaving a portion of bare stem below the bottom pair of leaves, which must on no account be removed. The cuttings must be inserted in light sandy soil, taking care that the bottom leaves are not buried, but rest as it were on the surface. Thus treated and placed in a close case in the stove, they will root in about a fortnight, when they must be hardened off. For root propagation shake out the old plants early in spring, and cut up all the principal roots in pieces about 1 in. in length, inserting them perpendicularly as cuttings, so that the upper part is on a level with the soil; treat them in all respects the same as cuttings made of the shoots.

T.

#### FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Pines.**—The fruiting house, now full of Pines in various stages of growth for winter use, will require frequent damping without actually wetting the plants to produce a genial atmosphere favourable to the swelling off of the fruit, which should be kept well up to the glass to prevent the crowns from becoming too large. Aim at a bottom-heat of 85° to 90° and a minimum top-heat of 70°, with a rise of 10° to 15° by noon on fine days. Give a little air at the apex, if only for an hour when the maximum has been reached. Close and syringe at 1 p.m. Examine each plant separately once a week, and see that a liberal supply of diluted liquid or guano water is given when needed, but not otherwise, as too much water at this dull season produces black hearts, which render the fruit useless. To ripen up fruit well and to insure the finest flavour, each plant should be lifted out bodily, and placed in a dry warm structure as soon as the pips begin to change colour. When quite ripe, they may be removed to a temperate Grape room, where they will keep for several weeks if not wanted for immediate use. For succeeding the Queen, still unsurpassed as a summer Pine, Charlotte Rothschild and Smooth Cayenne stand first, but the time is not far distant when the high-flavoured Lord Carington, the finest of all the Jamaica section, will occupy a prominent position in every winter-fruiting stove. For the information of Pine growers unacquainted with it, I may say it does not require more room than a good Queen, and, like the old black Jamaica, it enjoys a strong dry bottom-heat, and fruits well when grown in a very small pot.

**Figs.**—To have ripe fruit early in April the trees should be started by the end of November. If, as is generally recommended, they are grown in pots, no time must be lost in bringing the annual cleansing, staking, and tying to a close and getting them placed on the pedestals built up from the bottom of the pit in which fermenting material is to be placed when bottom heat is required. Where variety is a consideration, such kinds as Brown Turkey, Osborn's Prolific, Negro Largo, Dr. Hogg, and White Marseilles stand unrivalled; but for giving an abundant supply of high class fruit, the first I have named cannot be surpassed. To keep Figs in a fruitful state the roots, either in pots or borders, must be kept within bounds; drainage must be ample, as they require a great deal of water when growing, and the compost, consisting of old turf, bone dust, and lime rubble, must be made very firm and heavily mulched to keep the active feeders near the surface.

**Succession houses** in which the trees are planted out in internal borders may have the roof lights drawn off during mild weather, but it will not be wise to expose the young growths now thickly set with embryo Figs to severe autumn frosts. If lifting has been decided upon get the work done at once, using rich compost free from animal manure, and while giving plenty of air to the house keep the borders protected from cold



chilling rains. If trained to a trellis pruning will consist of a general thinning or cutting away of the least promising shoots which have reached the extremity of the house; and as good fruit cannot be obtained from crowded trees this operation must be performed with a liberal hand.

**Hardy fruit garden.**—It may be well to bear in mind that the month of October and the first part of November include the best time for root pruning, as the trees then have time to form new roots before winter sets in, and while receiving a check that will insure future fruitfulness, the blossom buds now formed will not be prevented from maturing a good crop of fruit next season. Opinions vary as to the necessity for root pruning, and perhaps on warm shallow soils a good summer mulching may produce the best result; but in cold localities where trees grow vigorously until frost sets in, a check of some kind is absolutely necessary, and we have found that the lifting and relaying of the roots in a horizontal position near the surface is the most profitable course to pursue. By the term root pruning it must not be understood that the tree is to be crippled or perhaps killed by having all its best roots cut away; the strongest only should be shortened, and all the active fibres should be carefully preserved and relaid in fresh compost resting on good drainage, the depth being regulated by the altitude of the garden and the nature of the subsoil. Young trees which have been lifted every alternate year may have an opening taken out all round the ball without endangering the crop; but with old, neglected trees greater care is recommended, as it will not be safe to operate upon more than one half of the roots in a single season. When lifting, root pruning, or replanting, every station should be elevated, the soil beneath and about the roots should be made very firm, and when the tops have been made secure by means of stakes from wind waving, a mulching with half rotted manure will complete the work for the season.

**Cucumbers.**—Where every compartment is turned to the best account the latest Melons will be succeeded by winter Cucumbers, and as these will now be fit for planting out, see that every part of the structure is thoroughly cleansed before they are introduced. Dress over-bearing plants twice a week, remove all male blossoms and surplus fruit, and crop lightly where quality is the first consideration. As days decrease in length reduce atmospheric moisture, but syringe occasionally on fine mornings. Keep the evaporating pans full, and feed liberally with warm diluted liquid as often as water is required. If growing in hills top-dress with light rich turf and lime rubble little and often as the roots show upon the surface, but avoid the use of solid manure, which encourages worms and very often induces a rank, unfruitful growth of leaf and Vine at a time when every joint should produce a fruit. Watch closely for mildew and red spider, and lose no time in applying the usual remedy. Maintain a soft growing atmosphere. Keep every part of the house, including the glass, perfectly clean, and economise fire-heat by running down the blinds at night and during heavy storms by day.

#### KITCHEN GARDEN.

R. GILBERT, BURGHEY.

MOST of the autumn Cauliflowers will now be cut, but see that any late ones just turning in are not injured by frost. It is a good plan as soon as the heads obtain about 1½ in. in diameter to tie the leaves up over them rather firmly at the top, but allowing at the same time sufficient space for development. By this mode of treatment they will stand uninjured 8° or 10° of frost, and the heads will be found to be much whiter and closer than if they had been developed naturally amongst the foliage. Early Broccoli turning in should also receive attention. Anticipating sharp frosts, it is a good plan to tie up a portion of the earliest, and where spare pits or an orchard house is at command some should be lifted and placed therein, care being taken to lift them with good balls. Give

them a good watering at the root if the soil is dry; they will soon recover the shift and commence rooting again, when good heads will be produced. Early batches of Endive which have attained a size fit for blanching, should have slates placed over them; a portion of the largest should be lifted and placed in a cool house or pit, where they will be secure from severe frosts and snow, and ready for blanching in succession. Carrots and Beetroots should be lifted at once and placed in a shed or moderately dry cellar, working in amongst the roots some moist soil, ashes, or sand. All Cos Lettuces almost fully grown should be lifted from the open ground, and placed in a cool house, pit, or under a south wall, where they will be kept moderately dry, and a few should be tied up when quite dry occasionally, to keep up a supply of well blanched hearts. Small plants of any of the hardy varieties of the Cabbage or Cos Lettuce may still be planted out in a position where they will be sheltered from frosts and cutting winds. Plants with about four or five leaves planted out about the last week in October will be found to stand the winter better than larger ones planted out earlier. Anyone desirous of increasing their stock of Sea Kale should, when lifting their plants for forcing, break off and save all the largest roots, which should be made into cuttings about 3 in. or 4 in. in length. Place them in a bed out-of-doors; cover them with 3 in. or 4 in. of soil, and when spring comes roots will be found to be emitted from the small end and numerous crowns formed on the larger one; remove all but the largest one, which will form the crown for the coming season. One-year-old plants grown from cuttings in this manner are preferable to older ones not only for forcing, but also for outdoor blanching. Immediately Asparagus stems become decayed and withered remove them, clearing the beds of weeds at the same time, thus preparing them for a good dressing early in spring. As soon as the tops of the Globe Artichokes get cut down by frost remove all the decayed portions down to the ground, place 4 in. of dry leaves over each crown, put over these 3 in. or 4 in. of soil, and beat it down firmly with the back of a spade. A small hole should be left just over the crown devoid of soil to admit a circulation of air amongst the dry leaves. Decaying leaves of Chicory should be removed and some roots lifted and introduced into the Mushroom house or some other convenient place to obtain a fresh supply of blanched foliage for salads. Some Parsley roots should also be lifted and placed in a pit or close together under a south wall where they can be protected when necessary. Remove all leaves at the time of lifting, and a good supply of fresh ones will push up before winter sets in. Thin out autumn-sown Onions and Carrots if necessary, and keep the hoe moving amongst them in favourable weather. All kitchen garden walks should receive their winter's cleansing this month. Where the walks are edged with tiles a good dressing of salt will effectually do this.

#### MARKET GARDEN NOTES.

**Growing Dracenas quickly.**—Fine-leaved plants suitable for the decoration of apartments having much increased in popularity of late, there is consequently a greater demand for them in Covent Garden Market than was formerly the case. Some twenty years ago only one or two growers made a speciality of Dracenas for market, one of whom, whose name I forget, but who lived at Barnes, grew them remarkably well. His stock of plants was never very extensive, but it was remarked that every specimen, large or small, was wonderfully well coloured. Many supposed that the soil he used was the cause of the foliage coming so bright, but the secret laid in keeping the plants near the glass, giving plenty of air in fine weather, and affording them but little shade. Dracenas of the terminalis type will never colour well far from the light; neither will they do so when the structure is densely or perpetually shaded during the growing season. Low span-roofed houses or frames are the best places for

them, and it is such structures that Continental growers who make a speciality of this class of plant employ to grow them in. In the neighbourhood of Paris, Dracenas in small pots are extremely well done, but the Germans grow them quite as well, and produce them at so cheap a rate, that many French nurserymen find it more to their interest to import than to grow them. Labour, being cheap in Germany, is of course in favour of growers there, but the system followed by them is the main cause of their being able to sell at such a low price. In the first place the young plants are not raised in spring, but in October and November, thus giving a clear gain of three or four months. Tap-roots, when obtainable, are employed as a means of increase, but old leggy specimens are cut up into pieces about 1 in. long, each piece being cut down the centre. These are laid out side downwards, just burying them in sand, and plunged in a brisk bottom heat. In a very short time each piece of stem throws up one or two shoots, and emits roots, being then ready for potting off separately. These little plants are kept gently moving all through the winter, and are shifted early in the year into 2½-in. pots, so that by April at the latest they are got into 4½-in. pots. It will thus be seen that if kept in free growth all the summer, they must make nice specimens by the autumn. Some growers, however, prefer to plant them out, and having practised this system myself, I can speak well of it, the saving in labour being great and the plants making a much finer growth. The best example of planting out Dracenas that I ever saw was at Leipsic; the plants were set out in wide span-roofed frames, where they grew all the summer, and a more luxuriant, healthy, well-coloured lot of plants I never saw, many of them being in the autumn large enough for 6-in. pots. The way I grew them was as follows: About April the pits were filled with leaves and manure to give a gentle bottom-heat, some 6 in. of free rich soil being placed thereon. The plants grew rapidly, and by the end of September were large enough for 4½-in. pots. They were then taken up, potted, and placed in a warm house without experiencing the slightest check, the pots being filled with roots by the beginning of the winter.

**Late ripened Grapes.**—It has been stated in a contemporary that Grapes cannot be well ripened in September. This is a mistake. They can be brought to the highest state of excellence just as much at that time of the year as earlier. Whether it is advisable or economical to defer the ripening until so late a period is another matter. Some years ago the attempt was made here to combine Grape and Strawberry culture in the same house. In the first place, the Vines, being planted in the usual manner, were brought in about the end of March, but as two crops of Strawberries were to be taken from the house, it was found that the late crop did not colour well, owing to the shade caused by the Vines. To obviate this defect, the Vines were kept outside until the middle of May, being protected at night from the time that they started into growth. One year, owing to unforeseen circumstances, they were not brought in until the first week in June, so that the beginning of September found them hardly commencing to colour. From that time until the middle of October they were constantly fired, and a better coloured and sweeter lot of Grapes I never saw. They were marketed in November, and the fruiterers to whom they were consigned very much admired them, saying that Grapes so firm and well finished off as they were would have kept until March. Some assert that Grapes to keep well should be ripe in August, but unless the season should be of a very exceptional character there are many sunny, drying days in September and October, so that the bunches are sure to lose some of their weight and freshness; whereas when the ripening is so timed that the crop is finished off by the beginning of October, very little loss is sustained in this way before winter arrives. Hamburg Grapes are always more or less difficult to keep in good order until Christmas, and the difficulty is much increased if



any appreciable rotting of the berries takes place in autumn. The ability of Grapes of any kind to remain fresh and plump up to the time that they may be expected to realise the best prices much depends upon the supply of moisture during the swelling period. A writer in a contemporary, commenting upon some fine Lady Downes grown in a market garden in the neighbourhood of London, remarked that the grower literally flooded his borders during the summer. It is a question if too much water can be given when the berries are swelling freely. At that time the Grape Vine appears to possess wonderful powers of absorption, and, provided the roots are in good order, the more water the better the Grapes. In confirmation of this I may cite an instance where Grapes were grown under circumstances that would by most people be considered very unfavourable. The Vines were planted outside and set a good crop the second year. The border was well drained, the soil very free, but it happened that no guttering was fixed to the house, so that all the rain that fell on the glass was precipitated on to that portion of the border containing the greater portion of the roots. It happened, too, that heavy showers of rain fell nearly every day. In spite, however, of this continual drenching the berries coloured well, acquiring unusual substance and finishing off in such a manner as to render them one of the best samples of Hamburgs that I ever saw.

**Pansies and early Forget-me-nots.**—*Myosotis dissitiflora* will repay the shelter of a cold frame during the winter. Thus cared for, it comes much earlier than in the open ground, fresh bright samples finding ready sale in Covent Garden. Pansies, too, grown in the same manner go off well when they first come in, as they offer a complete contrast to all else in the market. The Pansy is a favourite plant with costermongers, it being of such a hardy nature and so generally popular. Shallow trays containing about 1½ dozen go off briskly at 2s. and 2s. 6d. per tray when they first come in. J. CORNHILL.

## ORCHIDS.

**Oncidium ornithorhynchum.**—Orchids that will last long in bloom are even more useful in winter than at other seasons when flowers generally are more plentiful. Amongst the prettiest that flower in the dull season is this Mexican Oncid, which, when suitably treated, flowers so profusely as to present a mass of close branching spikes that will shortly be covered with thousands of deep and pure white flowers, a combination of colour not common in Orchids. —A. Z.

**Phalænopsis Schilleriana** (p. 414).—If the roots of this plant are much infested with fungus, they ought to be cleared from it at once, and be placed in a teak basket, which is the best material for baskets, and common deal the worst. I saw a large collection—hundreds of *Schilleriana*—the other day which had been placed in deal baskets, and nearly the whole of them were infested with fungus from the wood. They were being removed to clean teak baskets, and some of them shifted a few days ago only were rooting away freely in the fresh Sphagnum.—J. DOUGLAS.

**Oncidium O'Brienianum.**—This rare little species is very pretty, something in the way of *O. cornigerum*. The bulbs are small and pyriform, producing from their bases slender pendulous spikes from 6 in. to 9 in. long. The blossoms are somewhat crowded together and are larger than *O. cornigerum*, bright yellow, heavily barred and striped with chocolate brown. It is now in flower in the Pine-apple Nursery, and it was named in compliment to Mr. J. O'Brien, the manager. It is grown on suspended blocks in an intermediate temperature.

**Cattleya aurea.**—Of this magnificent Orchid, mentioned last week, we have just seen another flower sent to Messrs. Stevens's rooms, Covent

Garden, from Mr. Potts' rich collection of Orchids at Hoole Hall, Chester. The flower answers the description in every way of the flowers sent to us by Messrs. Backhouse last week, except that perhaps the yellow tint of the sepals is a shade or so darker.

**The Neilgherry Crocus or Pleione lageneria.**—This is a veritable gem among Orchids, and many an Orchid house is lit up by the bright colour of its blossoms. The rosy lilac tint of the sepals, and the lip prettily variegated with white, crimson, and yellow, render it very striking. The largest masses we have seen of it are in the Royal Exotic Nursery, Chelsea, where it is grown in large pans, the surfaces of which are densely clothed with bloom. It is popularly called Neilgherry, or Indian Crocus, on account of the flowers appearing unaccompanied by foliage, as in the case of the autumn flowering Crocuses.

## PROPAGATING.

**Leucophyton Brownii.**—This is an excellent plant with which to form lines in carpet bedding or designs. It may be increased either in spring or autumn. In the case of spring striking take the plants that are required for stock into the greenhouse into a temperature of about 55° at the beginning of January to induce young shoots to grow for cuttings. Get some clean 6-in. pots, fill them quarter full of crocks, on the top of which put a layer of Moss; then fill up with finely sifted soil composed of loam, peat, and silver sand in equal parts to within ½ in. of the rim; press all down rather firmly, fill up with sand and level off, sprinkle with water, and make a mark with the bell-glass. The cuttings may then be taken off 1½ in. long. Remove the bottom leaf with a sharp knife or scissors and insert the cuttings with a small dibber, fastening them well in and watering with a fine rosed pot. Leave the glasses off for an hour in order to dry the leaves. Place them on a cool bottom in the propagating house near the light. Shade from sun and wipe the glasses dry every other morning. They will emit roots in about a month, and then the glasses may be tilted with a piece of crock till they can be removed altogether. For autumn striking cuttings may be taken from plants in the open ground in September, and put into 4½-in. pots, which should be filled with the same compost as that mentioned before. Care must be taken to fasten the cuttings well in. Give a good watering and place them either in hand-glasses, or in a close frame in a shady situation. They must not be kept too wet. A little air every morning early is beneficial to them, and also after watering. They will be rooted sufficiently in six weeks to be removed to a shelf in a cool greenhouse for the winter.

**Liliums.**—These may be increased in several ways. *Auratum*, and all the varieties of lancifolium, longifolium, &c., will grow from scales, i.e., the outside coverings of the bulbs. The best place for them is a half spent hot-bed, with about 1 in. of compost sifted fine and spread over the manure. The compost should consist of yellow loam, coal dust (not ashes), and sand in equal parts; on this the scales may be inserted in rows about one quarter their depth. This may be effected by drawing a small drill and then filling up carefully to the scales with soil. They may then be sprinkled with water just to settle the soil, and the lights put over them. They will not require much looking after; but never let them get too dry, as drought would shrivel up the scales and delay the formation of the young bulbs. The best time for this work is January, when young bulbs will form in three or four weeks. As soon as they are large enough put them into store pots or pans about ½ in. to ¾ in. deep, in some good rich soil, composed of yellow loam, well-rotted manure, and a little coarse sand. Re-place them in their old quarters for a few weeks to give them a start, when they may be transferred to cold frames to grow on ready for planting out in beds the following year. All Lilies increase naturally by forming offsets or young bulbs. These may be

either planted out the first year or kept in store pans according to the size of the bulbs. If increased from seeds the latter should be sown in boxes or large pans, only just thick enough to accommodate the bulbs the first year. The same compost as that used for scales is suitable for the seed; it must be sown from ½ in. to ¾ in. deep, and the pans should be placed in a manure bed of a medium temperature. It is best to sow as soon as the seeds are ripe, as they deteriorate by too long keeping. As soon as they are up give a little air, and gradually harden them off till they will withstand cool frames, in which they are to grow and form bulbs for next year's planting.

**Gaillardia grandiflora.**—Gaillardias, of which *G. Telemacqui* is the best, are easily increased by cuttings and roots. Cuttings taken off in September and put in sandy soil under a hand-glass in a shady situation out of doors will root freely in three or four weeks; they may then be potted and placed in a frame; the young plants are all the better for being protected from severe weather in winter. If to be increased from roots cut up the strongest when the plants are taken from the ground in autumn into lengths about 1½ in., fill well-drained 4½-in. pots with fine sandy soil, leaving ½ in. for sand on the top; insert the cuttings upright with the tops just above the sand, water to settle them in, and place them on a shelf near the light in the propagating house. When they begin to grow they must be carefully watered, and they will be ready for potting off in six weeks, and should be kept on the shelf till the following spring.—H.

## BOOKS.

### THE CHRYSANTHEMUM:

ITS history, varieties, cultivation, and diseases, by D. T. Fish (Bazaar Office), seems a useful pamphlet of thirty-two pages, from which we extract the following seasonable notes on housing and flowering.

**"Housing and flowering.**—All intended for flowering indoors should be placed under glass by October 1, or earlier, in cold seasons and localities. During mild weather they cannot, however, be kept too open and cool. The transition from the outside to the in cannot be made too gradual and easy. Any sudden change of temperature or condition causes the leaves to become yellow, which not only disfigures, but weakens the plants and the flowers. While the plants must never be stinted for water, they will need less when in flower than when in full growth. They will do well in a cool greenhouse, conservatory, or window garden. Some arrange them against walls, with a temporary glass case over them, as is done in the Temple Gardens. In these they are simply placed according to their height, and this mode shows off the bloom remarkably well. But in these and other cases no attempt is made to cultivate or exhibit the plants. Where good plants are grown, they may be arranged like *Pelargoniums*, *Fuchsias*, or any other specimen plants. Arranged thus, so that the merits and form of each plant may be seen, Chrysanthemums are very telling. After flowering, the plants may be cut down to within 6 in. of the ground, and wintered in a cold frame or other frost-proof quarters. Some, however, merely take cuttings off and throw the old plants away. Others keep the younger plants and grow them into larger specimens the next year, while many plant them right out in the open borders or against walls, to take their chance of flowering, should season or locality prove favourable. Of course, the Chrysanthemum, though generally treated under high culture as an annual, is really a perennial, and may be grown on any number of years from the same root stock. When very large plants are wanted for tubs, &c., in big conservatories, it is a good plan to grow on the old plants a second or more years. With abundance of root room and rich feeding, these will make enormous bushes and yield prodigious quantities of flowers. Their treatment need not differ from that already described.



Winter in the same pots as they flower in, and in February or March shake them out and all the old soil; thin or remove the root stocks or suckers, or not, as thought desirable, and repot in the compost already described. Keep rather close and moist till a fresh start is made, and then treat the same as directed for cuttings."

#### CATALOGUES RECEIVED.

- Osborn & Sons (Fulham) Descriptive Catalogue of Fruit Trees, Vines, &c., for 1881-82.  
 Thos. Meehan & Co. (Germantown, Philadelphia) General Price List of Shrubs, Trees, Fruits, and Plants.  
 J. B. Guillot's (Lyons) Catalogue of Roses.  
 J. Cheal & Sons (Brawley) Catalogue of Trees, Shrubs, Fruit Trees, &c., for 1881-82.  
 Bruant's (Loitiers) Catalogue of Fruits, Forest Trees, Roses, and other plants for 1881-82.  
 G. Cooling & Son's (Bath) Descriptive Catalogue of Roses, Fruit Trees, Hardy Shrubs, &c., for 1881-82.  
 J. Forbes (Hawick) Descriptive Catalogue of Roses and Grape Vines for 1881-82.  
 Ewing & Company's (Norwich) Price List of Nursery Stock.  
 Godefroy-Lebeuf's (Argenteuil) Catalogue of Asparagus Strawberries, Vines and Fruit Trees for 1881-82.  
 Eugène Verdier fils' (Paris) Catalogue of New Roses, Gladioli, Amaryllids, Irises, &c., for 1881-82.  
 J. M. Thorburn & Co.'s (New York) Wholesale List of American Seeds.  
 W. Jeffrey's (Salisbury) List of Roses for 1881-82.  
 N. Davis' (Camberwell) Descriptive List of Chrysanthemums.  
 Chas. Turner's (Slough) Catalogue of Roses, Fruit, and other Trees and Shrubs for 1881-82.  
 J. Scott's (Merriot) Catalogue of Fruit Trees.  
 I. C. Wheeler & Son's (Gloucester) Autumn Catalogue of Fruit Trees, Roses, Forest Trees and Flower Roots for 1881.

#### NATIVE GUANO COMPANY'S SHOW.

ON Wednesday last an interesting exhibition of farm and garden produce was held at the sewage works of the Native Guano Company, at Aylesbury. The exhibits had all been grown with the aid of the artificial manure known as Native Guano, a preparation obtained from the town sewage of Aylesbury. The process by which this sewage is utilised is extremely simple, so simple, indeed, that it is called the A B C process, these letters being the initials of the principal constituents of the precipitant employed, viz., alum, blood, clay, and charcoal. These agents combined render the putrescent particles of the sewage an inodorous compound in the form of a greyish black powder, which is a highly fertilising material, and one of the most efficient as well as one of the cheapest of artificial manures for the farm or garden. An ample proof of its value as a fertiliser was exemplified by the exhibits displayed in two spacious tents at the company's works on this occasion. The garden produce was remarkably fine, particularly that exhibited by the market gardeners in the neighbourhood. The collections of vegetables comprised some twenty or thirty kinds, all of uniformly high quality, the roots being especially remarkable for their clean and handsome appearance. The Potatoes were wonderfully fine, and rarely have we seen such uniformly fine collections as those shown for the two leading prizes for a collection of eighteen varieties, a class which was represented by some half-a-dozen cultivators. The Potatoes in the other classes were likewise of high quality, all plainly indicating what an excellent aid this native guano is to Potato culture. Onions were exceptionally fine, and better samples than those that obtained the chief prizes are seldom seen on an exhibition table. Other roots, such as Parsnips, Carrots, and Turnips, were in every case of high quality, and the Celery bore that firm succulent appearance that indicated high class culture. The cottagers occupied a considerable space with their exhibits, and they certainly displayed some wonderful growth, particularly in the collections, which, though they were made up of numerous kinds,

scarcely an inferior dish could be found among them.

There were excellent Grapes shown by Mr. Crump from Blenheim, and a few other gardeners. Among the pot plants there were a dozen of excellent Chinese Primulas, which by their large size and abundant crop of flowers bore evidence that either the native guano or some other fertiliser had been judiciously employed in their culture. No less remarkable were the farmers' exhibits of corn and roots. The exceptionally fine growth was most apparent in the latter, for out of the whole of the exhibits, which numbered nearly 100, it was difficult to single out an inferior lot, and the heaviest roots in the show averaged about 30 lb. each. Cabbages, Kohl Rabi, and other produce were in a like degree remarkable. On this occasion Messrs. Sutton, of Reading, offered valuable money prizes for three improved varieties of Mangold, as did likewise Messrs. Carter, High Holborn, for the best 18 roots of Mangold, selected from a crop occupying not less than five acres.

The arrangements of the show were excellent, and a few lessons might profitably be taken from it in the arrangement of some of our leading horticultural shows. The exhibitors' catalogue was arranged in five sections, and these were subdivided into 52 classes, and the numbers of each exhibitor being arranged consecutively there was not the least difficulty in following out the arrangement. On the whole, this exhibition fully exemplified the high value of the native guano as a fertilising agent, and whether we consider the question on public grounds in utilising what is otherwise a waste product of our towns and conducting thereby to sanitation, or from an economic standpoint in bringing within the reach of gardeners and farmers at a cheap rate a highly fertilising material for their crops, this A B C process is a public boon and deserves to be extended as an adjunct to every town in the country whose situation and other conditions are conformable to the principles of the process, and there is no reason why such a system of utilising domestic sewage should not be attached to every large residence in rural districts, particularly in places where water is available as a motive power for pumping and grinding the necessary ingredients.

The method employed here of applying the ingredients is extremely simple. The clay and charcoal are incorporated in a grinding mill with the aid of sufficient water to form a thin paste. This paste flows into a tank, and is constantly agitated until it is required to be mixed with the sewage. By the side of the mixing-room is a smaller room, through which passes a channel or trough. At one end of this channel there rushes in the sewage with its unmistakable odour. The thin water-paste of clay and charcoal is admitted to the trough by a pipe from the store-tank; the sewage in its passage past this pipe carries with it the mixture, and the two, after well mixing, proceed on their way past a second pipe connected with a tank containing a supply of sulphate of alumina dissolved in water. All that is now requisite is to allow the sewage mixture and alum to flow in inodorous company to the settling tanks. The channel leading to the tanks has its course interrupted by numerous ledges, which serve to cause the more perfect intermixture of the sewage and the disinfectants. The first tank in which the sludge is allowed to settle contains the principal portion of the precipitate. The clear water is allowed to flow off continuously from the first tank into a second tank; and the remainder of the mud is deposited in this and in the other tanks into which it flows. From the last tank the water is conducted to the river, appearing as a clear, inodorous, and tasteless effluent. When sufficient sludge has been collected in the first tank, the treated sewage is shut off from this and permitted to flow into another tank, which then forms the first of the series. As much of the water as possible is then run off from the mud, and the latter is drawn into the acidifying tanks, where a small quantity of sulphuric acid is added to pre-

vent the loss of any ammonia. From the acidifying tanks the semi-dry mud is further dried by a most ingenious application of heat in revolving iron cylinders. The wet mud is passed in at one end, and dry manure, in the form of an inodorous and inoffensive powder, falls from the other end at the rate of 5 tons in ten hours, at an expenditure of a few cwt. of coal. If space enough be available the mud may be simply pumped from the bottom of the settling tanks into large open-air tanks, where it dries under the influence of sun and air. Not the slightest offensive odour is apparent during any stage of this drying. The dry mud in powder, and forming excellent manure, is removed from the sheds, and packed into bags for transport.

#### THE WORM TURNS.

I've despised you, old Worm, for I think you'll admit  
 That you never were beautiful even in youth;  
 I've impaled you on hooks, and not felt it a bit;  
 But all's changed now that Darwin has told us the truth  
 Of your diligent life, and endowed you with fame!  
 You begin to inspire me with kindly regard:  
 I have friends of my own, clever Worm, I could name,  
 Who have ne'er in their lives been at work half so hard.  
 It appears that we owe you our acres of soil,  
 That the garden could never exist without you  
 That from ages gone by you were patient in toil,  
 Till a Darwin revealed all the good that you do.  
 Now you've turned with a vengeance, and all must confess  
 Your behaviour should make poor humanity squirm,  
 For there's many a man on this planet, I guess,  
 Who is not half so useful as you, Mister Worm!  
 Punch.

In the late gale two Mulberry trees were blown down in Lambeth. I find that they were very ancient trees, being supposed to belong to a row of Mulberry trees that were planted between Clapham and Lambeth Palace.—T. B. Clapham Common.

Books.—Can you refer me to any good printed authority on the genus *Nerine*?—H. C. S. [There is a full scientific account of the genus in Herbert's "Amaryllidaceæ," and also in Kunth's "Enumeratio Plantarum.]

*Pyrus*.—The Herefordshire Pomona is an excellent work, and the only one we could recommend of the kind you require.

Names of fruit.—Mrs. W. (Sawda).—Fruit damaged beyond recognition.—Messrs. C.—Duchesse d'Angoulême, Knight's Monarch, Beurre d'Amanlis.

Names of plants.—C. Dinmick.—*Aster polyphyllus*. *M. S.*—*Asplenium viviparum*.—T. Matheson.—*Centradenia grandifolia*.—W. Cash.—2, *Abies Smithiana*; 3, *Ailantus glandulosa*.—W. Hurley.—1, *Cupressus macrocarpa*; 2, *Cupressus Lawsoniana*; 3, *Juniperus virginiana* Chamberlaini; 4, *Cupressus Goveniana*.—R. Rhododendron ponticum variegatum.

Slugs.—G.—They dislike coal ashes, and if dug into your stiff soil they would prove beneficial to it.

W. C.—Tty MM. Simon-Louis, Plantières, near Metz, Lorraine.

In Garden Appointments (p. 432), line 14 from top, instead of "Highfield" read "Fernside."

#### COMMUNICATIONS RECEIVED.

E. M.—G. M.—G. R.—A. P.—R. D. L.—G.—Sir C. I.—R.—F. R. M.—J. H. M.—A. B.—W. T.—G. J. D.—W. W.—N. G. Co.—H. T.—M. S.—W. T.—B. G.—J. S.—E. H. W.—G. S. F.—J. S. W.—F. W. T.—G. J.—H. & S.—T. B.—F. W. M.—F. Q.—J. M.—R. G.—W. C.—J. S.—W. T. B.—W. T.—R. N.—W. H. F.—C. D.—W. R.—E. H. A.—E. A. D.—L. K.—B. H.—2, A. G. J.—J. G.—D. B.—J. C. B.—A. T. D.—R. W.—T. H. A. H.—F. T. T. D.—W. W.—J. E. R.—J. H.—J. D.—W. A.—A. M.—D. T. F.—R. J. L.—W. G.—J. C. F.—2, W. R.—J. C. B.—E. J.—W. D.—E. W.—W. B. S.—H. G.—T. S.—R. J. L.—R. G.—F. M.—A. M.—J. T.—Van H.—R. W.—A. C.—B. R.—B. S. & Sons.—Delta.—H. C. S.—R. I.—R. B.—R. D.—J. R. J.—G. S. S.—M. E. G.—2, C. Soc.—C. W. D.—W. J. N.—G. S. S.—J. S. & Sons.—J. C. C.



No. 520. SATURDAY, NOV. 5, 1881. Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare*.

## HARDY AMARYLLISES.

THE following are the particulars respecting the conditions under which *Amaryllis Ackermanni* pulcherrima has been grown here for more than ten years past in the open ground with perfect success. The bulbs completely fill two long borders, 37 ft. long and 2 ft. wide, in front of lean-to vineries, having a south aspect. At the back of each border is the stone basement wall of the house; in front they are bounded by a Box edging, beyond which is a gravel walk 7 ft. 6 in. broad, this latter no doubt being of great service in draining the superfluous moisture from the borders. The soil in which they grow extends to a considerable depth, having been prepared many years ago for Vines, but now it cannot be distinguished from ordinary garden soil; below this the subsoil is a stiff, cold clay. The bulbs undoubtedly benefit considerably by the heat from the houses, as those in the border fronting the early vinery begin to bloom fully three weeks sooner than the others. They have had a slight top-dressing of loam and peat with a sprinkling of silver sand every season, and in severe weather have been protected with a covering of Fern litter. Last winter a slight mulching of Cocoa-nut fibre was given them in addition. Their foliage dies away entirely during the winter, and the young leaves begin to appear again about the end of March or early in April. From June to the middle or end of October we get a continuous succession of blooms, and about the end of July, if the season is favourable, the borders are a blaze of colour. The bulbs are now very close together, not having been disturbed since they were first planted, with the exception of taking out a small clump occasionally. In 1877 we filled up some vacant spaces with bulbs of *Amaryllis vittata rubra*, which have proved equally hardy, and commence blooming rather earlier than *A. Ackermanni*, and I am convinced that many other species of *Amaryllis* would also flourish in the open air if tried under similar conditions.

HUGO HARPER CREWE.

Calke Abbey, Derby.

## PEACHES IN NOVEMBER.

WE have lately gathered some beautifully-coloured Salway Peaches which promise to make an agreeable change in the dessert during the first fortnight of this month. They are the produce of quite young trees planted against a south wall. They have for some time been covered with fish nets, for as other fruits get scarce, birds are apt to peck them. I find tiffany or frigi domo not so good as fish nets for these very late sorts, that require all the exposure possible to the sun's rays. When allowed to get thoroughly ripe the Salway is not a bad Peach as regards flavour. Its flesh is particularly rich in colour—indeed more like that of a Nectarine than a Peach. Mid-season Peaches, like almost all other kinds of fruit, are, of course, the best; but where it is desirable to extend the Peach season—both early and late—as far as possible, one must concede a point or two in favour of those sorts that, owing to great rapidity or tardiness in ripening, answer that purpose. By taking advantage of such early sorts as Rivers introduced, and such a late kind as the Salway, we get a decided gain as regards length of season, even though those constituting the extreme

limits may not reach the highest pitch of perfection as regards flavour.  
J. GROOM.

## RENOVATING OLD PEAR TREES.

A VERY old Pear tree here has been so successfully restored to vigour and fertility by the treatment recorded below, that a few words anent it may be of service to amateurs having barren trees in a similar condition. The tree in question, an Easter Beurré, and an old favourite that had done good work in bygone years, is on a south wall, and trained on the fan system. How old it is I cannot tell, but the bole is quite 3 ft. in circumference. This tree had been declining in health for years, growing little and bearing but a few fruits, and those so cracked and warted as to be useless. Accordingly, in the autumn of 1877 a good wide trench was thrown out at a distance of 5 ft. from the tree, severing what roots were found beyond that distance; then undermining and carefully working with forks we removed the whole of the old soil right up to the wall and replaced it with pure loam, which was worked carefully and firmly amongst the roots, the latter being brought surfacewards as much as possible. Nothing further was done until the winter of 1878, when, judging the roots would have furnished themselves with feeding fibres, I removed with a hand-saw the whole of the old gnarled spurs, cutting them back close into the old wood; I also shortened back the terminal branches some 2 ft. or 3 ft., leaving quite a skeleton of bare rods. During every mild evening in March and April a good syringing with the garden engine was given in order to induce the old branches to break—and break they did beautifully, throwing out quite a thicket of strong healthy breastwood. This was summer pruned in the usual way. A few fruit buds were formed, and last year a few good fruits were obtained, but this year the labour bestowed upon the tree has been amply repaid, for it is now furnished throughout with strong healthy fruiting spurs, and it has borne a capital crop of large, clean, and in all ways excellent fruit.

A. MOORE.

Craigmore.

## THE INDOOR GARDEN.

## WINTER FLOWERING BEGONIAS.

It is a question if these are so well appreciated as they should be. In the form of vigorous, compact, well-flowered little specimens they are of much service for window or conservatory decoration, or for brightening up plant stoves during the winter months. We know of few more cheerful objects than well bloomed plants of *B. Ingrami* or *Weltoniensis*; and where flowers at Christmas are in demand, these two kinds should certainly be grown. Easily grown as these plants are, many, I think, fail to give them the treatment that they need during the summer. Light, air, and rich food are required to bring them up to the desired standard of excellence, and these essentials generally fail them in a more or less degree when grown amongst the general occupants of a warm house. Early propagation is indispensable. The cuttings should be taken off by March at the latest, inserted singly in small pots, shifted on as required, keeping them well to the light, pinching back the most prominent shoots now and then, maintaining the temperature at about 55° to 60° by day, but admitting enough air to prevent drawing. By the beginning of June the sturdy, vigorous little specimens that such treatment will have produced should be placed either in frames or in a light, well ventilated house. About the latter end of the month shift into

4½-in. pots; some of the largest will go into 6-in. pots. The soil should be rich and free—a good mixture consisting of loam, leaf-mould, and well-rotted manure in equal parts, adding thereto a good dash of sharp sand. Give plenty of air, shade from hot sun, and if the plants are in frames run off the lights at nights when balmy weather prevails. A little of such exposure will impart to them a large amount of vigour, and the flowers will come much finer than when they are never exposed to the full influence of the open air. When the pots get full of roots a little weak liquid manure should be occasionally given, the great point being to keep the plants well in growth until the middle or latter end of September, after which time they should be placed in gentle warmth, a light house where a fire is made on cold nights being the right place for them. From November onwards a constant temperature of 55° is necessary to keep them in blooming condition. These winter flowering Begonias may be well and easily grown by planting them out in frames for the summer months. Make up a bed of good soil in a light frame, and plant out the first week in June, potting them up again about the middle of September, or earlier if they are large enough. In planting out a richer compost can be given them, as there is not much danger of its becoming sour through over watering, so that if anything like good treatment is afforded them they will be sure to make very luxuriant growth. There is a class of Begonias of which *manicata* and *hydrocotylifolia* may be cited as examples, not much grown, but which are well worthy of some attention from those who experience the need of cut flowers in winter and early spring. The flowers of these kinds are by no means brilliant, but they possess considerable grace and delicacy of form and colour, are charming in a cut state, and form a pleasing contrast to bright hued flowers. As foliage plants they have considerable value, thriving better than most things in the dry air of a constantly heated room; indeed, they should be more used than they now are for the decoration of apartments, as if carefully watered they last for some months in good order. All the species grow freely, only needing generous culture and plenty of light when growing.

Byfleet.

J. CORNHILL.

## WASTE OF FORCE IN HEATING.

I HAVE no doubt that there are many like myself who have long since found out that there is a great waste of force in the heating of horticultural buildings, and a waste in many cases over which one has no control. I therefore think if we can set the case fairly before those whom it most concerns, we shall at least show that we are cognisant of the fact, and are anxious to see it remedied. In the first place, I am of opinion that the system of having only one large boiler to heat six or seven houses is a mistake, inasmuch as in seven cases out of ten not more than three of these houses are kept at work throughout the season. In the majority of such cases there will be a stove, a Cucumber house, and early vinery; these, we may surmise, will for the most part require artificial heat nine months out of the twelve. In the case of the others, they will probably only require fire-heat to keep out frost. Therefore we may conclude that for a space of five months we have to heat a large boiler that has force enough for seven houses to afford warmth sufficient for three. If this is not waste of force I do not know what is, unless anyone is going to contend that a large kettle of water will not take any more fire in the same space of time to make it boil than a small one.

To put the case still plainer, a 30-in. saddle



boiler would give all the heat necessary for a period of five months for the three houses, but as at present arranged in the majority of gardens a boiler of the same pattern 4 ft. long would be employed to do all the work; therefore we have to heat a boiler surface 4 ft. in length when one 18 in. less in length would suffice. Surely in this case there must be an unnecessary waste of fuel. It is one thing to heat a range of houses according to the horticultural builder's contract—often made without consulting the gardener—and another to heat it economically.

I may be asked how I should prevent this waste of fuel. To this I reply that I find no fault with the plan of putting down a second boiler, which is very frequently done as an auxiliary in case one should break down under hard pressure, because the arrangement is an admirable one. What I complain of is that two boilers of the same size are put down when one large one and one small one would do better—the small one to heat the two or three houses which are at work the longest period of the season, and the large one when the whole of the number requires it. This is what I should like to see, because the small boiler would require less fuel, and in case of a mishap with the large one the small one would suffice for a few days to keep all safe until a large one could be replaced.

The economical heating of horticultural buildings is a subject that has been sadly neglected. All sorts and forms of boilers have been introduced with a positive assurance that they would save a third or half of the cost of fuel hitherto burned. I am not going to say that they do or do not do so, but I do say emphatically that they cannot do so unless the circumstances of the case are fully met under which they are to be used. If a boiler that has capacity enough to heat 1000 ft. of 4-in. pipe is put down to heat 400 ft. for five months in the season, and the other 600 ft. occasionally, the boiler may be good enough, but it is placed at a disadvantage as regards the economical use of fuel. The boiler is blamed when it ought not to be so, and this state of things will continue until cause and effect are rightly studied and proper arrangements made.

As regards the heating of small boilers compared with large ones, I have no doubt that some will say you have only to make a small fire under a large boiler to do the work required, and so prevent waste; but there is more than the boiler to heat; there is a large vacuum, and the brickwork which surrounds the boiler. Such an assumption is, in fact, very far from explaining the difficulty.

J. C. CLARKE.

**The Guelder Rose for forcing.**—The adaptability of the Guelder Rose for forcing was, I believe, fully exemplified by some plants of it that were exhibited last spring at one of the Royal Horticultural Society's meetings at South Kensington. Probably many others like myself have also used it for that purpose with results in every respect satisfactory, *i.e.*, if the plants were properly prepared, and on that point the whole question of success or failure depends. The right mode of management may be described in a few words. Some fairly strong plants should be selected now and potted at once in moderate-sized pots in a good soil. Before potting cut down any long shoots to within 12 in. of the roots, and then place them in a house all the winter, where they will be just secure from frost. In the spring when they begin to grow give them greenhouse treatment until the end of June, and then gradually harden them off, so as to turn them out of doors about the middle of July. From this time until the autumn they may have the same treatment as Chrysanthemums until the leaves have fallen. They should not be pruned, nor must the

roots be disturbed before they are forced. They do not respond quickly to artificial heat, which shows they are not adapted for very early forcing. Probably the end of January is soon enough to put them into heat, and then the forcing must be gradual. I find in a maximum temperature of 65° I get larger heads of flowers than when they are grown in a higher temperature.—J. C. C.

**Omphalocarpum procerum.**—Under the above name a plant is described in Oliver's "Flora of Tropical Africa," vol. i., p. 171, where it is stated to be the only species of the genus which belongs to the Natural Order Ternstroemiaceæ. The tree grows to a height of from 60 ft. to 80 ft., producing its flowers from the trunk, and these are succeeded by a roundish fruit somewhat in the shape of a skittle ball, flattened at the apex, and when fully grown measuring some 6 in. or 8 in. across. This fruit when ripe becomes hard and woody, the substance of the pericarp being composed of numerous wedge-shaped nodules. The seeds are about the size of a halfpenny with a shining yellowish testa, and a cross section of the fruit shows them arranged in a stellate form. The tree is of limited distribution in Tropical Africa, being recorded only from the Cameroons and Bagroo Rivers and Old Calabar. Though of botanical interest, the tree has hitherto been considered of no economic value. It has lately, however, been stated to yield a substance similar to india-rubber. A quantity of the fruits have recently been received by Mr. Thomas Christy, of Malvern House, Sydenham, who has distributed specimens of them to various museums.—J.

**Arctotis grandiflora.**—This is mentioned as flowering at Kew, and reference is made to me with regard to its culture. It is not a difficult plant to grow, but is unfortunately now so rare that very few can obtain it. If kept in a greenhouse with plenty of light, many flowers are produced at various seasons of the year. The best soil is a sandy loam. It does not require peat, but some may be mixed with the loam, if of a kind through which water does not pass freely. Moderately small pots are best. I planted it out for the summer as an experiment, but not a single flower was the result. It is of rather slow growth, and is increased with much more difficulty than *A. arborescens*. Both kinds I had the good fortune to find in the Cambridge Botanic Garden.—R. J. LYNCH.

**Lapageria rosea and alba.**—If these two lovely creepers are not hardy, they are the next thing to it. Both have been growing here for twelve years in an unheated conservatory, or rather verandah. During the last three severe winters the thermometer inside several times registered 12° and 14° of frost. Although some of the young growths were close to the glass, they never appeared to be injured. They not only exist under this cool treatment, but grow with vigour and flower freely.—W. B., *Windermere*.

**Allamandas restricted at the root.**—I quite agree with Mr. Groom (p. 441) that the roots of *A. Schottii* should be restricted. It is one of the most useful stove climbers we have, easily grown and not subject to the attacks of insects. We have a plant of it here in the stove growing in a 12-in. pot, trained to wires on the roof that has been flowering for quite three months, and which looks as if it would keep on blooming for several weeks yet. We find its flowers useful mixed with Maiden-hair Fern for dinner table decoration.—W. W. HICKLETON.

**Bougainvillea glabra.**—If permitted freedom of growth in a light position this Bougainvillea will flower at least six months out of twelve. But to insure this the wood made the previous season must be pruned hard back—in fact, spurred in like a Vine, and then wreaths of blossoms, surrounded by the beautiful mauve bracts in which resides the great beauty of the plant, 3 ft. long may be obtained in plenty. It is not so much a question of heat, although a little warmth when the plants break into growth will help to lengthen the flowering shoots and bring them out faster. It does not much matter whether the plants are

growing in the border or in pots, although for continuity of bloom the latter is the best position. What is wanted is a good supply of strong vigorous young shoots, and to ensure this the wood of the previous year must be cut hard back to get strong shoots which should be grown in a light place to obtain solidity and to induce freedom of flowering. When planted out soil is not a matter of much importance provided the drainage be right, but in pots fibry loam enriched with leaf-mould or thoroughly decayed manure will be most suitable; about a third of the latter in bulk will be a good proportion, as Bougainvilleas are strong rooting plants. During the ripening time, which will immediately follow the flowering season whenever that may be, and it will vary with the treatment given, the plants should have less water than heretofore, but they must not be allowed to become so dry as to injure the young rootlets. During the flowering season liquid manure may be given, although in giving strong liquids to any plant, its condition and the necessity for extra assistance should be well considered.—E. HOBDAV.

**Chamædorea glaucifolia.**—Most Palms, like the majority of Orchids, do best in small sized pots. I noticed a case in point the other day when visiting the gardens at Gunnersbury House. Here were a beautiful pair of the Palms just named with strong stems about 10 ft. high, each bearing six fine healthy leaves, and showing three robust flower-spikes. This result has been obtained in 8-in. pots, in which they have been growing for a good many years. The plants are supplied with plenty of water, and also get occasional doses of liquid manure from the cowsheds.—A. J.

**Bulbous plants not flowering.**—What treatment is required for flowering the following, viz., *Coburgia acuta*, *Cyrtanthus odoratus*, and *Cooperia Drummondii*? I have them in pots in a greenhouse, but could give them more heat if required. I particularly want to know if they require drying off, like *Ixias*.—A. B. H.

[*Coburgia acuta*, *Cyrtanthus odoratus*, and *Cooperia Drummondii* require no special treatment to make them flower. They should not be so much "dried off" as *Ixias*; they have fleshy roots which are not properly annual, and if they are to be well cultivated these must be preserved, as they are in the case of the *Amaryllis*. No better culture indeed can be recommended for them than that usually given to the *Amaryllis*, but they do not require so high a temperature. A greenhouse is the right place for them. The *Cooperia* and *Coburgia* are both rare among bulbs. The flowers of the former, which are white, open at night. There should be no difficulty in flowering any of the above.—R. I. L.]

## SHORT NOTES—INDOOR GARDEN.

**Trichinium Manglesi.**—This interesting little plant lasts in bloom for three or four months at a time. Will some one successful in its culture kindly say how it should be treated?—J. C. F.

**Camellias.**—"A. M." will find the following to be good, viz.: Double White, Fimbriata, Countess of Orkney, Madame Streakloft, Chandleri elegans, Imbricata, Countess of Newport, a good grower and bloomer—*Lavinia Maggi*, and *Mathotiana alba*.—J. C. F.

**Monstera Adansonii.**—F. D. R.—The fruit of this species is scarcely edible, but that of *M. deliciosa* is, being succulent and possessing a flavour like that of a Pineapple. There is no particular treatment necessary to fruit either of these species, provided they are grown in a hot, moist stove, and allowed sufficient light when the fruits are swelling.—G.

**Keeping Walnuts.**—Can any reader of THE GARDEN tell me the best way of keeping Walnuts and Nuts? I have put into jar with layers of salt between, but they shrivel after this treatment. Should they be soaked in water before bringing them to table? Any hint on this subject will be gratefully received.—HORTICULTURUS.

**Chlorophytum orchidastrium.** Is this plant worth growing? Any information about it will oblige.—A. T. D.

**Chrysanthemums.**—Can these be easily and successfully raised from seed? TUBEROSE.



## NOTES OF THE WEEK.

**Winter flowering climbers.**—Few plants are more useful in stoves or greenhouses than climbers that naturally flower at this season of the year. At Kew the best just now are the following: The Jalap plant (*Exogonum Purga*), which is beautifully in flower in the temperate house on one of the lofty roof supports. It is a *Convolvulus*-like plant with slender wiry stems and heart-shaped leaves. The blossoms are like those of the common Bindweed, except that they have a long narrow tube. They are rosy purple in colour, and as they hang in graceful profusion, nestling amidst the foliage, they have a pretty effect. Though it is not a plant to be recommended for growing in a greenhouse of limited extent, it is a very desirable subject for large houses where there is ample space for it to ramble. It is a Mexican plant, and succeeds well in the open air in some of the southern counties, notably in Mr. Ellacombe's garden at Bitton, where it rambles over shrubs and flowers profusely in the latter part of summer.

**Adhatoda cydoniæfolia**, an *Acanthaceous* plant, is in flower under the roof of the Palm house. It is very handsome, and one that should be grown in every stove. The blossoms are a bright violet-purple, and are produced in rather dense clusters at the point of every branch. The plant is somewhat straggling in habit, but with a little care with regard to pruning and training it may be made an elegant budding plant, well suitable for either a pillar or rafter. To grow it well it requires liberal treatment and plenty of heat, but it amply repays any extra care bestowed on it by the abundance of beautiful blossoms which it yields in early winter.

**Clerodendron volubile** is another plant not so well known as it deserves to be. It is not so showy as either *Balfouri* or *Thompsoni*, but as it flowers at a different and most desirable season there is no comparison of their respective merits. The flowers, which are white, are blotched with pale purple, which makes them attractive, and they are produced plentifully on large loose clusters amongst the large deep green foliage. Some plants under the roof of the Palm house at Kew have been in flower for the past month. Near this are

**Two Jasmines** (*Jasminum hirsutum* and *J. streptopus*), both attractively in flower. The former is in the way of *J. pubescens*, but the flowers are somewhat smaller and borne in looser clusters. They are sweetly scented and white. *J. streptopus* is remarkable for its ivory-white star-like blossoms, that are produced plentifully on every short twig. Both of these *Jasmines* would be desirable for growing in a small state in pots where, no doubt, they would be found useful for cutting purposes and for room decoration. In the Water Lily house the beautiful

**Batatas paniculatus** is still in flower, having been so without intermission throughout the summer. It seems somewhat remarkable that such an easily grown plant with such large and beautiful flowers as this *Batatas* bears is not more generally grown than it is, for there is certainly no other plant so manageable or that better repays any little care that may be bestowed on it. Shortly we hope to give a coloured illustration of this plant with the view of making its merits better known.

**Acacia platyptera**.—This is one of the most attractive plants in the temperate house at Kew at the present time. Some large specimens of it are completely covered with tiny balls of bright yellow flowers. It is not one of the easiest plants to cultivate, but it well repays any trouble bestowed upon it by flowering freely throughout the dull month of November.

**Tecoma capensis** in the temperate house is very conspicuous on account of its brilliant scarlet clusters of flowers; and the *Rhodochiton volubile*, with its long wreaths of purple

bells hanging in profusion for many yards under the roof, likewise attracts the attention of every one. In the greenhouse a fine plant of *Tacsonia exoniensis* is furnished with a quantity of bloom, as is also *Brachysema lanceolatum*, one of the Australian Leguminosæ, which unhappily are not grown nearly so much as they once were, and now ought to be.—W. G.

**The latest Asters.**—In the numerous collection of Asters in the Kew collection the only kinds worth looking at on the 1st of November were *A. turbinellus*, *A. ericoides*, *Novæ-Angliæ*, *pulchellus*, *roseus*, and *oblongifolius*, the latter a free flowering species of recent introduction with bright purple flowers. These Asters are all important kinds to grow, as their flowering season is very prolonged, and they are all handsome and useful in a cut state.

**Adrastus** is the name of a remarkably pretty *Chrysanthemum* that adds in no small degree to the attractiveness of the conservatory at Kew. It is one of the early or summer flowering class, but one of the latest among them, its flowering seasons merging into that of the ordinary large Chinese and Japanese kinds. The flowers, though not very large, are plentiful, and the colour, a rich rosy pink, is cheerful at this time of the year. It is one that is made use of pretty largely for the embellishment of the house, and it is well worth general attention, as it is in every respect a useful variety. The other kinds of *Chrysanthemum* at Kew promise to be exceptionally fine this year.

**Pleione Wallichiana**.—The *Pleiones*, or Indian *Crocuses* as they are aptly called, are now amongst the brightest occupants of the Orchid houses, and the beautiful *P. lagenaria* and *P. maculata* are the most popular, though there are others equally beautiful if they were known. One of these is *P. Wallichiana*, a lovely species with flowers larger than those of *P. lagenaria*, and of a delicate mauve-purple, except the lip, which is variegated with white markings and beset with an elegant fringe. It is quite as easy to cultivate as the others, and may be grown well in a lower temperature. It is just now freely in flower at Kew.

**The Gooseberry Gourd** (*Cucumis grossularia*).—This is an extremely elegant plant when in the condition it now is in the Water Lily house at Kew, where a plant of it is profusely furnished with its small Gooseberry-like fruits, the latter studded thickly over the surface with short prickles. The colour of the fruit is dull green, marked with irregular silvery white patches. Near this is another Gourd of quite a different character. The Snake Gourd (*Trichosanthes anguina*), the fruits of which are some 2 ft. long, singularly twisted, and of a bright reddish yellow colour. Both are peculiar attractions in this house.

**Aphelandra punctata**.—This new stove plant is now in flower in one of the stoves at Kew. It is really a handsome plant, the leaves being prettily variegated with silvery stripes on an emerald green ground, while the spike of clear yellow blossoms and bracts that terminate the stout erect stems is highly attractive. The circumstance, too, of its flowering just at this dull season considerably enhances its value. It requires stove heat, and appears to be of easy culture. Even when not in flower it is a handsome plant.

**Nematanthus longipes**.—This is a singular, and at the same time a beautiful plant. It is a Gesneriad, but, unlike any of the commoner members of that family, it is a most attractive plant when seen in such fine condition as a plant of it now is in one of the stoves at Kew. Its stems are stout, the leaves thick like those of a *Hoya*, and the blossoms, suspended from the under sides of the stems on thread-like stalks, are tubular and red in colour like those of *Columna Schiediana*. It is well worthy of general cultivation.

**Sweetly-scented shrub.**—A most deliciously scented shrub is the *Toxicophylea spectabilis* or *Acokanthera*, as it is now called at Kew. It grows erect, and has thick leathery leaves, from the axils of which are produced dense whorls of

tiny white blossoms that scent the house with their delicious fragrance. Though not adapted for cutting purposes, small plants of it in pots are invaluable at this season for embellishing a conservatory, and as the plant is a native of the Cape of Good Hope, it is quite amenable to culture in a cool temperature.

**Roses in November.**—Calling at Thoresby the other day, I was surprised to see quantities of rare blooms everywhere. Both upon the terraces and in all sheltered corners of the kitchen gardens *Tea* Roses and other sorts have been planted in quantity inside to yield blooms for cutting. *Tea* sorts are also planted against the back walls of early and late vineries, and when in bloom are a sight worth remembering.—J. M. C.

**Michrocachrys tetragona**.—The principal attraction belonging to this Tasmanian *Conifer* is its fruit, without which it would be liable to be overlooked; its habit is weak and procumbent, and the foliage dull in hue. The fruit, which resembles a Pine-apple in miniature, is about  $\frac{1}{2}$  in. in length, bright scarlet, and when borne in profusion, as it sometimes is, renders the plant not only interesting, but showy. A specimen about 2 ft. high is now bearing a few fruits in the temperate house at Kew.—H. P.

**Habrothamnus fasciculatus in fruit.**—Showy as are the flowers of this plant, especially when allowed freedom of growth, its fruits are no less beautiful. They are about the size of small Cherries, of a bright crimson colour, suffused with violet, and are borne in great profusion. Plants of it in the temperate house at Kew, clothing large pillars or columns, are just now both flowering and fruiting freely.—H. P.

**Bomarea Carderi and oligantha**.—These two fine *Alstroemerias* are now both in flower in the succulent house at Kew, where planted out and trained up the roof they thrive satisfactorily, and rank high as greenhouse climbers of moderate growth, for not only are their flowers very handsome, but they are produced at intervals throughout the year. *B. Carderi* has two umbels, consisting of from twenty to thirty flowers just commencing to expand, and a fine mass of showy fruits. *B. oligantha* is altogether of a slighter habit of growth; its flowers also are much smaller, but better in colour than those of *B. Carderi*, the outer segments being bright red, and the inner yellow spotted with crimson.—H. P.

**New Salvia**.—A curious and yet beautiful *Salvia* has been sent to us by Messrs. Cannell, Swanley, under the name of *Mons. Issanchou*. It may be best described as *S. splendens* with the blossoms and bracts variegated with white and scarlet in longitudinal stripes. It is a very pretty variety, and being quite distinct from any other is well worthy of cultivation for embellishing the conservatory at this season.

**Polygala Chamæbuxus**.—The purple form of this was very beautiful at Glasnevin last week, doubtless out of its natural season. Strong plants of this form are difficult to get, or we might look for some very charming effects from it on the better kind of rock gardens now being made.

**Maranta sanguinea** is one of the few among the numerous species of *Maranta* that are desirable to grow for the sake of the flowers, which in this case are of a deep flesh tint produced in dense clusters well above the foliage, which, like that of most of the others, is handsome. It is now in flower in the Pine-apple Nursery, Maida Vale. It is also called *Phrynium sanguineum*.

**White Chrysanthemum, La Petite Marie**.—As a pot plant this variety has no rival, and to maintain this character it must be a free flowerer, which it certainly is for at least three months in succession. Early struck plants may be had in bloom about the middle of July, whilst those struck later are in flower now, October 29. It is without doubt the dwarfest variety extant, rarely exceeding 8 in. or 9 in. in height, and bearing from twenty to thirty reflexed flowers



which open slightly tinged with yellow, but soon change to a pure white. This peculiarity refers to the summer months, as in autumn it opens a pure white. *Seur Melanie* will no doubt come to the front, coming as it does between the flowering seasons of the early and late varieties. *La Vierge*, which much resembles *Souvenir d'un Ami*, is a fine kind, opening pure white with fluted petals of fine substance. The above are all distinct from such old sorts as *Cedo Nulli*, white *Trevenna*, and flowers of a similar class. W. T. W.

**New Bomarea.**—A beautiful addition to greenhouse climbing plants is *B. conferta*, a species recently introduced from South America in large quantity by Messrs. Shuttleworth & Carder, in whose nursery at Park Road, Clapham, we first saw it the other day. Judging from the illustrations and specimens, it is more beautiful than any other, the colour of the blossoms being a brilliant rich crimson, whereas a yellow colour prevails in the others with the exception of *B. Carderi*, in which they are for the most part pink. It has the same scandent habit of growth as the others, the stems being slender and furnished with deep green leaves, somewhat hairy on their under surfaces. The blossoms are produced in drooping umbel-like clusters terminating the branches, and are about  $2\frac{1}{2}$  in. in length, very numerous, but borne in compact tufts. For adorning a conservatory roof or its supports, a handsomer plant could not be desired, and it is apparently as easy to cultivate as any of the others if planted out in good free soil. Mr. Shuttleworth grows his plants in a cool Orchid house, and he says that no doubt that is the best place for it, as he collected it at high elevations on the mountains about Bogota. It was originally discovered by Hartweg at Pinchincha, and was named by Benthams some years ago.

**Saxifraga Fortunei.**—This is one of the few deciduous Saxifrages, and though hardy its flowers and leaves are quickly affected by frost. It would make an excellent greenhouse plant for autumn, but when grown out of doors it requires the protection of a bell-glass as soon as there is any danger of frost. The flowers are still more irregular than those of the Chinese *S. sarmentosa*, which they resemble. Their appearance when not fully in blossom is peculiar, the long tongue-like petal being expanded, while the shorter petals are curled inwards.—C. M. O.

**An Aster from Washington.**—I send herewith specimens of one of our most beautiful perennial Asters (*A. oblongifolius*). At this date (Oct. 19) masses of it in my nursery are truly beautiful; its bright azure blue can be seen from considerable distances, and is most striking. I know of no Aster to compare with it, or indeed any other hardy flower at this season. It is now in full beauty, and if the weather keeps open it will continue fine into December, when all other outdoor plants are past. A few degrees of frost will not affect it; only an American winter will cut it off. I know of no plant which would be more at home in the wild garden than this. I grow it in a large bed, in which the plants are not disturbed, thinned, or tied. We only keep the beds clear of weeds; the branches then take their natural habit, and only in this way can one see Asters in all their elegance and beauty. My plant came originally from Texas. JOHN SAGE, Washington City, D. C.

**Cyclamens from Birmingham.**—A charming bunch of several sorts of Cyclamen persicum, from Mr. Spinks, of the Royal Nurseries, Edgbaston, shows well what may be done by carefully selecting the finest forms for about half a dozen seasons. The strain is certainly a very fine one, the colours varying from the deepest crimson to the purest white.

**Witsenia corymbosa.**—Many know this plant as a pretty and interesting subject for the greenhouse, but few, unless they have seen a very large and bold plant, know its value. At Glasnevin at present there is a specimen in good flower about 4 ft. through, and a more desirable plant one who sought distinct and informal plants for

select groups or arrangements could hardly find. The curious Iris-like growth, prolonged and branched, and the fine habit as well as numerous blue flowers, go to make it valuable. All who have it should encourage it to form a large free specimen.

**National Rose Society.**—The fixtures for the National Rose Society for 1882 are, July 4, at the gardens of the Royal Horticultural Society, and June 28, at Bath. As these dates are too early for the northern and midland Rose growers, it is intended that a third exhibition shall be held about the third week in July at some town in the midland counties.

**Meyenia erecta alba.**—This is a very elegant stove plant. It reminds one somewhat of the flowers of the large tropical *Utricularia*. Now in flower at Glasnevin.

**Epacris pungens.** A very pretty little species in flower at Glasnevin at present. One of the kinds that are well worth growing as any hybrids that have been raised, and very delicate in colour.

**Babingtonia camphorosma.** This pretty greenhouse plant is now in flower at Glasnevin. It has delicate pink flowers and buds, and, well grown, we should say it would be very handsome.

**Masdevallia tovarensis.**—The largest specimen of this lovely Orchid, in the nursery of the New Plant and Bulb Company, Colchester, has upwards of 150 leaves and 30 flower-spikes with the blossoms just expanding. I there a larger plant on record?

**Foliage of the drooping Moneywort.** I send some nicely tinted leaves of *Lysimachia clethroides*, which are perhaps prettier than its flowers. A plant not in a bog bed is not coloured in this way.—C. M. O. [The foliage is very good indeed in colour.—ED.]

**Plumbago zeylanica.**—This is now in flower in the Palm house at Kew; it differs from *P. capensis*, to which it bears some resemblance in its flowers being rather smaller, and instead of blue being pure white. Its habit is much the same as that of *P. capensis*.—H. P.

**Tritonia aurea.**—In a cool compartment of the T range at Kew is a fine mass of this showy plant, well exemplifying its value as a decorative subject at the present time, when flowers of all kinds are scarce, particularly bright orange flowers. It grows freely in good loam, and only requires to be kept free from frost.—H. P.

We learn that there is likely to be keen competition for Messrs. Sutton & Sons' prizes for vegetables at the meeting of the Royal Horticultural Society on Tuesday next. Messrs. Sutton will exhibit vegetables largely, and a fine display of Apples is expected from the Kentish growers.

## THE KITCHEN GARDEN.

### THE POTATO HARVEST.

MR. R. LLOYD (p. 385) seems to make out that Mr. Muir's practice of letting the "disease do its worst" before lifting is quite right so long as he leaves the haulm on the crop after the disease has made its appearance. We are then asked, But why leave the haulm after the disease has commenced an attack on it? What is gained by leaving it? Well, if I were to advocate the other side of the question, I would say that it would not be unreasonable to expect that while the haulm was green upon the crop the tubers would still be growing. But surely Mr. Lloyd does not expect this to take place after he cuts the haulm off? I must ask him, then, What is gained by leaving the tubers in the ground for a month after the haulm is removed? I very much question if this cutting off the haulm is the best thing to do. Mr. Lloyd tells us that the disease is often found on the "stems close to the ground" before it shows itself on the leaves. In that case is it not possible that when the haulm is cut off as much of the disease may be left attached to the tubers as is carried away? The best plan is to gather the haulm together in both hands, place one foot on each side of it on the top of the ridges, and pull it clean out. If carefully done scarcely a tuber will be displaced. When the haulm is only cut off, the Potatoes are still linked together by a decaying, possibly a diseased, stem; but if it is pulled up the disease in the haulm is certainly removed, and

the tubers in a measure become isolated. If they are then lifted as soon as the weather will permit, dried, and kept from sweating by turning, the loss will be reduced to a minimum. If "A. D." will refer to my former remarks he will see that they only applied to early and second early sorts which are most grown in small private places, and it was chiefly to such that my remarks were intended to apply—not to growers for market or farmers who grow the great bulk of late sorts.

Cockfield.

R. INGLIS.

**Heeling in Broccoli.**—The scarcity of Broccoli last spring was very much felt, and many experienced a difficulty in finding a supply of vegetables at that season, as not only did the severe frost make an almost clean sweep of Broccoli, but it left little else that could be used as a substitute. Although last winter was exceptionally cold, there is no doubt that the autumn had much to do in causing the great loss that occurred among Broccoli, as they grew late and were very succulent and on that account, instead of being hard in the stem, it was ill ripened, and as they are in a similar state now to what they were at this time last year, the only way to preserve them is to at once set about laying them in, as with the stalks buried there will be some chance of their standing the winter. The way to do this is to begin at one end of the row with a trench, and then heel the plants over so as to bring the collar down level with the surface of the soil, when the lower portion of the stem can be buried. Protected in this way, they take little harm, as the leaves, instead of falling away and exposing the heart during frost and snow, as they do when the plants are upright, they fold or lay over that vital part, which they shelter from harm. Many object to laying in Broccoli because of the check they sustain, but it is the check partly that saves them, and although the heads may in consequence be smaller, it is better to have them so than to have none at all. Early kinds, such as Veitch's, Snow's, and Backhouse's, are best laid in on a warm sheltered border under a south wall, where they can have a little straw or other light covering thrown over them, which will prevent the tender white heads as they turn in from being injured by frost.—S. D.

**President Garfield Pea.**—Among the novelties to be sent out by Messrs. Sutton in the forthcoming season is a valuable and distinct main crop Pea of their own raising, which they have carefully tested for the last four years in their grounds at Reading. It is to be called "President Garfield."

### HEREFORD PEAR AND APPLE SHOW.

THAT Hereford is in advance of many of what are considered our fruit growing counties in the enterprise shown in the culture of hardy fruit is evidenced by the publication of that magnificent work "The Herefordshire Pomona," and also by the zealous care of the Pomona Committee of the Woolhope Club, to which that work owes its origin, and under whose auspices the exhibition of fruit has for some years been held at Hereford, an exhibition which is considered of sufficient importance to attract exhibitors from different parts of the country, as far even as Kent and Sussex; and as the present season has been on the whole a good one for Apples, it was to be expected that fruit of great excellence both in size and quality would be exhibited. With a body so scientific as the Woolhope Club, and so thoroughly practical in its character as well, it may be concluded that the object of the exhibition is not merely to enable growers to send their fruits to be seen, but also to make it of practical benefit to fruit growers, and one of the notices to exhibitors evidences this, for when giving the usual notices to exhibitors that the fruit must be named, it is added that when marked "name unknown," "the same will be given it as a recognised variety." In this way exhibitors often have their difficulties solved as to the varieties they grow



There are several divisions of exhibits, comprising the culinary and dessert Pears and Apples, and also for what are called vintage fruit, that is, fruit for making the perry and cider, for which Herefordshire is famous. This gives an opportunity for bringing forward what are often very interesting fruits having a local reputation and name of which very little if anything is known in other parts, and it is very probable that in many parts of England there are still valuable fruits which might be worthy of more extended cultivation.

The exhibition this year was held in the museum and free library, the Apples being laid out in the larger room, and one is at once struck on entering at the rich colouring of the fruit, the glow of crimson and gold being quite remarkable, while it is evident that size is also very noticeable.

In the open class for fifteen dessert Apples, the first and second prizes were awarded to Kentish growers, the first going to Mr. Roger Leigh (gardener, Mr. Haycock), Barham Court, Maidstone, for a splendid lot of high-coloured and well-grown fruit, comprising King of the Pippins, Reinette du Canada, Mother Apple, Ribston Pippin, Melon Apple, Reinette Grise, Cox's Orange Pippin, very fine, Calville Blanche, Court Pendu Plat, Brownlee's Russet, Mannington's Pearmain, Cornish Gilliflower, Sam Young, Lord Burleigh, and Margil; the second prize went to Mr. L. A. Killick, Mount Pleasant, Langley, near Maidstone, for Mabbot's Pearmain, Court Pendu Plat, Yellow Ingestre, Margil, Cox's Orange Pippin, Duchess of Gloucester (very high coloured), Blenheim Orange, Queen Caroline, Royal Russet, Worcester Pearmain (very high coloured and beautiful), Fearn's Pippin, Polonia Pearmain, Ribston Pippin, King of the Pippins, and one unknown. In the third prize there was a plate of Cornish Gilliflower, of extraordinary size and quality. In class 2, for 18 varieties of culinary Apples, the first prize was awarded to Mr. Lewis Killick for a splendid collection, consisting of Emperor Alexander, Warner's King (magnificent), Blenheim Orange, Bedfordshire Foundling, New Hawthornden, Hollandbury, Loddington, or Stone Apple, Cox's Pomona, Tower of Glamis, Golden Noble, Lord Derby, Round Winter Nonsuch, Lewis's Incomparable, Minchall Crab, Striped Beefing, Beauty of Kent, and Wellington. The second to Messrs. Davis and Co., Hereford, for Cox's Pomona, Dr. Harvey, D. T. Fish, Royal Russet, Blenheim Orange, Emperor Alexander, Lord Suffield, New Hawthornden, The Old German, Betty Geeson, Broad End, Old Hawthornden, Hollandbury, Cellini, and one unknown. The difference in colouring between these two collections was remarkable, saying much in favour of both the cultivation and climate of Kent. In the amateurs' class of nine dessert Apples the first prize was awarded to Mr. Roger Leigh, of Barham Court, Maidstone, for Melon Apple, Reinette Grise, Cornish Aromatic, Ribston Pippin, King of the Pippins, Cox's Orange Pippin, Mannington's Pearmain, Mother Apple, Margil; the second was awarded to Sir Henry Stanhope, Holme Lacy, Hereford (gardener, Mr. Young), for Fearn's Pippin, Mother Apple, Cox's Orange Pippin, King of the Pippins, Golden Reinette, Court Pendu Plat, Ribston Pippin, Scarlet Nonpareil, and Melon Apple. In class six for five varieties of dessert Apples, the first prize went to Mr. Bridgman, gardener to J. Somers Scott, Esq., Great Marlow, for Court of Wick, Braddick's Nonpareil, Cox's Orange Pippin, Lord Burghley, and King of the Pippins; the second to Mr. Edw. Davis, Burlington Court, Hereford, for Ashmead's Kernel, Seek no Further, Court of Wick, Margil, and Golden Harvey. In class 7 for nine culinary Apples, Mr. Haycock was again first with a fine collection, consisting of Lord Derby, Bedfordshire Foundling, Belle Dubois, Warner's King, Belle Josephine, and Reinette du Canada; the second prize was awarded to Sir Ed. Stanhope, for Wormsley Pippin, Alfriston, Warner's King, Blenheim Orange, Emperor Alexander, Lord Suffield, Cox's Pomona, and Beauty of Kent. In class 8 for culinary Apples, five varieties, the first prize was awarded to a foreign fruit-grower, Mons. Benoist, of Havre, for Alfriston, Reinette Grise de Canada, Gloria Mundi, Reinette Douce, and Reinette

de Versailles. This was a splendid lot of fruit; the second was awarded to Mr. Wilkins, Barton Farm, near Malvern, for Blenheim Orange, Monmouth Pippin, Emperor Alexander, and two name unknown. In class 10, for collections of Nonpareil, not less than three varieties, Mr. Haycock was first; Mr. Bye, gardener to Mr. Arkwright, of Hampton Court, Leominster, second. The first collection consisted of Braddick's Nonpareil, Scarlet do., Lodgemore do., Ross do., Old Nonpareil, and the second were Old Nonpareil, Scarlet and Ross do. In the collection for Russets, Mr. Haycock was first with Royal, Brutons, and Golden Russets. Mr. Jenkins, of Myton Court, Hereford, second in class 15 for best flavoured Apple, Cox's Orange Pippin, carried off all the three prizes. There were also some excellent specimens of Golden Harvey, Ribston Pippin, Blenheim Orange (indeed, the Blenheims were one of the great features of the show), the old Pearmain, and Cox's Orange Pippin. In the class for the heaviest and best dish of culinary Apples, consisting of five fruits, Mr. Haycock was first for Belle Dubois or Gloria Mundi (weight, 5½ lb.); the second to Dr. Bull for Gloria Mundi (5 lb. 3 oz.), and Mr. Killick third for Stone's Apple (4 lb. 11 oz.)

In the collection of Pears, eighteen varieties, the first prize was awarded to Mr. Haycock for splendid fruit of Easter Beurré, Gen. Todleben, Marie Benoist, Emile d'Heyst, Conseiller de la Cour, Pitmaston Duchess, Duchesse d'Angoulême, Beurré Hardy, Beurré Diel, Passe Crassane, Durandau, Brown Beurré, Doyenné du Comice, and Beurré Superfin. The second prize was awarded to Sir Henry Stanhope for very fine fruits of Beurré Sterckmans, Beurré Bachelier, Duchesse d'Angoulême, Beurré Diel, Van Mons, Flemish Beauty, Beurré d'Arenberg, Duchesse d'Orleans, Delices Hardenpont, Gen. Todleben, Marie Louise, Triomphe de Jodoigne, Glou Morceau, and Marechal de la Cour. In the collection of four culinary Pears, the only exhibitor was Mr. Haycock, who had Uvedale's St. Germain, Bellissime d'Hiver, Triomphe de Jodoigne, and Beurré Diel. In the class for nine dessert Pears Mr. Haycock was again first with General Todleben, Conseiller de la Cour, Duchesse d'Angoulême, Doyenne du Comice, Pitmaston Duchess (splendid), Easter Beurré, Beurré Superfin, Durandau, and Beurré Hardy. Sir Henry Stanhope was again second with Easter Beurré, Pitmaston Duchess, Duchesse de Bordeaux, Marie Louise, Hacon's Incomparable, Urbaniste, Doyenné du Comice, and Duchesse d'Angoulême. In the class for five varieties Mr. B. S. Austin, of Petworth, was first with Duchesse d'Angoulême, Beurré Bosc, Marie Benoist, Beurré d'Anjou, and Durandau. Sir H. Stanhope was second with Triomphe de Jodoigne, Flemish Beauty, Duchesse d'Angoulême, Marie Louise, and Beurré Superfin. In the class for three dessert varieties, the first prize was awarded to Mr. H. Bridgman for Pitmaston Duchess, Beurré Bachelier, and Beurre Clairgeau (very handsome). For five cooking Pears, the first to Mr. Haycock for General Todleben, Uvedale's St. Germain, Bellissime d'Hiver, and two others. The prize for the best flavoured Pear was awarded to Beurré Superfin (exhibited by Mr. Haycock). The heaviest dish of Pears in the show, five fruits, was awarded to Mr. Benoist for Belle Angevine, the five weighing 11 lb. and the heaviest 2 lb. 14 oz. Fine dishes of Marie Louise and Louise Bonne were also shown, but neither in the Apples nor Pears were there any new variety considered worthy of notice.

The collection of vintage fruit was very large, and exhibited a very brilliant appearance; the Foxwhelp, New Foxwhelp, Cherry Pearmain, Ten Commandments, Winterpool, Crane Red, Forest Styre, Rolling's Kernel, Black Wilding, and Hand-some Norman being amongst the most highly coloured. But these fruits have more interest for the cider growing districts than for the general public. There was also a nice collection shown by cottagers, and a large number of Apples not for competition. It will thus be seen that the exhibition was not only interesting, but very large; indeed the best that the Woolhope Club has ever held, and is an evidence of the increased careful

attention which is being given to that which is essentially an English fruit. France beats us in Pears, and America can produce large fruits, but for excellence of quality there is no country that can compare with England in Apples, and it is well that attention should be given to what is not only an agreeable, but also a most useful fruit, and in this a good example has been shown by the Woolhope Club.

## EDITOR'S TABLE.

CANNA EHEMANNI.—To-day (Nov. 1), from Sir George Macleay, the handsomest plant that has ever come to us, not excepting the Bamboo-like Sparaxis from Guernsey. The stem sent was over 10 ft. high, the leaves 2 ft. 6 in. long and 1 ft. wide, the whole surmounted by a graceful drooping group of deep rose-coloured flowers and buds. Mr. Green writes that the remarkable shoot sent is one of ten equally fine. The managers of public gardens and private growers with roomy, warm houses will welcome a plant at once so remarkably handsome in bloom and foliage, and so graceful in habit.

A WINTER STARWORT.—From Pendell Court also, an old favourite, the late-blooming and handsome Aster grandiflorus, which is the latest and one of the best of the Starworts. We do not know how Mr. Green manages it, but generally it blooms so late that the shelter of a warm wall or a frame is desirable to save its flowers, but it is a very hardy plant. The flowers sent are 2 in. across, a velvety mauve with green-yellow centre, and very numerous. It would be well worth growing in pots to bloom in the cool house.

EUCHARIS CANDIDA.—From the Royal Nurseries, Harborne Road, Edgbaston, Mr. Spinks sends us some blossoms of this very beautiful plant—a rival to the well-known E. amazonica. It appears that Mr. Spinks does not find it to be free flowering, but our experience is otherwise. In our note on the plant last week we mentioned that it ought to be taken in hand by the London market growers. Since then we learn that it is sent into Covent Garden Market already, but in small quantities compared with E. amazonica. Now that there are such large importations being made of it, no doubt it will be grown more plentifully for market purposes, for the bouquetists prefer its blooms in many cases to those of the larger flowered kinds.

## THE FLOWER GARDEN.

### ALPINE PLANTS AND SOILS.

THIS subject has come again to the front, yet, on the whole, but few practical suggestions are forthcoming. I am of opinion that the matter relating to particular soils for the successful culture of alpine is much overdone, and that many a failure is due to over-coddling some of the so-called miffy alpine. How comes it that some rare species lost sight of thrives well in a neglected state? It has been my lot to notice this upon more than one occasion; the drainage in the pots has been blocked up, and, what seems worse, the ball of the plant has been literally channelled by worms, and yet it thrives. "Canonicus" (p. 439) takes the Primulas as examples, and quotes P. marginata as flourishing only, he believes, in limestone; whereas to P. viscosa limestone is proportionately distasteful. My experience of Primulas and the soils which I have used for them is this, that the whole group will succeed well in a mixture of soil similar to that used for Auriculas. From time to time I think I may fairly state that I have handled almost every species in cultivation, and at potting time, an operation which should be performed directly after flowering in the majority of cases, I used one compost only, and that good



fibrous loam, obtained from Epsom, leaf-mould, dry cow manure, rubbed through a sieve, charcoal, and sharp silver sand. Previous to using the cow manure it is advisable to place it in the hen yard for the hens to pick over, or if these latter be not at hand it may be baked or heated to an extent likely to destroy worms or any insects or their eggs which may happen to have become located there. To "Canonicus" questions what sort of grit should be used, I reply, any sharp grit, avoiding at all times sand of a close texture. Macadamised grit is excellent, and good silver sand may generally be got.

To *Primulas* of the *acaulis* section I always give manure freely whether cultivated in pots or in the open ground. If in pots and during their growing season I occasionally water overhead with soot and cow manure, which I have found most beneficial. The old double crimson (*P. acaulis* fl. pl.) especially seemed to luxuriate under this treatment, both as regards flowers and foliage. *P. cortusoides amœna* (Sieboldi) and its many forms seem to be quite at home in such soil, and among other species which it suits may be mentioned *P. calycina*, *marginata*, *Candolleana*, *Palinuri*, *luteola*, *rosea*, *denticulata*, *cashmeriana*, *purpurea*, *Fortunei*, *glaucescens*, *japonica* (kept moister than the others), *integrifolia*, *minima*, *Munroi*, *spectabilis*, *nivalis* (a name since found incorrect) *villosa*, *viscosa*, *verticillata* (a kind not hardy in all localities), *Wulfeni* and a variety called *Vansoi*, *intermedia* and its endless forms, *capitata*, and others. *Farinosa* and *scotica*, being so freely reproduced from seed and of such quick growth, flower the same season. It will thus be seen that the collection of *Primulas* with which I have had to deal under this treatment was by no means a small one. The only distinction made was that more drainage was used for such kinds as *marginata*, *minima*, and one or two others than for the rest, and the result was all that could be desired.

Treatment of this kind holds good in the case of the majority of alpine plants. There are a few for which special attention is desirable, such, for instance, as that gem among Boraginaceæ plants, *Eritrichium nanum*, with its lovely sky-blue flowers so seldom seen. This seems to suffer more than most of its companions from transit, and if alive when received it generally succumbs during the following winter. It seems most impatient of damp and fog, and should be grown in a cold house or one from which frost can be excluded, suspended near the glass in a pot or shallow pan; the plant should be fully 1 in. above the rim of the pot, and tightly fixed between two pieces of flat stone, always keeping it dry overhead and free from drip. Some of the rarer *Gentians*, too, require a little judicious management. They all seem to delight more or less in firm soil. In potting such kinds as *verna*, *bavarica*, *alpina*, *gelida*, and others, I imagine that I have some hard-wooded Heath in hand, and ram the soil equally tight in the pots, using loam principally. Where the plants are in the ground I occasionally stamp my foot on them, and with no small force, in order to fix them firmly in their positions, but these are exceptions, not the rule.

I disagree with "Brockhurst's" remarks (p. 388) where he recommends *Saxifrages* to be always placed high and dry; had he recommended such a situation for the "crusted" section, I would have endorsed his remarks, but I should be the last to place the mossy (*hypnoides*) group in a dry spot, to say nothing of *S. granulata* and its double form, the yellow flowered *Hirculus* (*hieracifolia*), so suitable for the border, the broad-leaved or (*Megasea*) group, *Geum* and *umbrosa* sections, so useful for naturalising in damp and shade, and last, but not least, the giant and moisture-loving *peltata*. The latter in moist peat will grow upwards of 3 ft. in height, in company with *Cypripediums*, *Dentarias*, *Corydalis nobilis*, and others. In my opinion many little alpine gems are subjected to too much interference; hence arise many failures. They are impatient of having their tiny fibres disturbed. Once well planted they should be allowed to remain; disturbance and the re-

peated visits of slugs carry off many, as do also incessant damp and fogs. E. JENKINS.

#### HARDY PLANT LISTS.

THE remarks of our reverend friend "Canonicus" (p. 439) suggest to me a subject which I have often thought worth notice in your columns. I allude to catalogues of hardy plants. I suppose everybody keeps a list of the hardy plants he possesses, of some sort or other. For a mere catalogue a printed list ticked off will suffice; but those who cultivate flowers for pleasure, and who like to know all about them, should go a good deal beyond this by keeping up a plant list, wherein can be noted results and aims, successes and failures, cultural memoranda, and all other items which are noteworthy. I call to mind, as I write, several catalogues of plant collections which are kept up after this fashion, and which are a treat to look through. Such a plant list should be a small quarto, alphabetically indexed, with ruled columns, and these might be filled in to suit the peculiar bent of the possessor. The botanical items should be noted in one column, cultural notes in another, derivation and meaning of the names in a third, locality where found, or perhaps the giver if presented to you, in a fourth, your own experiences in a fifth column, and so forth. With a plant list of this sort at hand on your library table, you can in a moment jot down any useful information, such as cultural hints as to the suitable soils for *Primula marginata* and *viscosa*, and the proper way of planting *Woodsia ilvensis*, which occur in the interesting note of "Canonicus." In fact, it becomes one's commonplace book, and one soon gets into the way of using it every week when reading THE GARDEN or other horticultural journals. One of your lady correspondents keeps up a most interesting plant list of this sort, which it was my privilege once to have the loan of for a few days. Of course the keeping up of such a book will entail a lot of trouble, but I am quite sure it will repay it tenfold. BROCKHURST.

*Didsbury.*

*Leucojum vernum* fl.-pl. (the double Spring Snowflake).—Has anyone now living seen this plant? and does anyone possess it now? I have again and again had bulbs sent to me, which purported to be this variety. Whenever they have bloomed they have proved to be the common double Snowdrop (*Galanthus nivalis* fl.-pl.). Occasionally the bulbs have had a true Snowflake look, but in this case they have always refused to grow, and soon rotted away. I am told on authority which I cannot doubt that the late Mr. Geo. Wheeler had once a good stock of this bulb in his famous gardens at Warminster. It is singular that so fine a variety should have been allowed to die out and become lost, as appears to be the case. Has anyone ever seen a double variety of *Galanthus plicatus*?—H. HARPUR CREWE.

**Fine seedling variety of Begonia Frœbeli.**—About this time last year, when visiting one of the Cork nursery gardens, I was shown a lot of young seedlings of *Begonia Frœbeli*, and was struck by the abnormally large size of the leaf of one of them, which I bought in the hopes of the flower when it came being also proportionately fine and above the ordinary size. When it bloomed it quite answered my expectations, but this year, as the plant has increased in age and strength, it has quite surpassed them, and is the finest form of this handsome autumn-blooming plant I have ever seen. I enclose you a paper fac-simile of one of the leaves, with a pencil tracing showing the size of a leaf of the ordinary variety drawn inside it. The spike of bloom has now three fine flowers open on it, and the number it bears, counting all the buds yet to open on three or four branchlets, is twenty-two. The blooms are of the most glowing shade of crimson and of extra fine size and substance, the petals well overlapping one another, and being all males, instead of in the usual proportion of one male in the middle of two female blooms, makes them all equally large in size, adding greatly to the beauty

of the plant. Another fine head of bloom is coming up, and will be in before the first has finished blooming.—W. E. GUMBLETON. [The paper cutting represented a leaf 15 in. long and 11 in. broad, the inside tracing being 8 in. long and 6½ in. broad.]

**Hardiness of Muhlenbeckia complexa.**—Anent the note (p. 407) on this beautiful and distinct plant, I am glad to say that during the past three winters it has stood out with me without the least protection. My tiny plant of 1877 is now a handsome bush. Under certain conditions it may be called a creeper or a climber, for it has both habits. Here it is planted between large stones, and must be somewhat dry at the roots. Near it *Rose Blairi* No. 1 is nailed to the south wall, and into this it has climbed. Lower down are such things as *Geum*, dwarf *Phlox*, and *Polygonum Brunonis*, amongst and over which it has grown in the creeping style of a *Vinca*. I have never yet seen the least signs of bloom, and indeed (though it is always desirable to see flowers) they are not needed to render this at once one of the most distinct and decorative of rock plants. I will only add that the frosts affect it in the same way as *Roses*, viz., the late and unripe growths are killed, but so light is the damage thus done that one has to seek for the few shoots so lost. It should be planted on the higher parts of rockwork, and if near spar or light coloured stone, as on my bit of rockery, its small and dark foliage is seen to greater advantage than it otherwise would be.—J. WOOD, *Kirkstall*.

**Summer and autumn treatment of Polyanthus.**—Mr. Douglas (p. 392) and Mr. Brockbank (p. 426) have referred to this with the view of suggesting a remedy for red spider and the loss of plants which it entails. There may be varieties more liable to its attacks than others; but as a general rule, the sun, exposure, and drought I find the great motive agency in its production. Under these influences the *Polyanthus* will not thrive, and when debilitated the red spider completes the destruction. What is the remedy? I find this insect never attacks a plant in vigorous growth. Keep up, then, a sustained vigorous growth. I do this by top dressings around the crowns, especially when flowering has been completed, and when seed-pods are picked off. This is the time most people neglect them. This I find a remedy, too, for the tendency often referred to by Mr. Wolley Dod to produce woody stems, which means the loss of the plant, for it is useless for flowering afterwards. Division and remaking the beds at least every second year I find, too, indispensable to success in summer. Nothing will make up for care and attention.—W. J. M., *Clonmel*.

**Hardiness of Lobelia fulgens.**—There seems to be some doubt as to the hardiness of this plant. I purposely left in the ground all last winter a large patch of it. It shot up bravely in the spring, and is still a mass of dark purple leaves and spikes of scarlet flowers. It has much healthier foliage than the rest of my stock which was potted and put in a cool greenhouse. In future I shall leave all my plants out without even being protected with cinder ashes, as last winter was as great a trial as we are likely to have. My plants were not even sheltered or in a dry place, but where it is decidedly damp.—A. P. H., *Suffolk*.

**A hardy Dahlia.**—As so much is now said in favour of single Dahlias, it is curious that more notice is not taken of *D. glabrata* (*D. Decaisneana*, *D. Merki*), which has the advantage, rare amongst Dahlias, of being hardy, at least in Ireland. The small pale mauve blossoms, with centres of dark brown, often mixed with gold colour, are distinct and valuable as autumn flowers, and look well in vases, especially when mixed with autumn leaves of brilliant tints.—C. M. O.

**Viola odorata argentiflora.**—This well deserves its name (not *argentea*, as sometimes miscalled) and all the good things its raisers say of it. It is very floriferous, easily grown, sweet scented, long stalked, and distinct in colour from any single autumnal bloomer of its family. A great acquisition.—NORMAN.



## WINTERING DAHLIAS.

ADVICE is often given about wintering Dahlias which must mislead many—such as drying the roots thoroughly, hanging them upside down, and storing them in cool sheds, all of which plans and many more I have tried during my lifetime. The Dahlia is about equally as susceptible to frost as the Potato both in top and tuber, the Dahlia being perhaps the more tender in our climate, since it is seldom that it flowers, seeds, and ripens its growth as the Potato does. Perhaps if the Dahlia ripened its tubers in the same style as the Potato we might store them in heaps or trenches just with the same success as we now do Potatoes, but since it does not then we must recognise the fact of their immaturity and proceed accordingly. The less mature a Dahlia root is the lower its vitality; consequently if much dried it shrivels, lowering its vitality still more, till gradual death and decay set in at some injured part, say at the neck or at the end of a tuber where it has been broken or bruised. Now we know that the most immature Potato tuber will live all winter in the soil, provided it is sufficiently deep to be out of the reach of frost, and we all know that those tubers left in the ground come up next summer like weeds. Dahlias are just as hardy under similar circumstances. The Potato, however, naturally buries itself in the soil; the tubers of the Dahlia, though buried, have their eyes round the base of the stem; therefore they are more liable to injury from frost, but if sufficiently covered with coal ashes, sawdust, soil, or any such material, they will live just the same as the Potato.

Now I am not going to recommend everybody to leave their Dahlias all winter in the soil where they grow, but I ask them to lift the roots with as much soil attached to them as possible, and to pack them close together in a cold pit or frame. Then cover them over with leaf-mould, working it in amongst the tubers and covering the necks with say 2 in. of the same material. After that cover the whole over with 6 in. of sawdust, Cocoa fibre, chaff, or dry bog mould. We kept several hundreds of fine roots over last winter in this way. The sides of the frame were also lined outside with sawdust, and, of course, the lights were over all. Not a single root was lost, and it will be granted that last winter was sufficiently severe; indeed, on one or two occasions I felt some uneasiness about them. About the 1st of April the whole were disinterred and planted deeply on a border sloping to the south, when in due time they made their appearance above the surface in great force sturdy and strong, from which position they were transferred about the end of May to that they were

destined to decorate. We shall again subject our whole stock, several hundreds in number, to the same treatment for the coming year.

If it be desired to increase the stock it is easy to transfer a portion of the roots to a warm house or pit in April, when in a few days an abundance of young growth suitable for cuttings will be available. I am quite sure that the drying process in the case of the Dahlia as well as in that of many other tuberous and bulbous-rooted plants should be deprecated. Nature does not dig them up and dry them heels upwards.

HIBERNIAN.



Flowering Spray of Clematis graveolens.

## BEGONIAS NOT FLOWERING.

I HOPE that few of the readers of THE GARDEN have experienced the difficulty described by "W. T." (p. 422). From his comparison of Begonias to fine foliage plants, it is probable that the plants that refused to bloom were planted in an over-rich soil. Tuberous Begonias in open beds or borders bloom most profusely in light soil on a dry bottom. Perhaps the bottom of a south wall was also rather too forcing a place for these plants. Here they have done better in the open than on a south border immediately in front of the hot-houses. "W. T." may also have planted out too soon. These plants flower more freely and much earlier if allowed to grow to a height of 6 in. or more, and even then flower before they are planted out. These tuberous Begonias will readily do this in any temperature above 40°. Our system of treat-

ment is very simple; we lift the plants at once, and pack them carefully in boxes, leaving a considerable portion of the tops intact. These Begonias are gradually dried off in early houses and pits for a few weeks, and are then stored away in the potting shed or other frost-proof place for the winter. In February or March they are placed in a Peach or other house, watered, and allowed to break freely. Remove them soon after breaking to a cool pit or house, and give them partial protection if needful to the end of May. Plant out either in the mass, or divide them at planting into as many pieces as the root stock will readily separate into. Plant a little deeper than the Be-

gonias have stood in their store or winter quarters. The partial disturbance of the roots in this mode of treatment and planting probably favours their earlier and freer flowering. Of course the plants may also be potted off separately in the spring, and kept under glass until they show flower and then planted out. Either way, the season of flowering is accelerated very much by giving the plants a good start before planting out. We find that seedlings sown in February and planted out in June may be had in flower from August till the end of October. Lifted about the end of September, these seedlings form splendid material for winter flowering in pots, as pointed out by "W. T." in reference to the late flowering plants; in fact, the facilities with which these Begonias can be lifted and potted when in flower without check or hindrance to their continuous flowering is one, and that not least, of their valuable qualities.

Permit me also to endorse all that "W. T." so well says of the extreme beauty and usefulness of these Begonias for pot culture. Fuchsias must, indeed, look to their laurels, or the Begonias will displace them from the place of popularity and usefulness they have so long enjoyed. For continuity and profusion of bloom, and brilliancy and variety of form and colour, they are nowhere compared with the finer forms of these tuberous Begonias. We have now a brilliant lot of seedlings that will carry us right through the winter, as well as a stock of bulbs that

flower early, which, if started at once, would succeed these late seedlings and thus girdle round the year with tuberous Begonias, as useful as they are brilliant, either out of doors or in.

D. T. FISH.

## CLEMATH GRAVEOLENS.

This is not only an elegant Clematis, but a most interesting species, as it is one of the very few out of the large number known that has flowers of a decided yellow colour. It is quite hardy in the south where planted against a wall, growing from 6 ft. to 8 ft. high, with long slender trailing shoots, which towards the end of summer become thickly covered with pale yellow blossoms. Its specific name would imply that the flowers are heavily scented; but such is not the



case, for they are nearly odourless. Besides being suitable for covering a wall, it is well adapted for trellis work, over which it rambles freely if planted in good garden soil in a sheltered spot. It is a native of Chinese Tartary and the snowy passes of the Western Himalayas, at an elevation of 12,000 ft., whence it was first sent to this country in 1844 by the late General Munro. The specimen from which the accompanying drawing was made came from Mrs. Davidson's garden in Dorset.

#### PINKS.

WE are now potting up and planting out our Pinks. Those for forcing are propagated by means of cuttings put in early in May. These if planted in good soil form large clumps by the end of the season. The object is not, however, to obtain large examples, unless there are plenty of roots close to the stem. In order to have this, the plants should be planted twice. They are now potted in good soil in 6-in. pots, and the plants are placed in a close frame to become established for a few days, when air is admitted freely. Probably the new varieties, Mr. Grieve and Tom Welsh, mentioned in THE GARDEN (p. 408), would come into this section. The varieties we like best are Lady Blanche, a fine white—I think the best of all white varieties; Lord Lyons, the best coloured variety; Mr. Moore and Mrs. Pettifer, whites with coloured centres. Derby Day is also a valuable sort; the common fringed white is likewise useful as a variety. We have planted a few clumps of them as a front row to the herbaceous border.

The laced Pinks ought also to be planted out in beds in good rich soil if this has not been already done. Their delicious perfume makes them favourites with everybody. See that there is no wireworm in the soil, and the leather-coated grub is a troublesome pest, eating the leaves at night. It may be necessary to secure some of the plants with small sticks to prevent their being blown over by the wind. A few plants should be wintered in frames to fill up any blanks that may be made in the beds during winter. Seedling Pinks are easily raised. The seeds should be saved from the best flowers, of course, and they ought to be gathered from flowers that have been artificially fertilised. Sow the seeds in April in frames. Prick the small plants out into boxes as soon as they are large enough, and afterwards plant them out in the open ground where they are to flower six or eight weeks later. J. DOUGLAS.

#### FROM DUBLIN.

I SEND you sprays of *Clethra alnifolia* and *Berberidopsis corallina*, gathered in the open air in the County Wicklow; also some sprays of *Berberis Darwini* flowering for the second time. They are from the garden of Mr. Thomas Acton, an enthusiast, who loves plants for their own sake, and from the way in which the plants grow they seem endeavouring to repay his attention. The garden is stocked with all kinds of varieties. Coniferous plants being perhaps best represented, and of these by far the most interesting is a splendid Cedar of Goa, uninjured by the late severe winters. Other rare plants are: *Abies religiosa*, *Cunninghamia sinensis*, *Fitzroya patagonica*, *Libocedrus chilensis*, *L. tetragona*, and *Prumnopitys elegans*, all doing splendidly, the last mentioned being quite 10 ft. high. Here *Nymphaea alba rosea* flowered for the first time in Ireland, and is now in a very flourishing condition. All through the grounds fine bushes of *Clethra* are now in blossom, scenting the air like Hawthorn, and indeed greatly resembling it. The *Berberidopsis* is growing against a wall, and covers quite 20 ft. I could have gathered fifty more sprays such as those sent and not injured the plant, so freely does it flower. *Epigaea repens* has found a home on a peat bank in a sheltered corner, and is spreading freely.

Glasnevin.

F. W. MOORE.

**Rain-proof flowers.**—In noticing these last week Pansies were omitted. "T. S." has, however, supplied that omission on p. 423. We have scarcely any flowers left in the open now but Pansies. These suffered little either from the gale or the succeeding frost, and are still going on flowering freely. They are, however, young plants sown in April. Older plants are apt to get ragged if not thinned out before now. But young plants go on flowering throughout the season, and no sooner, or almost before our crop of flowers is tarnished, another, a fresher and brighter crop, springs up. The rain tarnishes this but little. Pansies are also mildly sweet, and the odour is most pleasing; as for colour, they are of endless degrees of brightness and beauty. By the way, the Scotch Pansies shown at Manchester by Mr. Sutherland, of The Nurseries, Sauchiehall Street, Glasgow, were specially fine. They were of the varieties called German, but were the richest in colouring there seen, and also good in form and substance. It is surprising Pansies are not grown in pots for winter work. Surely they are as showy as Violets, though not quite so sweet. And now the æsthetic bouquetists have gone in for Pansies, we shall probably have winter Pansies become the rage. Some years ago I wrote an article on Pansies in pots that excited considerable notice, and I intend to pot up a lot forthwith for cutting and decorative purposes during the winter. They will go on flowering freely in a temperature of 45° to 50°. Six, or at the most eight, such pots will give fine specimens, and few pleasures are more completely satisfying than the sight and smell of Pansies in the conservatory or window garden when all the outside world is bleak and bare, or bound hard and fast in the iron fetters of frost.—D. T. FISH.

**Single Marigolds.**—There seems to be an impression abroad which I wish to dissipate that single and double Marigolds are distinct strains. Our experience of the finest strains of double Marigolds that can be got is that quite one-third of the produce always will be single flowers. It is an inevitable result. In growing Marigolds we pull out every single flowered plant. Were this not done, the strain would soon become worthless, for the single and semi-double flowers would so predominate as to spoil the excellencies of the double flowers entirely. I do not think it is possible to get up any great amount of enthusiasm for single Marigolds. Like single Balsams, Asters, Stocks, &c., they make worthless garden flowers. A plant covered with beautifully marked or even self-coloured double flowers is so far removed from one producing single flowers only that few would care to look at the latter. I am not advocating the double flowers in a mere florist's sense; I submit that as garden flowers grown solely for garden decoration they are a long way beyond all single strains, and, as individual flowers, have far more refinement and beauty. Grown in a mass here all through the autumn, they were very showy, and it was a matter for regret when some early frosts robbed them of their beauty.—A. D.

**Balsams from home-saved seed.**—Mr. Greenfield (p. 402) asks whether it is not the case that seed of home-saved Balsams produce single flowers. Does Mr. Greenfield think that only Continental seed is reliable for the production of good double flowers? If that be his impression, nothing can be wider off the mark. I have grown Balsams from home-saved seed for the past twelve years, and always get the best double quality each year. The Messrs. F. & A. Smith, of Dulwich, do the same, and with exactly the same result; so also do the Messrs. Carter, and doubtless many others. In fact, our home-grown strains of Balsams are as fine, and as varied, and constant as can be obtained anywhere. I may also point out that the market growers furnish a strong case also in favour of home-saved seed. Those of them who grow Balsams are most particular about having a good strain and the flowers fully double. Habit also is of the first importance, and these qualities they secure by saving their own seed from year to year. It is true market growers confine themselves to white, scarlet, and scarlet flaked kinds, but

that is perhaps because they think other colours will not come true or be so attractive. That, however, is a mistake. The purple, crimson, carmine, peach, and the carmine and crimson bizzarres are singularly beautiful. A notion formerly prevailed that the finest double flowers were got from seed several years old, but that idea is now pretty well exploded. The past season has been a most untoward one for Balsams in the open ground, there having been too much heat and drought at the first, and far too much rain at the last; but in spite of the drought the Balsams here out in the heat produced very fine double flowers, a point in favour of home-grown seed.—A. D.

**Schizostylis coccinea.**—This is a most desirable autumn-flowering plant of easy culture. I saw a mass of it a few days ago established at the foot of a wall facing the south, which was literally covered with spikes of lovely scarlet flowers, individually resembling the blooms of *Linum grandiflorum rubrum*. The mass covering some 30 square ft. of surface was extremely beautiful, very many flowers being fully expanded in the brilliant sunshine. The roots were planted some seven years ago in ordinary garden soil somewhat sandy, no care having since been taken of the plants. No protection is given in winter, and indeed from the vigour of the plants none seems needed.—E. D.

#### HUMBLE BEES.

AMONGST the frequenters of my garden there are none that amuse or interest more than the starlings amongst birds, and the humble bees amongst insects. I always consider starlings and swallows the happiest of our birds; nobody molests them, they are not good eating, and they seem to enjoy their life amazingly. The starling is so perky, so dapper and graceful in his movements, so very active in his search after worms or insects, that although he will persist in pulling out the plaster under the eaves and building in the roof, I can hardly wish to banish them, and now that they are congregating I have a colony that come rushing home at nightfall and make a Sycamore tree close to the house their dormitory, twittering and bustling about and making a great fuss until they settle down for the night. Equally do the humble bees delight me; there is something so thoroughly comfortable in the hum of the big fellow who comes to us in the opening spring months; he is so very aldermanic in appearance, and appears to take such a civic view of life that he is the very impersonation of insect enjoyment. If shrieks are in his neighbourhood he stands a chance of being impaled on a thorn and made a dainty morsel of, otherwise he gets off scot free, and goes about in his quiet, well-to-do way, injuring no one, and apparently quite convinced that no one will injure him.

But I have latterly been much interested in a yellow-banded species, smaller than his "big brother," but still a respectable, comfortable-looking fellow; the odd thing is, I never notice him about until September. I have a good number of *Sedum spectabile* in my garden, and as soon as ever it comes into flower—although I may not have seen a humble bee in the garden for weeks—immediately they troop in by dozens, and all day long they are feasting on it; it seems to me as if at times they had rather too much of it, for at nightfall several of them are still in a sleepy state on the heads of flowers. They are all gone by the morning; whether they have recovered their carousings, or whether they have been snapped up by some insectivorous bird, I know not. More interesting still, however, has been their method of procedure with the Marvel of Peru, of which I have a large bed under my window, and the other morning I saw a number of them feasting on it. It will be remembered the flowers have a long and very narrow tube, expanding at the top, but so formed that it would be impossible for a bee to get at them; some of our moths with their long probosces could do so, but not the bees. They were not, however, to be thwarted, and I noticed that they fastened on the long tube, clasping it firmly



with their legs, head downward, towards the calyx, and then they deliberately tapped the nectary making a small hole, and thus extracting the honey. They took about a minute to finish their work, and then went off to another flower. It is somewhat strange that, although both the *Sedum* and *Marvel* of Peru are so enticing to the humble bee, I rarely see the honey bee upon them. I should be glad for the sake of my own hives if they did so, but they do not seem to care for them.

DELTA.

## ORCHIDS.

### IMPORTATIONS OF ORCHIDS.

A MORE striking proof, if proof were wanted, of the increasing popularity of Orchids, and especially the cool house kinds, could not be found than the vast quantities that are yearly imported to this country from their native habitats at great expense and much risk. Not only has the number of private growers increased, but likewise nurseries, some of which are solely devoted to the importation of Orchids and a similar class of plants. Of these one of the most noteworthy is that established by Messrs. Shuttleworth and Carder, both of whom have spent a number of years in collecting plants and especially Orchids, from the mountainous regions of Central America. This nursery, situated in Park Road, Clapham, is a stronghold in itself as regards Orchid importation, for here may be seen probably the largest collection of recently imported and semi-established Orchids, particularly of *Odontoglossum crispum*, that could be found in the country. One spacious span-roofed house is entirely devoted to them, the plants occupying two or three tiers of stages. Such a collection of imported plants necessarily yields continually some remarkable varieties. Of *O. crispum* there are some superb forms, the majority being of the broad sepaled type; and not only in form of flower do some of these excel, but likewise in colour. Soon we may expect to see a pure white variety, with branching flower and spikes, and in others the marking is excellent. A large number of these branching spiked forms are represented in this collection which will render them less rare than they have hitherto been. Though the bulk of the imported Orchids here consists of *O. crispum*, there is a good representative collection of others, and among them large quantities of *O. Pescatorei*, *O. triumphans*, *O. gloriosum*, and the charming little *O. Phalænopsis*, a species that has hitherto been somewhat scarce, but, judging by the numbers here, such will not long be the case. Of *O. vexillarium* there is a fine stock, which will be a welcome sight in flower later on.

**Cattleyas** are another speciality. Of that magnificent species, *C. aurea*, we were pleased to see a considerable quantity of semi-established plants that bid fair to soon make good specimens. It was thought that the plants in this country of this *Cattleya* were very few indeed, but that fortunately is not the case. In growth this species more resembles *C. gigas* than *C. Dowiana*, which it somewhat resembles in flower, and, being of a more robust constitution, it will doubtless prove more manageable than *C. Dowiana*. Of *C. Trianae* there is a very fine collection, the majority consisting of the *Ibague* varieties, which are considered to be the best; among them may be found such beautiful forms as *Atalanta* and others. *C. Mossiae* is also plentiful, and consists of varieties collected in localities in which the best sorts are to be found. Among the importations of *C. gigas* there are plants of a beautiful pink-flowered variety, and a pure white kind is also said to be among them, which, if correct, will greatly enrich our Orchid houses.

**Masdevallias** constitute another of the principal classes of Orchids to which special attention

is directed. The collection includes not only the common species, but also such varieties as *M. Backhousiana*, *Macrura*, *Chimaera*, and *Shuttleworthii*. As an illustration of the risks attending Orchid importation, it may be mentioned that out of 4000 plants of *Masdevallia Shuttleworthii* consigned to this nursery by Mr. Carder, only eight were saved, and these required a good deal of time to recruit them. On another occasion 2500 plants in eight cases were received, but only one plant was found to be alive out of such a large number. Of other Orchids either freshly imported or established are *Warscewiczella marginata*, a scarce yet pretty Orchid, with large blossoms, deliciously perfumed like Violets or Lily of the Valley; *Oncidium Weltoni*, the true species in which the flowers are brighter and more distinctly marked than in *O. fuscum*. Of the pretty little *Compactia rosea* and *falcata* we were pleased to find a quantity, for they are both very beautiful and enhance the interest of even the choicest collections when in flower. *Lelia Dayana* and *marginata* are in flower, the latter a lovely species,

gated by division when the plants are large enough and in good health.

**M. candida**, introduced just fifty years ago, is a free growing and distinct species. The sepals and petals are yellow and brown, the lip white marked with pink. Its flowers will look in good condition a month, but the white changes to a yellow shade before they die off; indeed, there is a variety named *M. candida flavesens* in which this characteristic seems to be more fully developed than in the species itself. The variety of which the accompanying woodcut is a representation is much the best and is named *grandiflora*. *M. Clowesi*, which has also been named *Odontoglossum Clowesi*, like *candida*, is an autumn flowering species. Its sepals and petals are yellow and brown, and the lip purple. There is also a major form of this, and a variety named *pallida*. *M. cuneata* is an early spring flowering species; its sepals and petals are reddish brown tipped and barred with yellow, and the lip whiter; as a rule this will continue in beauty for a month at least.

**M. Moreliana**.—This has creeping stems 1 in. or more in length, and when the plants are potted, these must not be covered with the compost, but pegged down on it; another characteristic of it is the yellowish sickly colour of the leaves, from which the inexperienced would infer that it was in bad health, but the colour in question is natural to it. It is one of the most beautiful of all the *Miltonias*, and flowers late in the year. The blossoms are very large and distinct, sepals and petals rich reddish purple, lip veined with rose or purple.

**M. spectabilis**.—This is a dwarf-growing species, and one of the best; it usually flowers in August, but I saw some very beautiful forms of it growing and flowering freely in a cool house in October. The sepals and petals are pinkish-white, and the large open lip is pale purple. The flowers are produced singly on slender stems.

**M. Warscewiczii** is a really handsome and distinct species, grown in gardens under the name of *Odontoglossum Weltoni*. It throws up strong spikes frequently, branched and furnished with numerous flowers very distinct from those of any other of the genus. The sepals and petals are narrow, with recurved edge. The lip is broad, pale purple, and white. This does well in the cool house with *Odontoglossums*; it is a native of Peru. J. DOUGLAS.



*Miltonia candida grandiflora.*

having a distinct frilled white margin to the lip; and that beautiful plant, *Utricularia montana*, so often taken for an Orchid, was flowering here, the elegant and chaste blossoms being as pretty as those of any Orchid. W. G.

### MILTONIAS.

THE genus *Miltonia* includes some very interesting and beautiful species, nearly all of which are natives of Brazil, and require very much the same treatment as *Cattleyas*. When the plants are of moderate size, the pots should be filled two-thirds of their depth with clean, broken potsherds, and over this some dried, clean Sphagnum Moss should be put. The compost should consist of good fibrous peat, torn up and the dust sifted out of it; add to this an equal portion of Sphagnum and a liberal proportion of broken charcoal and potsherds. Nearly all the species will grow freely in this compost, and remain in good condition for many years. Under this treatment I have grown plants for sixteen years, and they have increased freely in size and numbers, and still continue in good health. In habit some of the species differ somewhat from others, but all of them may be propa-

**Anemone japonica alba under glass**.—About this time last year many favourable notices of this fine autumn-flowering plant appeared in THE GARDEN, and it is to be hoped these may have induced many to plant it, as no more pretty or useful flower could be found in our gardens in October. In some places I see it is only being introduced, and is as yet small, but in other gardens, such as at Tredegar Park and Brynglas, in Monmouthshire, great masses of it may be seen, and in this form it is a noble looking subject in the herbaceous border, but I fear not many outdoor plants of it will present a good appearance at the present time. The late great storm of wind, which made such havoc with every growing thing, destroyed every out-door flower we had, and our lovely Anemones went too, but we are not deprived of them altogether, as a patch planted out in a bed in a cool house is still a mass of delicate white flowers. Had it not been for this we would have had no Anemones to embellish our flower glasses with, and substitutes so pleasing could not easily have been found. No herbaceous plant does better in a cool house than this, and it comes to much greater perfection under cover than in the open border. Under glass it does well with the treatment usually given to Camellias, and wherever these thrive it should be introduced.—J. MUIR, *Margam Park*.



## GARDEN DESIGN.

## LAYING OUT A GARDEN FOR HARDY PLANTS AND ALPINES.

IN laying out a small garden of say not exceeding more than half an acre, one must have in view the object for which it is to be used and the tastes of the owner. If it is simply desired to have a pleasant view from the windows and an agreeable promenade, the ground must be laid out with a lawn, as expansive as the space will admit, with grassy slopes embellished by clumps of Rhododendrons, flowering shrubs, and specimen Conifers, a few well-kept flower beds in the foreground in conspicuous places, and the whole backed up by masses of tall shrubs, Conifers, and trees, so as to hide the boundary fences. The paths must be arranged so as to show as little as possible, but above all there must be plenty of Grass, and to look well it must be well kept. Such a garden was my first experience, and for the majority of householders who are not florists nothing can be better, but when, as in my own case, one is a devoted lover of hardy flowers, and grows Pansies, Phloxes, Asters, Carnations, Pinks and Picotees, Wallflowers, Stocks and Daisies, Violas, Dianthus, Sweet Williams, Larkspurs, Rockets, Pyrethrums, Antirrhinums, Auriculas, Polyanthus, Primroses, Violets, and Roses by the hundred, and alpine flowers by the thousand, such a garden offers three objections. Firstly, the gardener is too busy from early in spring till late in autumn to do very much more than eternally mow, roll, and clip the Grass and weed the paths, and the flower beds get sadly neglected, for hardy plants need more care in propagating, watering, and tying up during the summer time than do bedding plants. Secondly, collections of plants spoil the effect of a garden on the picturesque landscape style. Thirdly, the beds are, as a rule, divided from the paths by a broad strip of Grass, which prevents a lover of flowers from properly examining his pets.

During the past year or two I have examined gardens in many parts of the world with the view of designing some novel plan of laying out small villa gardens, which, while providing beds most suitable for growing hardy plants and alpine, shall nevertheless present an agreeable aspect at all times of the year, and be furnished with pleasant walks, from which the flowers may be easily examined and their beauties appreciated, and I flatter myself I have succeeded. The front of my house consists of an irregular piece of ground averaging about 55 yds. by 35 yds.; this is surrounded by a belt of flowering and ornamental foliaged trees with evergreens and specimen Conifers, and a foreground of Rhododendrons and low shrubs. In front of this a flower border 6 ft. wide runs in meandering lines, margined everywhere by burrs. The paths are 6 ft. wide, and the carriage drive 12 ft., and no Grass anywhere.

These flower borders are planted in the following manner: In the front are large irregular clumps of dwarf evergreen alpine, overhanging and partly hiding the burrs. Small plants like *Arabis*, *Sedum acre*, *Phlox frondosa*, mossy *Saxifrages*, *London Pride*, *Thrift*, *Thyme*, *Cerastium*, *Violas*, *Aubrietia*, *Harebells*, *Dianthus deltoides*, *Saponaria*, *Candytuft*, and many other such alpine, of which a stock is soon got up, never show to advantage unless in a mass 2 ft. across. Such an edging, with its varied tints of green, looks well even in the depth of winter, and in spring and early summer some of the masses of bloom are simply gorgeous. Behind these are planted clumps and specimens of hardy perennials, biennials, annuals, and bulbs. On the gravel are groups of beds of various sizes and shapes, but principally circular, all surrounded by burrs, and edged with a row of some evergreen alpine, the centres containing collections of Pansies, Carnations, Polyanthus, Tulips, &c. Nothing can be more enjoyable to a true lover of flowers than a stroll in such a garden and with no lawn to mow or Box to trim, or paths to weed, for these can be kept clean by periodical salting without fear of killing anything; the whole is

managed with much less labour than the tens of thousands of plants therein would seem to suggest.

At the back of the house is an irregularly shaped lawn for tennis, easily kept in order, as there are no beds or trees on it, and the whole is surrounded by shrubbery and borders, as in the front of the house, and between these and the lawn is a meandering path. At the end of the lawn is a rockery with paths going up and down and round its miniature hills, and behind this and hidden by it is the kitchen garden.

Glengall, Woodford.

F. C. B.

## THE GARDEN FLORA.

## PLATE CCCIX.—DIPLADENIA PROFUSA.

DIPLADENIAS still hold the first position amongst twining stove plants. Originally there were only some three or four species, but by hybridising their numbers have been considerably increased, and also their variety, the seedlings resulting from crossing the different species furnishing much diversity in the way of colour. As decorative subjects the beauty of their flowers, the freedom when well managed with which they are produced, and the unusual length of time during which they keep on yielding a succession, constitute a combination of merit such as few other plants possess. They are equally adapted for being grown as trained specimens and for clothing the rafters of a stove, but, like all other climbing subjects, the latter position is the way in which they are seen to the best advantage and in which they flower best.

*D. profusa*, here illustrated, is a seedling variety distributed by Mr. B. S. Williams, of the Victoria Nursery, Holloway. Its colour is rich carmine, and it is a remarkably free bloomer; when well grown the flowers are large, measuring as much as 5 in. in diameter. It is also said to have a better constitution than that of most others of the family, the roots of which are somewhat susceptible of injury from the slightest excess of moisture. The absence of a due appreciation of this has much to do with the failure of not a few who have attempted their cultivation.

**Culture.**—Dipladenias can be propagated easily by cuttings at any time of the year when these can be had in suitable condition; either young shoots of about 6 in. or 8 in. in length taken off from the old wood with a heel, or single joints of the mature wood will root, if the latter during the autumn are put in pots filled with sand in the usual way and kept in a brisk heat, they will soon form roots and push up shoots. When these are about 6 in. in length they may be potted singly. Much of the success in the cultivation of Dipladenias depends on the soil being of the right description, for although they may occasionally be seen doing fairly well in peat, or even in loam of a close, heavy character, still such soil so often causes their destruction, that their growth should never be attempted in it. What they like is the turfy matter from the best fibrous peat, only a little closer in texture than that which is approved of for Orchids, and this will be still further improved by shaking a portion of the earthy matter from it, adding a liberal admixture of sharp clean sand. The rooted cuttings should be put in 3-in. or 4-in. pots, placing them where they can have a temperature of 65° in the night until there is more solar heat. The advantage of striking the cuttings in the autumn is that they get rooted and have a good start before spring, thus having the whole summer wherein to make growth. Though Dipladenias will succeed with moderate stove warmth, they do all the better if they can have as much

heat as any plants will bear, say 65° to 70° in the night during winter, with a proportionate rise in spring and summer. Under such conditions their season of flowering is much lengthened, as so treated they will bloom from the beginning of May to the end of October, or even later.

Let the young stock have plenty of warmth in spring and summer, training the shoots to strings or wires near the glass, and giving more pot room as required. In autumn reduce the temperature and let the soil get all but quite dry, so as to check growth; shorten the shoots back a little before they begin to grow, and move them into 12-in. or 13-in. pots, keeping them, as already suggested, much drier at the roots, even when in active growth, than the generality of other plants would bear. They will bloom well the second summer, and will last and keep on improving for a number of years by cutting them well back annually and replacing the old soil each season.

A matter of importance in the cultivation of Dipladenias is that their fleshy, tuberous roots should not be covered too deeply with soil. I have generally seen that those do best which have the collar of the plant and some portion of the tubers so near the surface as to be seen plainly; this holds good whether they are planted out or in pots. Speaking of their being planted out, this is a course that is sometimes adopted, but by which there is little or nothing gained to set against the disadvantages, the worst of which is that the soil cannot be renewed annually in the way that it can under pot culture, and I may here remark that much less pot room is necessary with Dipladenias than most stove climbers. A 15-in. or 16-in. pot is big enough for the largest specimen I ever saw, and the advantages secured under pot culture, with the chance it gives of removing the plants when they require to be cleaned from insects, such as after cutting back in the autumn or winter, are a consideration worth taking into account.

**Species and Varieties.**—In addition to the variety represented in the annexed illustration, the following are all handsome sorts:—

*D. splendens*.—A species with broad, bold foliage and stout shoots. The flowers are white, suffused with pink, very beautiful, and borne on spikes that keep on extending for months. It comes from the Organ Mountains.

*D. crassinoda*.—A much weaker grower, with bright green shining leaves, and rose coloured flowers of a most lovely shade. A native of Rio de Janeiro. From the above two species have sprung most of the fine varieties now in cultivation.

*D. boliviensis*.—A small growing species, with almost white flowers, which are produced with extreme freedom. Very useful for cutting, the flowers not being too large for bouquets or similar arrangements.

*D. Williamsi*.—A decided improvement on *D. splendens*, from which it was raised, being a freer bloomer; the individual flowers have a deep pink throat.

*D. amabilis*.—A fine variety with a free blooming habit and a good constitution. The flowers are deep rose-purple when fully matured, paler whilst young. Foliage, ample and handsome.

*D. Brearleyana*.—A fine sort, the flowers deepest in colour of all the varieties; when fully grown they are of the darkest crimson shade. To get the full amount of colour in them the blooms of this variety must be shaded from the sun.

*D. insignis*.—A stout growing plant with bold rosy purple flowers. The foliage is very strong, and altogether it is a handsome kind.

*D. hybrida*.—A beautiful sort, yet very little known; a strong habited plant with large stout foliage of a bright green colour. The flowers are produced in abundance, their colour being a flaming crimson-red, so bright when the plant is in vigorous health that there are very few flowers which will bear comparison with it.

*D. amena*.—A free-blooming variety, with pale flesh-coloured flowers, which are borne in medium-sized bunches.





DIPLADENIA PROFUSA. (HORT.)







**D. Houtteana.**—A distinct pale-coloured kind, with medium-sized flowers, produced freely.

**D. magnifica.**—Somewhat like *D. crassinoda*, but the flowers sometimes come handsomely marbled with white.

**D. regina.**—A medium grower, with blush-coloured flowers when first opened, becoming paler as they get older, deeper coloured in the throat. A free bloomer.

T. BAINES.

## TREES AND SHRUBS.

### THE EASTERN THORN.

(*CRATEGUS ORIENTALIS*.)

THIS is one of the most ornamental of all the Thorns when in fruit, and on that account deserves a place in every collection. The Haws are numerous and of large size, yellowish crimson, and moreover very agreeably tasted. This species is allied to *C. tanacetifolia*, which it



*Crataegus orientalis*.

closely resembles in foliage, but it has a more spreading habit and much finer fruit. It was introduced from the Levant about seventy years ago, though, from not finding it mentioned in several good catalogues which I have consulted, I suppose it is rare. The accompanying illustration is from a tree growing in the Cambridge Botanic Garden.

R. I. L.

**Cassinia fulvida.**—What Mr. Gumbleton calls *Cassinia fulvida* came to me as *Diplopappus chrysophyllus*. Whatever its correct name may be, it is a beautiful shrub and very suitable for rock-work, where it ought to be planted in a snug corner and against a dark coloured stone or evergreen, which will show off to advantage its beautiful golden foliage. Its flowers, which are long in developing and very lasting, are arranged in an irregularly branched panicle, but are not conspicuously beautiful. The entire shrub is golden, although some of the lower leaves are quite green. With me it flowers at a height of 15 in.—E. J.

## GARDENING IN AUSTRO-HUNGARY.

IN this beautiful and fertile land there is much of interest to the horticulturist and landscape gardener. Some of the practices and many of the plants known to the gardeners of fifty years ago and more are to be found there, the Austrians being rather conservative in garden matters, especially preferring those plants that stand their generally rigorous climate, and, as regards their more tender plants, such as are capable of bearing a six months' confinement in houses constructed usually after very antiquated models. Such structures do not give more than twilight, except just in the parts facing the windows, as they are made with opaque roofs and ceiled, and have almost perpendicular sashes facing the south, or some point to the south. Such structures differ from ours, inasmuch as there is rarely any staging for pot plants—at least not occupying the middle space of the house. The paths, in fact the whole floor of the house, is usually of earth, gravel, or coarse sand, allowing of many pleasing arrangements of the inmates. Winding paths are made through the groups of plants, beds of flowering winter subjects being dotted about, their pots being hidden in nice green Moss or else sunk in sand having a covering of earth which is planted with *Lycopodiums*. This applies to both warm and cool houses.

**Nurserymen** are now settling more numerous in the country than formerly, some being subsidised by the Government; and the trade, which hitherto has been in the hands of the houses at Erfurt, Dresden, Leipzig, and other German towns will gradually acquire a national character. Most of the larger landed proprietors and nobility have home nurseries in which they cultivate fruit trees, shrubs, forest and ornamental deciduous and coniferous trees. Some of these collections contain all that is old or new that is worth growing in Europe, and many things rarely met with in trade establishments are to be found in them. Fruit trees are largely grown for planting at roadsides, and as avenues across their hedgeless, borderless expanses of arable and pasture land. By the roadsides these trees serve as guides to the benighted wayfarer, or prevent the traveller during the terrific snowstorms common there from wandering off the highway into the trackless fields. The sorts are chiefly Plums (such as the Swetchke (*Prunus domestica*), a black Prune-shaped sort, good either raw or dried; many kinds of Cherries, also good raw or dried; dessert and cooking Apples, especially a kind called *Maschanzker*, Walnuts, some few sorts of Pears, mostly of French origin, and in the more southerly provinces Apricots; in fact, all through that zone where the Vine succeeds, this last, together with the Peach and Sweet Almond, is planted here and there in the vineyards, and all in good seasons bear enormously; but the Peaches will not bear comparison with ordinary fruit from a wall in England. Bohemia and the Tyrol are the fruit growing provinces *par excellence*, much fruit being grown in them, both for home and foreign consumption. In the more southerly parts of the country Figs are largely grown, and find ready sale in a fresh state. Melons, both water and sweet, or as they are called Sugar Melons, are grown as a field crop—generally as an intermediate crop with Maize. They attain a large size, but are not particularly good as to flavour; still they are largely consumed, being usually partaken with grated sugar alone or with red wine. Varieties of Turkestan, Cabul, and Cantaloupe form the staple. English kinds are much relished, but being too delicate for out-door culture are grown only in private gardens in frames. Owing to the absence of fresh vegetables in all the country north of Tyrol at the

end of the winter, the spring forcing of such vegetables as Lettuces, Savoys, Carrots, Radishes, Cauliflowers, Kohl Rabi, Potatoes, Cabbages, Cucumbers forms an important industry, and is likewise adopted in all private places.

In flower gardens and pleasure grounds—the “pleasance” in older English—the arrangements and design of the walks, shrubberies, and lawns differ widely from the English, although all designs not formal in character go under the usual denomination, English park or English garden, in contradistinction to all others. The English mixed shrubbery is not common, and the herbaceous border still less so; in fact, there is a great dearth of herbaceous plants. The undergrowth usually consists of some ordinary shrubs, viz., *Philadelphus*, *Symphoricarpos*, *Syringa*, *Berberis*, or sorts of *Euonymus* or *Cornus*. These form the massing materials, and are usually planted very close to the paths, and of necessity must be kept clipped once or twice a year. Grouped and dotted about the lawns are the better class of shrubs and trees. This is an arrangement which is very effective in the spring and early summer; when there is such a wealth of floral beauty in tree and shrub, it almost compensates one for the absence of the *Rhododendron*, *Kalmia*, &c. Owing to the great summer heat, the wood is so thoroughly ripened that the plants never fail to bloom abundantly. Summer and winter pruning of the shrubs, as each one's habit requires, is generally well understood and practised by the Austrian gardeners.

The use of standard forms in the garden is much liked, also the tall slender columnar, in preference to the cushion form so much in vogue with us. Certainly the effects arrived at please more than the latter, the upward-growing, aspiring growth being more full of contrasts than the flat of the earth. So you will find the *Heliotrope*, *Pelargonium*, *Plumbago capensis*, *Roses*, *Pyrus*, *Syringa*, *Hibiscus*, *Pomegranate*, and *Nerium* much employed as standards; sometimes the Gooseberry grafted on *Ribes aureum* and other kinds.

**Spiræas**, because of their general hardiness, are much used, either as edgings to commoner shrub groups, or alone on the Grass. *Aristolochia Siphon* and *Ampelopsis* of sorts, as well as species of *Clematis* (not hybrids), are used as hanging garlands, or as bordering to turf plots or groups of shrubs. Ornamental deciduous trees and shrubs are much more employed than in the generality of our gardens. The climate, except in the country south of the Tyrol, in Slavonia, Southern Hungary, and the Banat, is too cold for the Bay tree, Laurel, *Rhododendron*, and American plants so-called, to be grown out-of-doors without protection in the winter. The consequence is that we find these as inmates of their glasshouses together with *Aucuba*, *Euonymus*, *Holly* (although this last is hardy enough, but must be planted in the shade, for the sunshine is fatal to it in the summer time), and various other evergreen shrubs and Conifers capable of withstanding our English winters. *Roses* must be covered up securely in November. Rock gardens for alpine plants or Ferns are all but unknown; for, doubtless owing to the scorching heat of the plains in July and August, these would not succeed, and therefore, except in mountainous localities, cannot form a part of garden embellishment. This holds good also with Heaths in pots—they grow well in the pure cold mountain air, but die off suddenly in the lowlands. New Holland plants are much grown, but their cultivation is not carried on rationally, the plants being grown merely to form groups in the houses in winter and to fulfil the same offices out of doors in the summer time.



Sweet-scented Himalayan Rhododendrons, Azaleas (not much trained), Myrtles, Palms, Eugenia, Melaleuca, Metrosideros, Camellias, and other plants with a hard leaf surface are much used for room decoration; Philodendrons enter largely into such arrangements during summer. The trade in plants for windows and rooms must be a lucrative one, as the Austrians, especially the middle class, who almost without exception have no country houses, and perforce must live in the towns and villages, buy largely, and the trade done in floral decorations must be very great, such as wreaths, tiaras, bouquets for all possible occasions, grave decoration on All Souls' Days, for weddings, and for religious festivals; and as every day in the calendar has its saint, and as most people are named after some saint, male or female, the demand for such articles is unending. The market value of plants, and general nursery and florists' stock, is much lower than with us for similar articles. The prevailing cheapness of labour, and the commoner employment of girls and women for much of the lighter kinds of work, may account for this. The rent demanded would not exceed, even near a large town, 30 florins per acre, and this for trade purposes. The private establishments in the country do not depend for their stocks much on the trade—very much less indeed than is the fashion with us. In most of these gardens Roses, Camellias, Epacris, Oranges, and hard-wooded greenhouse and stove plants are propagated in quantities yearly, the gardener having generally the privilege to sell. This is a great boon for the country people who have no florist or nurseryman nearer than fifty miles. A propagating house is therefore a necessity, and not the makeshift affair usually seen here in England.

Bedding out is not commonly practised as yet, though, unfortunately, that and carpet bedding are getting to be more the fashion; but the propagation and the storing of the materials for these styles will prove to be a far too costly business, so that I apprehend an early decline of these two methods of flower gardening.

Much of the decoration in the flower gardens is carried out with annuals and biennials, Balsams, Asters, Coreopsis, Iberis, Wallflowers, Stocks, Celosias, Ricinus, Malcolmas, Cockscorns, Pansies, especially the large-flowered section, Verbenas, Marvel of Peru, Scabious, Phlox Drummondii, and others being used for the purpose.

Roses are very much grown and admired, although owing to the heat in the generality of years the season does not last more than three weeks, and Hybrid Perpetuals, or Remontants as they are called, do not bloom much in the autumn, not nearly so well as Teas and Bourbon. The best of English and French sorts are commonly to be met with. Roses are also much grown as standards for early indoor work.

The groups of flowering plants and others in pots and tubs to be found about the gardens in the immediate neighbourhood of the mansion are often very pretty. These sometimes flank a doorway, or fill up the space between the windows, or are formed into groups on the gravel or turf; and as they are merely sunk in the earth or a bed of clean sand, the arrangements are easily altered, and, with variety in the materials used, are greatly more satisfying than the carpet or other bedding absurdities we should find in similar positions here. The plants used are frequently the following: Annuals, biennials, sweet-scented Cape Pelargoniums, Petunias, Myrtles, Oranges, Lemons, Punica Legrelli (a dwarf sort), Lagerstroemia, Callistemon, Acacias, Roses, Ferns, ornamental Grasses, Pittosporum, Tecoma, Ficus, Neriums, Dracenas of the older green type, Azalea indica, retarded Camellias, show and fancy Pelargoniums, Orchids, and Be-

gonias, also double and single Pelargoniums, Pinks, Carnations, Asters, Phloxes, Mignonette, Musk, Polyanthus, Anemone japonica, and creepers, such as Thunbergias, Maurandya, Lophospermum, Ipomæas, and others.

The following groups I have either had myself, or seen elsewhere, as exemplifying the prevailing taste in the best places.

Hybiscus syriacus, with Petunias and Lantanas planted between.

Cakadium esculentum and Panicum sulcatum.

Gastonia of sorts, with a surrounding of scarlet Pelargoniums.

Magnolia grandiflora, with a bordering of Ficus elastica.

Begonia Rex, standing on a carpet of Selaginella dentata.

A bed of Abutilon Thompsoni, intermixed with Begonia discolor.

A group of Celus Deodara, with Aloc americana sunk between them.

A group of Auuba, surrounded with a band of three lines of Pillar-of-Gold Fuchsia.

A large group of Ricinus africanus, with Solanum robustum; tall Lantanas; Gladioli, carpeted with Verbena Defiance.

Fuchsias and Pentstemons.

Tagetes pumila and brown Wallflowers.

Dwarf green-leaved Cannas on Verbena Melindres.

Bocconia jeddensis, with Farfugium grande and Aralia papyrifera.

Dwarf Dahlia, Ricinus Gibsoni, edged with Panicum sulcatum.

Lobelia cardinalis, Lilium roseum, Gladioli.

Lobelia cardinalis and Delphiniums of kinds.

Scarlet Poppies with white tall Phlox, and Nierembergia underneath.

A bed of Anemone japonica Honore Jobert, with large-flowered Pansies, purple, blue, and yellow.

Autumn-flowering Phloxes, with the ground covered beneath with dwarf Tropæolum aduncum.

Quantities of greenhouse Ferns, grouped under big trees; also Azaleas during their flowering period.

Bed of Erythrina and Pansy.

A group of Gunnera scabra and Aralia spinosa.

Acanthus mollis and Ice plant.

A villa garden near Vienna, belonging to a noble family, was a charming picture a few years ago, and may be so now. It stood on the slope of the mountain, rather more than halfway up it, and commanded a beautiful view of the city and surrounding landscape, and it is situated beyond the reach of the little smoke which is generated by the chimneys of the capital.

I found Heliotropes, both of the new and old sorts, grown as standards of 4 ft. or more, blooming profusely. These old stocks are more floriferous than the succulent young ones. Pelargoniums, double and single flowered, also as standards, their stems clothed with delicate creepers; these were grouped on the Grass, and there was a little circle of soil around each that was unfurled. Cassia corymbosa was grown as bushes, and stood grouped, as the above were, on the Grass. Fuchsias, of the best kinds, well grown and sunk with their pots in the lawn, were very striking; the height of them may have been from 5 ft. to 7 ft. All these things, with their background of shrubs some few yards away, could not be beaten for beauty. Here I saw Leucophyton Browni made use of as a hanging garland. It was planted in suspended grey terra-cotta urns that hung from the centre of a series of delicate arches of grey-painted wire work, and was trained right and left from urn to support. The rest of the wire work of this arcade was covered with Clematises of various colours.

The flower garden beds were numerous for the small space at command, and none held

more than 100 to 250 plants each. But the feature worthy of note was, that the surrounding edging of Box was 1 ft. in height.

There was no pegging down required; and as the observer could not look through the beds from the sides, much labour was saved in cleaning the beds, the decaying leaves falling to the surface of the soil and forming a natural mulch; and much less watering was required than under the usual mode of planting. The beds were full to the brim, and the shadows from the tall walls of Box formed an admirable shading to the picture. I may say the intervening space was Grass.

Cuphea platycentra grows into a fine bush in the pure air of these hills. They are often many years old, being carefully tended always, and getting the necessary protection in the winter. It is called the Cigarrenflanze, from its bright red tubular flowers having some resemblance to the tip of a lighted cigar.

A tropical garden I saw at Graf Harrach's, at Bruck, on the Leitha. This once fine place is much neglected now, although there are still some fine features to be discovered in it—an irregular parallelogram, with an oblong irregular pool amid surrounding weird-looking Firs and Spruces. The water is deep and still, and lighted up here and there by an occasional ray of sunlight. It is intensely warm outside this little nook, of about half an English acre, but inside how gratefully cool! The banks are fretted away by the action of the water into little bays and promontories, and there had been fortunately no attempt at rocky or precipitous margin, or accurately defined slope, and the water laves the path that follows its general outline. A narrow channel leads away into the river Leitha, which close by drives the ancient mill of the proprietor. This mill is attached to the castle, and looks old enough to have ground the meal for the garrison which defended the town against the Moslem about the end of the seventeenth century.

Around the lake, grouped in amongst the Firs or in front of them, are tall Dracæna australis, Aletris fragrans, Musas of various kinds, Phoenix of sorts, and Pandanus utilis, with its graceful foliage; intermixed are healthy tall specimens of Ficus elastica, F. australis, and F. caucasica, while Astelia Banksii droops its graceful grass-like foliage over the margin of the pool. Various Azaleas and Gastonias, with splendid foliage, a few old gnarled Eucalypti, and large-flowering and other Begonias are placed at prominent points. Tradescantia zebrina creeps about anywhere in the unknown Grass, which is full of many kinds of wild flowers. No architectural object marred the studied wildness of the scene, and stepping stones crossed the tail of the lake instead of a bridge. There is no artificial bordering to the groups of tall Palms, no attempt at "gradation," whatever that may mean. The tubs or pots are sunk into the earth, and Grass hides them from view.

I liked it much, but thought of the capabilities of the spot with the help of finer specimens and more variety; although any attempt to make it trim-looking, as we are used to see English tropical gardens, would be an unpardonable innovation. I believe the only patch of colour was a group of untrained Azaleas, red and white. They had been much retarded, for it was late in June.

I suppose this kind of gardening can never be taught, or learned in books, or in schools of gardening. It requires the same qualities that go to make the poet or the painter, the power of idealising and arranging. Added to this must be a knowledge of what are now rather uncommon plants—things the older cultivators knew well as house subjects, though ignorant of their usefulness out-of-doors.—Field.



## THE ROSE GARDEN.

### ROSES IN POTS.

IN addition to the important points already adverted to, there are many others of scarcely secondary importance, such as the relative merits of pot and open-air culture from the first, best time to pot up Roses from the open ground, mode of lifting and potting, proper compost, the best form of Roses for pots, when to shift pot Roses and to what extent, general treatment during growth and flowering, after treatment, resting, pruning, training, selection of varieties, &c. As to the early growth of pot Roses, not a few prefer them grown in pots from the first. So grown, the plants are not subjected to any check, and perhaps their roots are more regular in size and more fibrous—both points of vital importance to the future health and floriferousness of Roses. Some also think that the plants may be grown to flowering size in less time in than out of pots. This may be so with glass and heat at command, though it not seldom happens with Roses, as with many other plants, the more haste the less speed. There are, of course, some obvious advantages in the growing of Tea Roses in pots from the first, as the plants can be protected against cold rains, hail storms, snows, and frosts, that tend to check their growth. It is astonishing how quickly Tea Roses may be grown from cuttings or scions into flowering plants with the protection of a glass frame only. Strong cuttings rooted in February may be grown into nice bushy plants in 8-in. pots ready to flower in October. The same cuttings planted out in rich soil in sheltered places may be grown as large or larger in the time, but these have to run the risk incident to transplantation, which may probably check them considerably. As a rule it will very generally be found that Tea Roses are grown in pots from the first, and that most other sorts are lifted and potted after attaining to considerable size in the open. Either plan may prove best according to circumstances. Those grown in pots should never be allowed to become severely pot-bound, nor to suffer any severe check in their early stages; and those lifted from the open ground should have their roots re-established before any attempts are made to promote the growth of their tops.

**Potting up outdoor Roses.**—This may be done at midsummer, autumn, and winter. Different Roses have their different seasons of growth. Teas and Chinas grow all the year till arrested by frost; Provence and Moss Roses make one growth a year; while many of the Perpetuals, Bourbons and Noisettes make two or more growths in the season. It follows from these facts that while the late autumn, winter, or early spring would prove the very best time to pot the first two classes, the Perpetuals and others might probably be potted up as successfully in July as October. Early potting has many advantages over late potting, the most potent being the complete re-establishment of the roots in the pots before winter. But of course in all pottings with the foliage more or less green some special means must be used to keep it in that condition until the fresh growth of the roots takes that vitally important business off our hands. A close house, pit, or frame, partially shaded, and syringing are the simplest, most readily available, and efficient means for preserving the verdure of the leaves intact and their functions unimpaired. This done, it matters little when the Roses are potted up, for in a comparatively brief period roots, leaves, and branches will all be again performing their normal functions as if the Roses had not been transferred from the open ground into pots. Early potting, with its consequent re-establishment of the roots before winter sets in, is almost equivalent to a whole season's growth in pots. The best seasons to pot up perpetual Roses are doubtless July and October. The latter season gives the least trouble, but with proper attention the former is the best time for lifting and potting. Amateurs especially often make huge mistakes in regard to this matter; their main object is to cause as little disturbance

or interruption to growth as possible. Hence they often attempt to lift Roses and other plants with balls and whip the balls into the pots. It is seldom this can be done successfully, for the Rose is not naturally a fibrous rooting or earth-holding plant. The result of such attempts, therefore, mostly is that just as the ball is about to be placed in the pot away it goes, carrying with it all the best roots and leaving the Rose with roots something like the knob end of a walking-stick. Even should the ball be transferred to the pots intact the practice is to be condemned. The earth, sometimes of very indifferent quality, fills the pot, and the entire process of potting is performed in the dark, and, in consequence in a most haphazard, inefficient manner. Potting with balls also leads to over-potting, one of the most fatal drawbacks to the successful culture of pot Roses. No balls, but carefully lift the plants, tracing out and preserving all the roots. Examine the latter thoroughly, and remove every gourmand or sucker, and shorten back, if need be, the strongest roots, jealously preserving all the small feeding fibres. Choose the smallest pots that the roots can be got into—6-in. or 8-in. will suffice for a good sized plant. Drain it with a single potsherd in the bottom over the hole, and a  $\frac{1}{2}$  in. or  $\frac{3}{4}$  in. of 1-in. bones. Sprinkle over these a pinch of dry soot. Protect the drainage with a thin layer of rough Cocoa fibre, followed with some of the roughest of the compost, working in the latter so that the roots shall be equally distributed throughout the mass, keeping most of them near to the centre. The latter is of great importance, as nearly all roots grow outwards, and it is no uncommon thing to find the outside of the balls of earth a complete tangled mat of roots, while the inside is well-nigh rootless. See by the first disposition of the roots that the interior of the ball is furnished, and the roots will take care to fill the exterior. After potting, overhead syringing and a close shaded position will immediately quicken the roots into new growth. As soon as this is found to be the case the plants should be fully exposed to light and air, and after a time, should the weather prove mild, they may be placed out-of-doors till wanted.

**Proper compost for pot Roses.**—Volumes almost have been written on this subject. Every kind of manure has been recommended, such as blood, bones, night soil, pigeon manure, malt combs, &c., &c., until not a few have turned away in disgust from Rose growing, because of the unsavouriness of the prescribed aids to growth. Now there is no denying that the Rose in full vigour of growth is what is called a gross feeder, and it is politic not to enquire too nicely at times about the sort of table it has dined or supped at. But in starting Roses in pots, no gross food is needed; they will start better and make more roots in less time in a sandy loam than in any other nostrum whatever. Should it not be sufficiently light, add a fourth part of well rotted Cocoa-fibre refuse and another of silver sand, sharp and gritty to the loam. The roots will grip hold of such a soil with avidity and fill it full of fibre as if by magic; whereas they often sulk and turn away from rich composts, consisting of a third or a half of farmyard or other manure, night soil, bullocks' blood, &c.

Charred refuse, earth, or marl may also be used as the plant advances in growth, and even a third or fourth of well decomposed strong manure. Bone dust, hoof parings, horn shavings have also been used as compost for Roses. These may be sparingly used for the second or subsequent shifts. But at first the great object is to get many roots of moderate strength rather than fewer and stronger ones, and hence light, fibry, moderately rich porous loam is the best compost for potting up Roses. As soon as the roots show freely through the side of the balls shift into larger pots, taking care, however, not to overpot Roses on this their first nor at any subsequent shift, as Roses, like most other plants in pots, invariably flower freest when partially pot-bound. As to food, any quantity of it can be supplied in a liquid state. So presented, the roots are free to reject or absorb it on its rapid passage. But mix rich food with the

soil and the roots must either absorb it or the food itself is converted into poison, deranges the mechanical condition of the soil, blocks the drains, and thus degenerates into a source of disturbance or disease.

### The best form of Roses for pots.—

Under this head the stock difficulty presents itself in full force. It is not simply a question of dwarfs and standards, but of dwarfs from cuttings, buds, or grafts. Though most rosarians prefer their pot Roses on their own roots, it is nevertheless a fact that many of the finest Roses grown in pots have been worked low on the Manetti or the Brier, while not a few very fine specimen pot Roses have been dwarf or medium standards also on the Brier. Experience also runs strongly, and with almost entire unanimity, against the use of grafted plants for pot culture. It is somewhat singular that a mode of union which proves permanent and complete among Apples and Pears should prove most unsatisfactory and evanescent among Roses. But so it is; and therefore avoid grafted plants for pot culture. Budded plants on either the Manetti or the Brier do well, seedling Briers and Brier cuttings generally producing far more roots than the usual Brier of our woods and hedgerows. Still, Roses on their own roots get rid of the plague of suckers, and are to be preferred if they can be propagated or procured in sufficient numbers. The dwarf bush is the most common form of Roses in pots, and, perhaps, on the whole, the most effective. But standard, pyramid, or pillar Roses may also be thus grown in pots as perfect or even more so than in the open air. Such climbing Roses, too, as Maréchal Niel may often be grown successfully in pots for the clothing of roof rafters, arches, &c., in positions where it would be quite impossible to plant them out. Weeping Roses could also be grown in pots, and whatever objections may be urged against tall Roses in the open air would hardly apply to those in pots under glass, for some of our grandest Roses, such as Maréchal Niel and Niphetos, are never seen to such advantage as when seen from below weighed down with a freight of beauty or fragrance almost more than they can bear; they seem to appeal to us for help. D. T. FISH.

**Budded Roses.**—When could Roses, budded on Briers this season, be moved to the best advantage? Next month, or in February? [This month, that is, November, will be far better than February for the removal of newly budded Roses. It would be better still for the Roses could they be left where they are for another year, and moved into their final flowering quarters in November, 1882. Not a few Roses are crippled for life, and many are absolutely killed, by being transplanted too soon after budding. However, when and where practicable, it is a good practice to plant Briers where they can remain for good.—D. T. FISH.]

**A happy accident.**—A branch of a China Rose has rambled into a strong clump of the Great Ox-eye Daisy. Its pink flowers are so good among the big Daisies that we take the hint and are now planting them together.—G. J.

**Labels.**—I enclose you one of my own labels, which I have always found to answer well, and I do not wish a better one; they are inconspicuous, easily inserted, and never become displaced. What more can be desired in a label?—B. HOOKE. [The label in question is a triangular zinc one, about  $\frac{3}{4}$  in. long and 2 in. wide at the top, 1 in. in depth, the part on which the name is written being slightly bent back. The corners, too, are cut off, which gives to the head of the label an improved appearance.]

**Hemlock poisoning.**—Some cattle have lately been poisoned in the north of Scotland through eating Hemlock. It grew on the edge of their drinking pond. As animals in warm weather are apt to get into the water and browse off the banks of such places, nothing so poisonous as Hemlock is well known to be should be permitted to grow on them.



## GARDENERS' FRIENDS.

## CRABRONIDÆ.

COMPARATIVELY few persons are aware how very useful in gardens many of our smaller insects are; as a rule, all insects, large or small alike, are put down as destructive creatures, to be crushed and annihilated as quickly as possible; this is a great mistake, and one object of these articles is to inform persons who have not studied the subject what insects are injurious and what are beneficial in gardens. The little four-winged flies, or rather bees, which are the subject of the present paper, are exceedingly useful in destroying various injurious insects, such as small caterpillars, grubs, and aphides, which they collect with much labour, and with which they store their nests for the sustenance of their grubs. These little bees belong to the family Crabronidæ, for which I am afraid there is no English name; there are a great number of British species (about 110) in this family, divided into several genera, which are all probably more or less useful to the gardener. Unfortunately, though some species are very common, they are never found in great numbers, as they are solitary bees, that is, they do not live as the hive or bumble bees do in large communities, but each female forms her nest by herself, and provisions it with food for her grubs without any assistance. Two species which I have figured—*Crabro Panzeri* (fig. 2) and *Pemphredon*, or *Cemonus unicolor* (fig. 1)—destroy aphides, and are therefore of the greatest service in gardens. The other, *Crabro cephalotes* (fig. 3), provisions its nests with flies. These insects choose various positions for their nests; some select the dead stems of Brambles. On examining a Bramble or Wild Rose bush in a hedge, one will be sure to find some old dead stems with their tops broken off; on further examination, very probably one or more of these stems will be found to have a hole in the pith where it is exposed at the top. On splitting open such a stem a tunnel will be found several inches in length, with others branching from it, in which are the nests of these little insects (there are, however, other small bees not belonging to the Crabronidæ which also use Bramble stems in the same manner). *Pemphredon unicolor* and some other members of this family which tunnel into Bramble stems begin at the top where part has been broken off, and commence boring into the pith, forming a straight gallery generally several inches in length, from this the female forms side chambers (fig. 1), which lead from the main gallery at an angle downwards. Often more than one opens into the longitudinal tunnel at the same point; in each of these chambers she deposits an egg, and then fills the cells with aphides or small caterpillars. As soon as the grub is hatched it begins feeding on the provisions stored up for it, and having attained its full growth and finished the contents of its cell, it becomes a pupa or chrysalis, in which state it remains during the winter months, and in April or May emerges as a perfect insect. Some species make their cells in a longitudinal gallery (fig. 2) by carefully dividing it with transverse portions, formed of small pieces of pith which they have gnawed off in forming the gallery. On opening a Bramble stem one sometimes finds it contains nothing but a mass of tunnels, running in all directions from one or more main ones.

It might be imagined that in the case of those species which make their cells one above the other in a burrow, that the perfect insects in the lower cells would leave the chrysalides before those in the upper, and would therefore be unable to escape, but there is really no difficulty in the matter; it has been ascertained that the egg is fixed to the first victim deposited in each

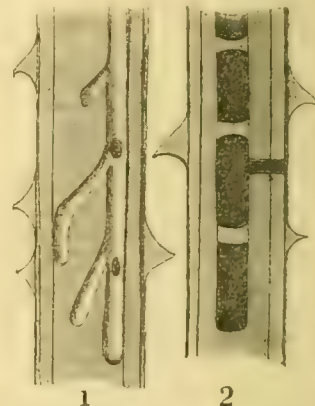
cell, and that the grub gradually works its way upwards, and having finished its food becomes a chrysalis, in which condition it remains for some months, till the weather is sufficiently warm to make the perfect insect leave its chrysalis, so that one egg having been laid some days before another does not make any difference in the appearance of the bee; the upper cells generally contain males and the lower ones females. Some members of this family, *Crabro cephalotes* (fig. 3) among the number, burrow into decaying wood, often selecting posts and palings, and there form their cells, which they provision with various insects. *C. cephalotes* is one of the most predatory species, and, as before stated, collects flies for the sustenance of her grubs. Others again burrow in sandbanks or pathways. In the latter position may be found the nests of *Crabro Panzeri*, which are stored with aphides. One sand-burrowing species fills its cells with the very injurious Turnip beetles or fleas; these are such small insects that a great number are required to fill each cell. Some make their nests in old walls, burrowing into the mortar for that purpose. Others find in the straws of thatch ready-made cells which only require dividing and filling with food to make them habitable for their grubs.

It seems that each species as a rule confines

more or less curved position. Many when full grown spin a light cocoon round themselves in which they become chrysalides. Others assume the chrysalis state without any further covering. *Pemphredon unicolor* (fig. 1) may be described as follows: Its length is nearly three-eighths of an inch, and it measures nearly  $\frac{1}{2}$  in. across the wings when fully expanded; its colour is shining black; head, square and massive; besides the usual eyes there are three ocelli placed between them in the form of a triangle; the antennæ are short and composed of thirteen joints in the male, and twelve in the female; wings, moderate in size, slightly iridescent; veins, dark brown; abdomen, joined to the thorax by a very slight stalk. *Crabro Panzeri* is somewhat smaller than the preceding species, as it only measures three-tenths of an inch in length, and four-tenths across its wings; its general colour is shining black; the head is large and square; the antennæ are either twelve or thirteen-jointed; the basal joint is much longer than the others, and is of a pale yellow colour; the eyes are brown, and between them are three ocelli; on the thorax are three yellow spots, two transverse ones in the front, and one just behind the middle; the wings have pale brown veins; the thighs are black, and the shanks and feet yellow. *Crabro cephalotes* (fig. 3, slightly enlarged) is very



Fig. 1, *Pemphredon unicolor*, magnified; Fig. 2, *Crabro Panzeri*, magnified; Fig. 3, *Crabro cephalotes*, slightly magnified.



Figs. 1 and 2, Bramble stem bored by Crabronidæ.

itself to one particular kind of insect with which it feeds its grubs. *Crabro vagus* catches blue-bottle flies, another species gnats, another spiders, others beetles, thrips, the larvæ of froghoppers, some, as we have already seen, aphides and small caterpillars, and with these they fill their cells. The number of insects put into a cell varies much. In some cases a single caterpillar is sufficient; in others, sixty or seventy small insects have been found in one cell. *Pemphredon lugubris* has been observed by Mr. F. Smith to settle on a Rose tree, and, scraping a number of aphides into a ball, fly off with it, carrying it in front of its anterior legs and under its head. If this little bee, which is very much like *Pemphredon unicolor*, could only be cultivated by rosarians, they might leave the green fly to their tender mercies. The Crabronidæ belong to the Natural Order Hymenoptera (the Order which contains the sawflies, ants, wasps, and bees), and are placed in the section aculeata, or stinging insects, and the subsection fossiores or diggers; they may generally be known by their comparatively large square heads. Many are very wasp-like in form and colouring; and others, though dark in colour, are much the same in general shape. They are very strong, active insects, and are particularly fond of sunning themselves on the broad leaves of plants.

The grubs are blind and legless, and are soft, white, and fleshy, mostly lying in their cells in a

much larger than the above species, and is very wasp-like in appearance, and measures about  $\frac{1}{2}$  in. in length, and seven-eighths across the wings; the head is black and particularly large, with the usual ocelli; the eyes are brown; the antennæ are black, with the two basal joints yellow; the thorax is black, with the extreme edge in front yellow; the veins of the wings are pale brown; the legs are shortish, the thighs, with the exception of their tips, are black, the shanks, feet, and tips of the thighs yellow; the body is yellow, with the stalk, base, and four transverse bands shining black. G. S. S.

**Tomatoes not proof against insects.**—I send some Tomato plants infested with a small white fly, with which I have been troubled for these last six years. It came here first, I think, on some young Fuchsias; now it infests the whole garden. —GEORGE BOLAS.

[Your plants are infested with the Snowy Fly or Cabbage-powdered Wing (*Aleurodes Chelidonii*), a small four-winged insect, which is classed between the aphides and scale insects. It is by no means uncommon, but it is not often so abundant as it seems to be with you. It injures the leaves by sucking the juices from them. As they live on the under sides of the leaves, they are very difficult to destroy. Gather the infested leaves and burn them. Syringing the plants two or three times with any insecticide that will kill them. Try dusting the plants with soot or lime. The fungus is not caused by the fly.—G. S. S.]



## THE FRUIT GARDEN.

## THE APPLE.

*(Continued from p. 447.)*

**Best position for an orchard.**—There can be no doubt that the position of an orchard has much to do with its success, and that the more favourable the site the better the results. Anyone, therefore, looking for land to convert into an orchard had better pay double for that which is favourably situated than commence in an unsuitable locality. In this part of Kent we have light stony soils on the elevated portions, generally a moderately stiff loam on the slopes, and very stiff retentive soil in the low-lying localities. On all these the Apple is grown in large quantities, but whereas both highlands and lowlands have their years of scarcity quite as frequently as their years of plenty, the orchards on the gentle slopes facing the south or west very seldom fail. For the hill-tops only the commonest kinds are available, and in the stiff soil of the low-lying grounds, although most kinds grow luxuriantly, they do not ripen their wood so well as on the hill-sides, and they are more liable to suffer from frosts both in winter and spring, the former injuring the immature shoots, and the latter the blossoms. Stagnant moisture, too, hangs around the trees in the valley, while those on the hill-sides escape. It is for this reason that land on the slopes, or hang of the hills, as it is called, is so valuable for orchards. It is naturally well drained and sheltered by the higher ground behind, and the soil being of good depth, resting on Kentish ragstone or hassock, the trees retain their vigour for many years. Either a full south aspect or south-west is considered the best, for if the slope looks eastward the cold winds are most destructive in spring. In the blossoming season, too, the sun shines fully on the trees directly it is above the horizon, thus injuring the blooms wet with hoar-frost; while on the southern slopes, and more especially if they incline to the west, there is time for the blossoms to get dry before the sun's rays reach them. I find, therefore, that many of the best orchards in this locality that are famed for continuous cropping are on the western slopes of hills. This season fruit crops are general, but when partial failures come owners of sheltered orchards reap the benefit, for the expenses of carriage and commission are the same when the price ranges from 2s. to 3s. per sieve as they are when it ranges from 5s. to 7s. One year's crop in such seasons would pay for the loss of that of several years were such a mishap possible, which is unlikely.

**Shelter.**—This has a most important effect upon the welfare of orchard trees, more especially when young, for in old orchards the trees shelter one another, only the outer rows showing the ill effects of exposure. Anyone contemplating planting, therefore, should previously supplement whatever shelter exists with some rapidly growing belts on the exposed side, more especially on the north and east. In this locality we are supposed to enjoy a comparatively mild climate, yet shelter for orchards is considered to be of the highest importance, and therefore all naturally sheltered grounds on hillsides are eagerly taken for orchards at a high rental. In the case of existing orchards I have no hesitation in saying that it would be found to be a profitable investment in any part of England to cut down a few of the outer trees and plant a shelter belt on the exposed quarters, for in many counties it is impossible to find the gently undulated surface that exists in Kent. In forming new orchards the planter should precede his fruit tree planting with additions to the existing shelter. It should not be so close as to prevent a

free circulation of air nor shade the orchard; but, nevertheless, it should be sufficiently close to break cold currents of wind, and nothing is better for this purpose than tall trees, either evergreens, such as Scotch Fir, or deciduous as Poplars, Elms, or Chestnuts. I may mention that in this district where Hop plantations are being superseded by fruit trees the Apples are planted between every fourth or fifth row of Hops, only sufficient Hop hills being grubbed up at first to allow of the trees being planted. All the rest are left and poled in the usual way, and in this shelter the trees get up to a bearing size much faster than in open fields. Ultimately the remnant is grubbed up, and the soil sown with Grass seeds for permanent pasture to be fed off by sheep.

**Preparation of the ground.**—Provided there is no stagnant moisture in the soil, draining will be worse than useless in orchards, for when the trees get large they are more likely to suffer from want of moisture than from an excess of it, as evaporation from the large surface of foliage is greater than the annual rainfall can supply, and the soil on level rather elevated ground gets as dry as dust. In very low-lying positions, however, efficient drainage must be provided before planting takes place, or the trees will be covered with Moss and Lichen, and the young wood will fail to ripen and fall a prey to the first severe frost that follows. Tile drains are sure to become choked with roots, but rubble drains or those filled with a good depth of any hard material that is easiest procured in the neighbourhood will last as long as the orchard itself. The drainage being completed, proceed to trench the soil at least 2 ft. deep. Old pasture land is about the best that can be selected for the purpose. Turn the top spit right into the bottom of the preceding trench; as this decays the turf makes excellent food for the main roots, and being generally rich in manurial properties, it is able to support a clear healthy growth for years without the addition of fresh manure, which, except on impoverished arable land, is not needed. The second or bottom spit will be brought to the surface, and the bottom of the trench should be dug over or well broken up with a mattock, removing any large stones as the work proceeds. In this district stone suitable for roads is plentiful at two or three spits from the surface, and therefore enough may be got out in many cases to pay for the trenching. This kind of work may be done in winter when it is almost impossible to profitably employ hands at any other employment, but instead of planting late in spring it will be better to occupy the land with some light crop, and plant early the following autumn. If the land is poor it may be manured, and ploughed, or forked over in the spring, and will be in excellent condition for planting in October as soon as the leaf begins to fall. In land that is light and stony a good quantity of marl or clayey loam should be worked into it at the time when the holes are made for planting. This will be of more lasting benefit to the trees than manure, which we find does most good applied as top-dressings. It then answers the two-fold purpose of keeping the surface roots moist in times of drought, and being gradually worked into the soil by worms and otherwise, it becomes available for food.

**Filling up existing orchards.**—As a rule new orchards are well planted, but in filling up existing orchards where trees have failed, many do not make anything like adequate provision for the future wants of the trees; merely digging a hole large enough to thrust the roots into will not do. A tree under such circumstances is not differently placed from a plant in a pot or tub, except that it does not get the unremitting care as to the daily supplies of

moisture and other necessities which the pot plant gets; consequently it either dies outright or remains stunted for years.

Wherever it is intended to plant single trees the soil should be taken out from 6 ft. to 9 ft. square. If on turf lay the top spit back ready to go to the bottom of the hole when it is filled in again, but if left open for a month or two so much the better, so that if the bottom spit is dry it may get thoroughly moistened. Two spits deep should be thrown clear out and the bottom well broken up, and if of unsuitable soil some may be taken out and carted away, or spread on the surface of the orchard, for even the most unkindly soil will become good for surface roots after being exposed to the atmosphere for some time. In places where the sub-soil is bad it will be found better to prevent the roots going straight down by putting in a hard foundation of pounded bricks and lime rubble formed into a concrete than to attempt any remedial measures in the shape of root lifting or root pruning. Having prepared the bottom of the hole, turn the top spit back again, Grass side downwards, and on this put at least a cartload of fresh soil to plant in; that may consist of parings from the sides of roads, chopped turf, and some thoroughly rotted manure, or the refuse from ponds or ditches; in fact, anything in the shape of new or unexhausted soil. An Apple tree should never be planted where another Apple tree has been taken down; it is better to follow stone fruits, such as Cherries, or Plums with Apples and *vice versa*; for, as is well known, land may be rich in what one variety requires, and yet poor in what is necessary for another. Therefore, if it is intended to fill up an orchard with the same kind of fruits as those that grew there before, sufficient fresh soil must be introduced to give the young trees a vigorous start, trusting to top-dressings afterwards to keep them in good health.

**Apples in gardens and on walls.**—Where the Apple is grown in gardens on the Paradise stock, either as a dwarf bush, cordon, or in the many forms adapted for trellises, as good a preparation as regards the borders must be made as if Peaches, or any other choice fruits were going to be planted, for unless the produce is to excel that from ordinary standard orchard trees, there will be no motive for planting Apples in gardens; but we know that the Apple is of all fruits capable of improvement, and any extra good culture bestowed on it is soon rewarded with extra fine examples of fruit. On the Paradise stock there is no fear of the trees becoming over luxuriant, for their energies are directed to fruit bearing and forming fruit buds, and no prettier sight can be had in a garden than a quantity of these miniature trees loaded with finely swelled and beautifully coloured fruits. Provided the soil chosen for the fruit borders has not been previously exhausted by fruit trees, and does not require draining, the same preparation as regards trenching as for orchards will be necessary in the first place, but it may be more enriched with manure and more fresh soil may be added, for, unlike orchard trees on vigorous free stocks, there is little fear of these surface-rooting kinds growing, as I have said, too strongly. In this locality the soil is naturally well adapted for Apple culture, and consequently little preparation beyond trenching is needed, but in many parts, more especially where the soil is light and sandy, or where gravel crops up near the surface, considerable additions of fresh soil will be needed to make a good Apple garden. For tender varieties such as the white Calville and others that are grown in pots, there is nothing like a good stack of turfy loam dug off an old common or pasture that has been continually fed off with stock. This should be obtained in dry weather



and stacked long enough to kill the Grass roots, when it will make, when roughly broken up, an excellent compost. If from light lands a portion of marl or heavier soil may be added, and a little charcoal or brick rubbish pounded fine, but manure will be best applied, as I have said, as a top-dressing after the trees get a crop set on them, and in pots they can readily be helped when swelling their crop with stimulants in a liquid form.

**Selecting trees.**—This is an important subject, and one which should always be performed in good time. Planting early in October is undoubtedly a great gain; if left until snow and frosts are upon us, it had better be deferred until the spring. I know from experience that young trees lifted and replanted while there is yet much of the latent summer heat in the soil make considerable progress in getting established before winter, and start off with far greater vigour in spring than those left until the sap is in motion before they are moved. The best trees to make really good specimens are those that have never had a check, for if once they get into a stunted state the bark gets hard and they never grow into handsome trees. It is better to plant young maiden or one-year-old trees than such as have been headed back time after time; select always those with shining, healthy stems, two or three years from the graft, for they are sure to give satisfaction when finally planted in the orchard, and for miniature trees for the garden select those that have been annually replanted, for being surface rooters on the dwarfing stocks they should have such a mass of wiry fibrous roots that they may be successfully moved at any time; and they should, too, have been carefully pinched, and be bristling all over with fruit buds. Second-rate trees obtained at clearance sales in the end of the season are dear at any price; they occupy the same space as good trees, and take up valuable time to little purpose, for eventually they have often to be replaced.

JAMES GROOM.

Linton.

### AMERICAN GRAPES.

SOME controversy has arisen during the past spring and summer in relation to the comparative merits and qualities of American and European Grapes. The general character of our Grapes has been assailed by English writers, and among others Mr. Hovey came nobly to the rescue. Curiously enough, as it appears, most of our best and most popular Grapes are quite unknown to European growers even by name, and of course our newer productions are wholly unknown to them. These facts will doubtless account in a large measure for the adverse opinion entertained in regard to American Grapes. But, be it remembered, America is a favoured land for fruit growing, and we are not content to take second place to any other, not even for Grapes. We have eminent pomologists, scientific, practical, and progressive, and our strides upward and onward in the noble art of pomology have been fully commensurate with our progress in other departments. Our climate is better adapted to the growth and development of the Vine than that of Great Britain. We can and do grow our choicest Grapes in the open air, and even without winter protection in many cases, and we are not yet prepared to admit that our Sacramento Valley, our Pacific Slope, and even our central portion of the Hudson River Valley are surpassed by the genial south of France or the sunny slopes of Italy in general adaptation to Grape growing.

There are said to be over 1500 varieties of the Grape known to pomologists, and if the truth

were known, I believe the real number of native and cultivated sorts would be vastly more, as we are adding to the list by the hundred every year in this country alone. Just how many hundreds of these are worthless, I am unfortunately unable to state; but I do know that here in America, and in my own State, as well as other States, we raise Grapes in the open air every year that for purity and quality of flavour—"moral character," as Oliver Wendell Holmes would say—and beauty of appearance can scarcely be excelled, or need not be by any country on the globe. It is perhaps a peculiar statement to make, but I feel satisfied that were they accessible to me at this time I could convince the mind of any foreign connoisseur on this point in a few moments, and I would do it through his palate. We are challenged to produce Grapes equal to the Hamburgs and Tokays of English vineries. But we do not stop there. We can beat them, and outside of any vinery with a winter temperature of 20° below Fahrenheit's zero, and that with Vines unprotected in many cases. And I see no good reason why some of our choice new hardy sorts would not thrive well even in the open air of England. As to the vineries there, beside deserving the attention suggested in a previous number of THE GARDEN, it would seem eminently desirable that a few of our newer American Grapes should receive some trial under such glass, at least before any wholesale condemnation was pronounced.

Having thus referred to this branch of the Grape subject in the full consciousness of the fact that we have hundreds of men here who can speak from far greater knowledge and experience than I can, though perhaps not more earnestly, I now pass to what I saw and learned during a recent visit to a pomologist and fruit hybridiser of some note in this country, and one who perhaps is not wholly unknown to some English cultivators who read American horticultural journals.

A few miles down the Hudson River, whose banks have been so rapidly converted into fruit gardens of late years, on the west bank at the little village of Marlborough, and not far from the home of Charles Downing, that venerable pomologist of whom America is so justly proud, are the residence and grounds of Mr. A. J. Caywood, who has spent half a century in the cultivation and dissemination of fruits, and devoted a large share of his time to the hybridising and improvement of existing varieties. He has given special attention to the improvement of Grapes for many years, and has doubtless achieved greater success with them than with any other fruit. It was here that I saw and carefully tested some new Grapes, which I regard of much interest and value. Mr. Caywood has evidently operated intelligently and systematically with a definite object in view—bred for points, as we might say. He was not satisfied with our standard of Grape flavour. Rogers' hybrids were below the mark in his estimation. He sought to get rid of "foxiness," and yet avoid a mere insipid, characterless sweet flavour, and he desired furthermore to produce a Grape skin without the acidity and astringency so common to nearly all out-door Grapes as to make them unfit to eat; and then, besides all that, he wanted to get a Vine that was vigorous and hardy, able to withstand the inclement winters of our temperate zones without protection. The methods employed by him to attain these objects cannot be detailed here, but the results achieved by him deserve mention. He has produced some seventy seedling Grapes that have been deemed worthy of preservation. At the time of my visit (October 14), the fruits of about fifty of these seedlings were shown to me. Of this number some

ten or fifteen seemed to possess much positive merit. Only one among these many seedlings has yet been disseminated. This is called the Duchess, and if I mistake not this Grape is destined to be one of the most valuable varieties yet produced in any country. It seems to combine more good qualities than any other, which is the judgment of a wide extent of country where it has been tried. Indeed no unfavourable reports of it have yet appeared. In colour it is greenish white, darker in the sun; bunch large, shouldered, and compact; berries medium sized; skin thin, edible, and pleasant to the taste; pulp tender, very rich, and delicious; seeds few and small; adheres firmly to the stem, carries well, and keeps plump and firm a long time; ripens early, evenly, and strongly. The Duchess can be eaten skin and all with a positive relish; there is nothing to reject; no acidity can be drawn from the skin; all is pleasing to the taste. The Vine is said to be vigorous and hardy everywhere, and was left upon the trellis here all through the past severe winter without visible injury. This Grape was placed at the head of the list for flavour among white Grapes by the American Pomological Society last year, and it is perhaps one of the most promising varieties in this country to-day.\*

Another most attractive Grape among these seedlings has been named the Ulster Prolific. It is also high flavoured, tender, and delicious, with no unpleasant flavour about the skin. It is a red Grape, the bunches of which are large, handsome, and compact, and the berries of good size. It keeps well and adheres firmly. The Vine is said to be very vigorous, hardy, and productive. Though not yet introduced to the public, it has been well tested in different localities and under varying influences with most promising results. Pakeepsie Red is another variety similar in its general type to the one last named. It is both handsome and excellent, without any apparent defects. It has produced heavy crops on the originator's ground for years past. The Mabel is a newer wine-coloured seedling, named only a few days ago. It is also very attractive and promising in flavour and appearance, and will receive thorough trial. His "little perfection" in flavour, as Mr. Caywood calls it, is named Lily, on account of its purity. In flavour it really is superb and peculiarly delicious, skin and all. It is clear white, transparent, and single seeded, without a trace of foxiness or astringency about it. These are about all of this rare collection of seedlings that have been fully named as yet. Numerous others seemed almost equally attractive, but require further testing. Any one of those named would let in a flood of light upon any English cultivator whose palate they might pass, and give a better idea of quality in American Grapes than our ablest writers could hope to portray. Our standard of Grape flavour in America to-day is very high. Indifference is rejected on sight. Mere sweetness will not do; it clogs upon the tongue. We must have some positive character of an agreeable nature in our Grapes, and hybridisers have given us this; and in addition they have removed all unpleasantness about the skin. We can now eat Grapes as we would a Strawberry, without sucking the juice and pulp from the skins. We do not want your Hamburgs, your Tokays, Muscats, Frontignans, or your Chasselas. We have passed that point, and are still going ahead in the "moral tone" of our American fruits.

H. HENDRICKS.

Kingston, N. Y.

\* Duchess Grapes have brought 25 cents per pound all the season in New York market at wholesale, while Concord, the main market variety of this locality, sold at 3 cents.



**Standard Gooseberries.**—"P. G." (p. 448) thinks it strange that nurserymen do not offer these for sale. I can tell him that in the north of England, where Gooseberries are largely grown, nobody seems to care for standards. For some years I have made growing small fruit bushes a speciality, and have produced some fair standards, but I could not find a purchaser for them. It takes about five years to get up a fairly good standard Gooseberry, and at the prices that can be got for such trees, say 4s. per dozen, they are not worth attention in a commercial way. Only a few varieties of Gooseberries are suitable to grow as standards. Amongst early sorts, Golden Ball does well, and Aston is the best for late work. Houghton Castle is by far the best Red Currant for standards or pyramids. At Trentham some thirty years ago great attention was paid to the growth of standard fruit bushes, but there was a very limited range as to varieties that were suitable, and the forced growth then tried was not satisfactory. Pyramids are far better, and certainly quite as ornamental as standards in the case of either Gooseberries or Currants.—YORKMAN.

—Can any of your correspondents say what stock should be used for standard Gooseberries to give clear stems of say 3 ft. or 4 ft? No doubt the Gooseberry itself might be "run up" to the required height, but its tendency to send out side shoots would be troublesome, and something much better might probably be found. A stout stem would be necessary to bear the weight of a bushy head.—P. NEILL FRASER.

—When at Bonn, in Germany, two seasons ago I saw standard Gooseberries and Currants planted in some of the gardens by the 100 all round the walks, and very well they looked. Last spring I received some from Messrs J. and F. Schmal, in Jungbunzlau, Bohemia. The Gooseberries are Lancashire sorts, of which I had a good crop this season. The stems are about 2½ ft. high.—W. B., Putney Heath.

**Sawdust for plunging Pines.**—Here our artificial heat appliances for growing Pine-apples are but limited. The bottom heat is all derived from fermenting material. In winter Oak and Beech leaves are collected from the woods, and mixed with a little long stable manure before being made up into beds. When this mixture was used wholly we have sometimes had to renew our beds two and three times a year, and this entailed much labour in shifting the plants out and in. Early last spring in making up the beds we placed a layer of sawdust more than 1 foot deep all over the surface, and in this the pots were plunged. Since then we have never had any addition to make to the beds, as the fermenting material, being unexposed, has not decayed in the least, and the heat which formerly escaped so freely from the surface has all been kept down, as the sawdust is not a good heat conductor. In this way we have kept the temperature much more steady, and it has been otherwise a saving, while the plants have done better than any we ever had. Three or four years ago all our Pine plunging material was carted from a tan-yard about eight miles away; now we are better served from the woods, stables, and saw-mill close by.—J. MUIR, Margam.

## SHORT NOTES—FRUIT GARDEN.

**A good year in Kent.**—I am paying a visit in the parish of Ryarsh, in Kent. My father has among his fruit trees a Goff Apple tree from which he has this year just gathered 87 bushels, and a Russet from which he gathered 33 bushels. J. F.

**Ecklinville Seedling Apple.**—In your report of the Scottish Horticultural Association's Apple show you spell one of the varieties Ecklinville. The Ecklinville Seedling was raised by my grandfather, and should be spelt with an h instead of k.—J. ECHLIN WARD, Highfield, North Circular Road, Dublin.

**Apples shrivelling.**—T. B.—Evidently not a good keeper; therefore should be consumed as soon as ripe.

## SEASONABLE WORK.

### FLOWERS AND PLANTS IN THE HOUSE.

THERE are still some good gatherings of Tea Roses; Madame Falcot and Safrano are faithful to the very end. Of other flowers from the open air there is a large table bouquet of Michaelmas Daisies and the great Ox-eye. Asters Amellus and longifolius are the most decorative; the latter has a rosy tinge that makes it strangely bright at night; the best variety is Madame Soynuce. The red form of A. Nova-Angliæ is also fine at night; the paler lilac kinds look well arranged with the grey foliage of Cineraria maritima. There is a good bunch of Orange, and a few white Eschscholtzias, self-sown from last year's autumn-sown plants. Herbaceous Pæonies give finely coloured leaves for a tall glass of the last Gladiolus. Other deciduous plants whose leaves we must make the most of before they fall are Pear and wild Cherry, hardy Azalea, Liquidambar, Vines, such as Barbarossa and Alnwick Seedling, common Thorn (leaves and berries), and wild Brambles. Many coloured leaves look their best placed in a window, so that the light passes through them. A good pottery jar of Bramble leaves alone, well chosen and well arranged in a hall or stair window, is a decoration highly to be recommended. Other table bouquets may now be made of Sternbergia lutea, with its own dark leaves, and a few leaves of the small veined Arum, and a larger one of the beautiful seed-pods and leaves of the Stinking Iris (whose name is a calumny) with fronds of Hart's-tongue Fern. Many flowers last much longer in water than growing, notably Amazon Lilies; therefore to cut them liberally for the house is a thrifty habit. The leaves of the Plantain Lily (Funkia grandiflora) are a capital substitute for their own, which one grudges to cut in quantity. Acanthus latifolius and mollis, potted up in summer, make fine foliage plants by this time. They are admirable for a hall or entrance, and in a cool place will last the whole winter.

G. J.

### FLORAL DECORATIONS.

J. HUDSON, GUNNERSBURY HOUSE.

THE somewhat heavy-looking epergnes or centre-pieces sometimes met with in silver and other metals may often, by means of judicious arrangement, be rendered very effective. Taking an epergne as the centre for a dinner table of goodly size, I would arrange the topmost dish with flowers and foliage, dispensing if possible with the branches entirely. A small plant of Pandanus Veitchi, with prettily variegated foliage, would make an appropriate centre, and plants for this purpose can be grown and well developed in 3-in. pots. Turn the plant to be used out of its pot, then place it in the centre of the glass dish, and fill up sufficiently to hold it firm with sand, in which insert the cut foliage and flowers after having covered it with moss. As a fringe of drooping foliage around the dish, the medium-sized fronds of Goniophlebium subauriculatum (an elegant basket Fern) may be used, letting the points nearly or quite touch the table-cloth. A few fronds also of Adiantum cuneatum, or of A. amabile, of good size, might be used around these, and a few fronds of the first-named inserted indiscriminately above them. This is, I find, a better plan than arranging the flowers first and then the Ferns afterwards. If required a frond or two can easily be used at the finish to tone down the colour. The flowers may consist of a few blooms of Eucharis amazonica, with which any of the highly coloured Dipladenias would form a good contrast. The brilliant spikes of Salvia splendens or of Schizostylis coccinea would also match these well, and two or three trusses of white Bouvardia or of Roman Hyacinth would be ample to produce a good arrangement. A spray or two of Lapageria rosea and alba, if they can still be had, might be suspended around the edges. The one great point to be avoided in this and all other arrangements is over-crowding. A handful of flowers well arranged is better than an armful crowded and lumped together. A very pretty and pleasing effect

may be produced in the drawing-room just now by means of Bouvardias alone by mixing a few sprays of the following kinds together, viz., Humboldt corymbiflora, or jasminoides (whites), and Hogarth or elegans (scarlets). B. Maiden's Blush, Reine des Roses, and umbellata carnea are also very useful for this purpose and distinct. These flowers generally last well, an essential point at this season. A trumpet vase will be found best for them.

### FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE.

THERE is so little that is attractive in this department of the garden at present, that neatness and high keeping should be the order of the day, so as to make up in some measure for the lack of flowers, which in most places have been torn and dashed to pieces by the wind and wet; fortunately, however, the Chrysanthemums stood the trying ordeal well and will soon be opening their buds, in which the plants will be greatly assisted by an occasional soaking of strong liquid manure, for though the land is still very wet, Chrysanthemums root so thickly near the surface that they cannot well have too much moisture, as they are very gross feeders. In cases where they are growing near together in beds or borders, it will now be advisable to be prepared with some kind of covering to protect them by night, for should we get sharp frosts, which may now be expected at any time, their buds will become injured, if not altogether destroyed. Where the plants stand singly, it is a good plan to have a stout stake thrust in at their side, with the top to stand just clear of the head, from which stake a Laurel or other evergreen branch can be hung when occasion requires.

As the tops of most herbaceous plants are now ripe, they may at once be removed, and where a re-arrangement of the different kinds may be thought necessary, this is a good time to set about it, or to divide and reduce any of the stronger sorts, such as the Helianthus, Rudbeckias, Pæonias, Funkias, Phloxes, &c., which, where the soil is rich and good, soon outgrow their allotted space, and encroach on others that are less robust and more tender. Before carrying out any re-arrangement, the borders should be deeply dug or trenched, and have a good supply of mild rotten manure worked in below, as it is useless attempting to cultivate herbaceous plants unless their roots can go well down where they get plenty of food and moisture during dry weather. As soon as the planting is effected, the next thing is to mulch the border over with half-rotten leaves, and these will be found the best material for laying around the crowns of Acanthus and Tritomas, or anything else of a similar habit of growth that may stand in need of protection during the winter. Last year we were able to save our Pentstemons and Antirrhinums by using the covering adverted to, and it is also of great value for placing over Lilies and any other bulbous or tuberous rooted plants that may be left in the ground.

**Dahlias,** Salvia patens, Aralia papyrifera, and Cannas will now be best out of the beds, for though the three latter may be wintered there in dry light soils, with protection afforded, they are much safer, and cause less trouble housed. The way Cannas keep best is to take them up and let the roots dry a little if the earth about them is wet, and after the tops are cut away they may then be buried in sand or dry soil in any shed or cellar where they can be secure from frost. Stored in this manner they remain sound and plump, and start strongly again in the spring if they are then taken up, potted, or laid in leaf-mould, and subjected to a little heat in a frame. Dahlias and the lovely Salvia patens do well treated in a similar way, but Aralia papyrifera, if taken up before its foliage becomes disfigured, is quite deserving of room in a house where, if arranged so that its bold leaves stand out from among other plants, it will be a great ornament.

With the summer occupants removed and beds clear, attention should at once be directed to re-filling them, for doing which a whole host of plants



may be used. For winter decoration there is nothing more effective than neat dwarf shrubs of various kinds, such as Aucubas, gold and silver Hollies, variegated and plain-leaved Yews, Laurustinus, Box, Euonymus, the pretty little Retinosporas, and any small Conifers, most of which come in well for the centres of circles. To carpet the ground, Ivy and Vincas of different kinds are the best, and to afford more colour, a few of the ornamental Kales may be used. In the arrangement of these several plants, the thing is to avoid formality and overcrowding, as when this is done the effect is in a great measure spoiled; but by dotting them here and there, and using them as central objects in circles, around which to place some or other of the spring flowering plants, they may be made very telling. One of the most pleasing combinations is that of a gold or silver Holly with Myosotis or blue Violas, edged with a broad band of white Daisies, yellow Pansies, or the common Primroses, the soft colour of which blends well with Myosotis, and is very charming. By grouping a few of the most prominent beds something after the manner adverted to and making use of Wallflowers, Arabis, Snowdrops, Hyacinths, Crocus, Tulips, and similar early blooming plants in front of the other shrubs, gardens may be made to look well.

#### PROPAGATING.

DURING the winter attention must be paid to the preparation of stocks of all kinds for grafting or budding next season, such as trimming off all superfluous branches, and where necessary replanting the stocks. If it is intended to graft under glass, which is the practice generally followed in the case of choice or delicate subjects, the stocks should be potted in as small pots as possible, and, if hardy, plunged out-of-doors till wanted. In selecting stocks of any kind choose those with clean, healthy growth in preference to such as are stunted, and as the chances of success are greatest when both stock and scion are nearly related to each other, the object must be to choose those in which that relationship most nearly exists. Thus, in the case of the Coniferae, for the true Thuja select as a stock the North American *T. occidentalis* and *Biota orientalis* for the Biotas. Among these latter it is absolutely necessary to graft one of the forms of the Golden Arbor-vitæ, viz., *sempervirens*, as it roots only with great difficulty. *Picea pectinata* is used as a stock for the Silver Firs, the Norway Spruce for the needle-leaved section of the Abies, and *Abies canadensis* for the Tsuga group. In selecting stocks for the various species of Pinus the selection must always be made of one bearing the same number of leaves in a sheath as the scion; thus graft two-leaved on two-leaved, three on three, and so on. The common Yew does well as a stock for all the kinds of Taxus, Podocarpus, and Cephalotaxus, and seedlings of Cupressus Lawsoniana for its many varieties, and also for Cupressus nutkaensis. For the Retinosporas, obtusa and pisifera from seed are used as stocks.

Young and vigorous plants with stems varying from the size of a straw to that of a pencil will be found the most useful for the whole of the above, and when potted they may be shortened somewhat where necessary, as at the time of grafting the heads must not be cut; that must be left until a union has taken place. The common Euonymus europæus does well as a stock for all the deciduous species, and on it also the evergreen kinds succeed, but then they are liable to lose a few leaves during the winter. Most of the slight growing kinds of Ivies are grafted on the Irish, but before potting them up remove all underground buds, or suckers will be always troublesome. The Osmanthus not only grows well and freely on the Privet, but retains its leaves as well as on its own roots. This latter stock is also used for all the various species of Ligustrum, and with it the Lilacs readily unite, but do not live so long as when grafted on the common Lilac, which is easily raised from seed for that purpose.

Many of the Cytisus do well on the common Laburnum; among others the beautiful pendulous greenhouse species, Cytisus filipes, which, grafted as a standard some 2 ft. or so high, has a very pleasing effect. Seedlings of Rhododendron ponticum are principally used as stocks for the various members of that genus, being in some places grown in very large numbers for that purpose. The Single Red is the stock employed for the numerous varieties of Camellia, and it may be raised either from seeds or cuttings, the latter being principally the method adopted, as seed is seldom readily obtainable. The cuttings are made of the half-ripened wood about 6 in. in length, and succeed best when taken off just at the junction of the new with the old growth. Remove the leaves to the depth of 2 in., insert the cuttings in well-drained pots of sandy soil, and place them in a close frame till callused, when a little bottom-heat will hasten the formation of roots, or a bed may be prepared in the frame, the cuttings inserted thickly therein, and allowed to remain till rooted. Of course this latter method takes a longer time, as rooting does not commence till the following spring. The above include but a few of the plants for which grafting is employed; for instance, the greater number of our fruits are propagated in that way, but as they are principally grafted in the open air, the stocks (as in the case of Roses for budding) do not require potting. T.

#### INDOOR PLANTS.

T. BAINES, SOUTHGATE.

To keep up a regular supply of flowers from the present time until spring it is necessary to consider beforehand the length of time it takes to bring into bloom the particular kind of stock that is cultivated, so that each succeeding lot of plants that are introduced to the stove or forcing house may be brought on without being unduly hurried. It is scarcely necessary to point out that flowers produced in heat at this dull season, when comparatively little air can be given them, will be wanting in lasting properties if too much heat and atmospheric moisture are used. Whether wanted for cutting, or to remain on the plants in conservatories, rooms, or for use in any place where the temperature is much lower, and the atmosphere dryer than that in which they have been bloomed, they require to be treated with judgment. There is nothing more disappointing than to see them in a half flagging drooping state directly they are removed from the forcing house. An over-moist condition of the atmosphere of the house at this season, although contributing to increased size in the flowers, is fatal to their lasting near the length of time they otherwise should do; consequently no more water ought to be used than is necessary to keep the air from becoming too dry to admit of healthy growth. In houses where the principal object is to force flowers in winter, and where the hot-water pipes are furnished with evaporating troughs, it is much better not to keep them filled during the dull period, for the high temperature it is often necessary to maintain in the pipes, especially through the night, keeps the atmosphere in a half saturated state, out of which it is useless to expect flowers to last as they should do either when cut or on the plants. Another cause which alike contributes to the same unsatisfactory condition is the plants standing at too great a distance from the light whilst being brought into bloom; in this latter respect it is of the greatest advantage if they can be kept with their heads within a few inches of the glass. Where a right condition of the atmosphere as above indicated exists, with the plants well up to the roof glass, a considerably higher temperature may be safely maintained without the flowers being deficient in substance and ability to last than if they were farther from the light. This is a subject to which young hands at winter flower forcing may with advantage give attention, for if even a few of the flowers used in a bouquet or the filling of a vase droop, the effect of the whole is spoiled.

**Euphorbia jacquiniæflora and Poinsettias.** Young plants of the former struck from cuttings in spring will require to be kept where they can have a brisk heat, so as to get them on in size before they show bloom. A portion of the earliest ought to be placed at the warmest end of the house, with their tops all but touching the glass in the lightest position available. These will flower about the beginning of the new year and be succeeded by the later stock. Where Poinsettias were propagated early the first will now be coming on fast, and if some are kept a little cooler, say in a night temperature of 55°, they will flower in succession. In like manner a portion of all such winter bloomers as *Sericographis Ghiesbreghtii*, *Thysacanthus rutilans*, winter-flowering *Eranthemums*, and *Begonias*, with the ever-blooming *Scutellaria Mocciniana*, should be kept in a genial heat to bring them into flower.

**Gloxinias, Achimenes, and Caladiums.**—Such of these as were started early will now in most cases be denuded of their leaves, and should have the roots kept quite dry; they are better left in the pots if room can be found in a house or pit where there is a moderate heat maintained, as if wintered in too low a temperature they are liable to rot. In like manner young bulbs of choice varieties of Gloxinia that have been raised from leaves during the summer, may either be left in the sandy material in which they have been propagated or put in dry sand, but they also must not be too cool.

**Aphelandras.**—The flowering of that useful autumn kind, *A. cristata*, can be regulated by the way in which it is treated through the summer; where grown comparatively cool it will be in bloom up to the middle of November, at which season its erect spikes of bright orange-red flowers are very effective. In the case of old plants after the blooming is over the shoots should be headed back to within a joint or two of where they were cut in last year, placing them for the winter where they can be kept comparatively dry at the roots. The small growing *A. Roezli* is one of the freest winter-flowering plants we possess, blooming when not more than a few inches high; by keeping a portion of the stock in an intermediate temperature they may be had in flower in succession up to spring.

**Dracænas.**—Spring and summer are usually looked upon as the seasons for propagating the generality of plants, especially such as strike and grow quickly; the lengthened days and increased heat then at command offer advantages not obtainable in the winter; but there are some things that, if cuttings are put in now, make better plants before autumn than is possible if their propagation is left until spring. Amongst these are Dracænas of the numerous variegated as well as green-leaved species and varieties. The method now usually followed with old plants that have got bare leafless stems, is to cut off the crowns with about six to eight leaves to each, and insert them singly in small pots, confining them in a brisk heat; at the same time take off pieces about 2 in. in length from the extremities of the thick root, with all the fibres attached, and put them several together in a deep pan filled with sandy peat, with the buds at the extremity all but covered with the soil. Thus turned bottom upwards, they will grow and form leaves. The stems may be cut into lengths of about 6 in., and laid down in pans of similarly prepared soil, just covering them. In this way a portion of the eyes will form shoots, which, when they have got three or four small leaves, can be severed from the stems and managed as cuttings by keeping them close and warm until established. The old stems treated in this manner will generally yield a second crop of young shoots. When begun with in winter the young stock gets a start before spring that enables better plants to be made by autumn than is possible if the propagation is delayed longer.

**Dipladenia Bolivensis.**—Anyone having a stove where a medium temperature can be kept up may with advantage grow this free blooming



plant, either in the form of a trained specimen, or attached to the roof. Compared with the older and better known kinds it is a small grower, occupying much less room; it is a profuse flowerer, and those who fail with the other species and hybrids need not fear succeeding with this; it will continue blooming up to the end of the year. The flowers are white with a yellow eye, in size and general appearance not unlike those of *Mandevilla suaveolens*; it is beautiful for mounting in bouquets.

**Anthuriums.**—A. *Scherzerianum* does much better when grown in an intermediate temperature than kept in the stove, making larger leaves with the flowers which follow proportionately bigger. The plants will now be completing their growth, and until the leaves are fully matured the soil should be kept quite wet. It is a swamp plant and will never grow so strong as it should unless the material in which the roots are placed is very much wetter than the generality of plants will bear; 48° or 50° in the night with a few degrees higher by day is the right temperature for A. *Scherzerianum* throughout the autumn and winter. The new A. *Andreanum* is now beginning to develop its true character; the first imported plants as they get stronger produce larger flowers, in this keeping on increasing proportionately. It will most likely be found to require a considerably higher temperature than A. *Scherzerianum*; it appears to go on flowering regularly as the leaves are produced and attain their full size. Plenty of moisture and loose open materials, such as are suitable for epiphytal Orchids, answer for it. Its habit in its native country is quite epiphytal, although in a pot it does not develop this character.

**Salvias.**—Where a good collection of the autumn flowering varieties of these is grown, along with *Veronicas* and *Chrysanthemums*, there need be no scarcity of flowers in greenhouses for the next two months. If a sufficiency of the above is at hand, there will be less occasion for forcing early many plants that will do good service later on.

#### FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Vines.**—If former directions have been followed, the early house will be ready for closing when the proper time arrives; meantime keep it well ventilated, and have plenty of fermenting material well worked for placing on the internal borders, and see that the latter are brought into a nice growing state by the application of tepid water at a temperature of 90°. The outside borders will be the better for a covering of some kind for throwing off wet, but fermenting material must not be applied until the swelling buds show signs of breaking into growth; otherwise new roots will be formed at the expense of the sap now stored up in the vines, and the latter will be retarded and weakened thereby. Push on the pruning and cleansing of succession houses, but avoid peeling or scraping the rods. If old, they may be tied up to the wires at once, as they will break evenly under any conditions; but vigorous young canes will be the better for being slung in a horizontal position. When vines are pruned early they gradually fill up their buds and break stronger than they do when this operation is delayed. Select moderately strong ripe wood for eyes from the early houses, and heel in until wanted for propagating or grafting.

**Late houses** in which Grapes are hanging will now require careful management to prevent the fruit from shrivelling under too much fire heat and damping through the want of it. Thin-skinned kinds like the *Hamburgh* will keep best off the vines in a well ventilated Grape room from which the light is excluded. Muscats now quite ripe may have just sufficient fire heat to expel damp and to maintain a temperature of 50° to 55° at night. See that the surface roots have sufficient moisture to prevent the berries from shrivelling, and cover the inside borders with dry fern to check evaporation from the soil and to

prevent dust from rising and settling on the berries. In modern houses composed almost entirely of glass, ripe Muscats are liable to change colour and sometimes scald after this season; and as this defect greatly depreciates their value, a few breadths of canvas strained across the roof while preserving the delicate amber colour of the berries will prevent fluctuations of temperature and reduce the necessity for applying fire heat. Where *Lady Downes* and other black kinds remain unfinished, fire heat with plenty of air will still be needed. If heavily cropped and perfect colour is doubtful, a nice surface watering with tepid liquid on a fine morning will help them, but no time must be lost in applying it, as the foliage will soon be ripe and falling from the vines.

**Peaches and Nectarines.**—The early house intended for closing at the end of this month having been properly prepared, but little attention beyond liberal ventilation for the next three weeks will be needed. Any trees that were lifted or disturbed in August or September, if properly attended to with water, will now be re-established in the soil, and capable of bearing the strain of a good crop of fruit next year; but these, as well as others which have not been disturbed, must have sufficient water to keep the internal borders in a growing state throughout the resting period if bud dropping in the spring is to be avoided. If, owing to the mildness of the weather, the lights have not been placed over the trees, they may be kept off with advantage until we have a change, as trees having had a long rest are easily excited, and excitement in October or November, followed by a check, may lead to the loss of the most prominent buds. Where the roofs are fixed keep all doors and ventilators open, and see that the roots of the trees have liberal supplies of water, as a well drained and properly made border cannot easily be over-watered. In succession and late houses the usual routine must be closely followed up, and young beginners must bear in mind that doing a thing at the right time follows close upon the heels of doing it well. Where the trees were well thinned after the fruit was gathered, and a little fire heat has been applied, the latest kinds will have ripened every shoot, and as this is one of the secrets of a good set, the mistaken idea of overcrowding need not be indulged in. A good Peach to every square foot is a heavy crop, and to secure this two shoots crossing that space will give a large percentage for removal when the time arrives for thinning. If trees have to be bought in, this is a good time to get them. When choosing a tree the stock is of more importance than a handsomely-formed head, and my experience leads to the conclusion that Peaches, Nectarines, and Apricots worked on short stems some 18 in. to 30 in. in height are hardier than dwarfs, and succeed in low, damp situations where the latter would fail. Unfortunately, our great fruit tree nurserymen do not give this matter the attention it deserves, as it is only by chance that we can meet with nice trees with 24-in. stems, notwithstanding the fact that many gardeners would willingly give full standard prices for them.

**Orchard house.**—We have recently removed all the trees that were repotted from the orchard house to a sheltered situation out of doors, and others which had not become pot-bound have been top-dressed and placed with them, where they will remain until the winter occupants are taken out in the spring. Birds being destructive when the buds begin to swell, we are obliged to net the whole block, and dry fern is used for protecting the roots from frost and drought. For some years we have grown trained standard and half-standard Peaches and Nectarines in pots and tubs upon a trellis 16 in. from the roof, where, the roots being confined and highly fed, we obtain very heavy crops of fruit greatly superior to that obtained from bushes and pyramids, so much so that we have no hesitation in recommending the system to amateurs and others who wish to grow the cream of the cream, fit to eat or exhibit at a tithe of the expense of an ordinary orchard house. Trees intended for

potting should be secured without delay. Meantime have a good supply of dry compost mixed, and clean dry pots crocked ready for use, as the delicate roots of a tree should never become dry, as is too often the case when brought from a distant nursery. To obviate this difficulty, and to economise time, a few maidens should be bought in every year and planted or potted and plunged in a dry, warm border in the garden, where they can be mulched, pinched, and manufactured into perfect pyramids ready for filling up blanks as they occur. Pears, Plums, Cherries, and Apricots lifted, root shortened, and replanted in new loam every year soon make handsome fruit-bearing trees; but, unless the climate is very good, Peaches and Nectarines do best under glass.

#### MARKET FRUIT GARDENS.

J. GROOM, LINTON PARK.

THE last of the fruit being now cleared from the trees, and either marketed or safely stored growers are able to turn their attention to pruning and winter cultivation. The first operation in established fruit gardens will be to go over the entire stock and mark such trees or bushes as are intended to be removed, so that the work of re-filling all gaps may be completed before other work can be proceeded with. In taking down trees of any size in gardens so thickly planted as those in Kent usually are, great care is necessary not to injure those around them. The best plan is to cut the tops down a branch at a time, and by means of ropes lower them carefully until nothing is left standing but the stem, which must be grubbed up by the root. The exhausted soil must be wheeled away, the bottom well broken up and manured, and a large quantity of maiden loam introduced in order to give the new tree a fresh start. Planting being completed, pruning of the standard trees or bush fruits (Nuts excepted) may be proceeded with. Large standards of Pears, Apples, Cherries, or Plums should be systematically gone over, removing dead wood or weakly undergrowth from their centres, but do not on any account cut off large branches or prune out much wood at any one time. If the trees have been neglected and consequently overcrowded, it is better to reduce the super-abundant growth at two or three winter's prunings than to remove it all at once. I have seen orchards quite ruined by cutting out too severely. Trees that have been spurred in close will keep fruitful for many years, but a tree that has been allowed more freedom will, if cut in very hard, receive a check from which it will take years to recover. The only way to avoid this is to go over the trees every winter, for although they require but little pruning after they have got to a bearing size, that little should be given them and at the right time. In the case of young trees forming heads, thin out all branches that cross each other, shortening the main leading shoots to a bud that points outwards. After standards are completed, bush fruits may be proceeded with.

**Black Currants** always bear best on the young wood, but Red and White varieties bear heaviest crops when spurred in close to the old wood. In young bushes there must, however, be sufficient left to form the main shoots of the future tree, and until that is formed the shoots must be allowed to elongate according to the strength of the bushes. Gooseberries bear both on the young wood and on spurs on the old wood; it is therefore advisable to leave a fair supply of young shoots every year, cutting away any older ones that are getting weakly or thin of spurs. Where large fruits are desired the bushes must be thinned severely, but in market gardens the rule is to leave the wood thick, and gather a large portion of the crop green. Now is a good time to put in cuttings of bush fruits. Select strong shoots, and cut the eyes out the lower portion or butt end for about 8 in., leaving some four or six eyes to form the top. Then plant in rows 1 ft. apart and about 6 in. asunder in the row. Afterwards they only need keeping clean and cutting down close the following autumn, when they make excellent



little bushes the succeeding year for forming new plantations. Where this is done on a large scale it takes many thousands of bushes to meet the demand. Of Black Currants, Baldwin's, Lee's Prolific, and Black Naples are the favourites; Red Currants, Ruby Castle and Victoria; and White Currants, the Dutch and Transparent. Amongst Gooseberries the best are Crown Bob, Warrington, Bank of England, Lancashire Lad, Whitesmith, Yellow Rough, Rifleman, and Red Champagne.

In order to grow large crops of bush fruits under standard trees there must be heavy manuring, and most of the growers in Kent have large heaps in readiness for putting on the ground as soon as the pruning and dressing of trees and bushes is completed. This operation is, however, best done in frosty weather. Almost every kind of refuse is utilised for manure; rags or fish that has been condemned as unwholesome food are bought up and dug in round the bushes. The soil being trampled hard during the gathering season is greatly benefited by being dug up as roughly as possible now and exposed to the frosts of winter, after which it crumbles down as fine as ashes when worked with a prong-hoe, and all Docks, Couch Grass, or other weeds are picked out and thrown on the surface until they become thoroughly dry. They are then burnt along with other refuse, such as cuttings, trimmings of hedges, &c., and the ashes spread on the land.

Now is a good time to set about exterminating insect pests, such as American blight. The branches should first be well scrubbed with stiff hair brushes and then dressed with Gishurst compound, or painted with a mixture of soft soap, sulphur, clay, and paraffin oil; even common train oil alone will greatly check the American blight. In wet, undrained soils Moss or Lichens overgrow the trees and cover the twigs; in this case the stems and large branches may be painted with hot lime put on like whitewash, and the head dusted with freshly slaked lime, putting it on by hand when the branches are damp, in order that it may stick to them. During wet days, cuttings, stakes, and labels may be prepared, and fruit stores looked over. Cob Nuts and Filberts that were roughly picked will require going over, and all leaves or bad Nuts that turn black when stored must be picked out; then they should be packed in bags made of Hop pocketing material. Nuts are now realising about £3 10s. per 100 lbs. They are one of the crops that do not suffer from foreign competition, as there is always a ready sale for them at good prices. Large quantities of Nut trees are now being planted; they succeed admirably on stony land. Apples must be kept cool for a time after storing and well ventilated; have efficient covering at hand in case of frost. Hereabouts Oat straw is the material usually employed for this purpose.

#### KITCHEN GARDEN.

R. GILBERT, BURNLEY.

Now is the time for planting Shallots, an operation which should be done as follows: Make a very shallow drill in the site selected, and place the bulbs 1 ft. apart, covering them 2 in. deep with burnt refuse—the same holds good in the case of Garlic. It is said the importance of growing one's own seed cannot be over estimated. I therefore always grow selected stocks of Onion seed. Pick the very best shaped and largest bulbs, dry them well, and plant them at once. I find this system to be better than planting in spring; by practising it one has always a stock that is improving. Frost at this season may come at any minute; therefore lift and put into sheds all Broccoli and Cauliflowers that are ready for use. They will keep for a long time in this manner. Look well after growing Lettuces and Cauliflowers in frames. Collect leaves to be in readiness for forcing Seakale and Rhubarb. We have just finished lifting a magnificent crop of Potatoes (Scotch Champions).

March, and stand a long journey better than large plants. The best mode of packing is in a light wooden box, the roots being in a little earth wrapped in wet moss, and put close against the ends of the box, leaving in the middle space for the tops. Let the lid of the box be movable, and visit the plants daily to see that the moss is damp; keep it so, and give air to the tops as long as possible. This can be done with very little trouble, and a box of from 10 in. to 12 in. long, by from 6 in. to 8 in. wide and deep, may contain 100 rooted cuttings.—JEAN SISLEY, *Lyons.*

#### THE GOLD-LACED POLYANTHUSES.

HAVING been from home some weeks and in arrears with my floricultural reading, I have only just seen the articles on the above subject, by Mr. Brockbank and Mr. Douglas, published in THE GARDEN. In common with all true florists I am glad to see that these long neglected, but lovely flowers are now coming to the fore and receiving a fair amount of recognition. I must, however, take exception to Mr. Brockbank's description of my seedling Sunrise. Of it I read with astonishment the following remark: "When freshly opened it is a beauty, but it soon becomes coarse and rough, and will not show well when the flowers are old." Now what opportunity has Mr. Brockbank had of forming an opinion of Sunrise? He can only have seen it once for a few minutes during its brief hour upon the stage at Manchester. Judging from what he has written, it is doubtful even if he saw it then; he has certainly never seen it as exhibited at South Kensington; he has never seen it at home in my garden; he knows nothing whatever of its appearance in "the freshly opened state," or what it is like "when the flowers are old;" yet he publishes a description of it which is about as far from the truth as it well can be.

Again, Mr. Brockbank says of Sunrise: "It is a long way behind some of our old sorts, such as George IV. and Prince Regent." The value of this comparison is shown by the fact that Sunrise has taken the first prize every time it has been exhibited, beating everything that came against it, including George IV. and Prince Regent. On the only occasion when Mr. Brockbank had the chance of seeing Sunrise, George IV. and Prince Regent were well exhibited by several exhibitors (Mr. Brockbank included), who cannot have had in the aggregate less than ten times the number of plants of these varieties that I had of Sunrise, yet Sunrise beat them all. But for Mr. Brockbank's remarks I should never have troubled your readers with anything about my seedling Polyanthuses, but have left them to success or failure, according to their merits or demerits, but the course he has taken compels me to place before them the true character of Sunrise. No one has grown it but myself, and no one will grow it until it is distributed next autumn. When tested by other growers I am certain that it will be found a long way ahead of George IV. and Prince Regent.

In addition to being a rich and decided red ground in colour, I may say that in all strict florist properties and in constancy it is a long way ahead of any red ground Polyanthus in cultivation; that the beauty and freshness of its newly-opened flowers will be maintained longer than any other variety of its class, and that they finally die upon the stem at a ripe old age without the least trace of coarseness or roughness. It is, moreover, of a good robust constitution, and I am confident will grow well in the south.

Mr. Brockbank mentions my "other seedling," John Bright; he knows, I presume, that I won the first prize for six dissimilar Polyanthuses at South Kensington with six dissimilar seedlings of my own raising—three red grounds, and three black grounds. He may, however, not know that I had in my collection two black grounds much better than John Bright, one of which, Criterion, received the first prize for a black ground seedling, and a first-class certificate of merit. What we want in seedlings is not a flood of second and third-rate varieties, but something quite equal to the best

kinds in cultivation at least, and in advance of any of them where possible. By keeping to a high standard in making our awards to seedlings we shall doubtless see much better things in Auriculas, Polyanthuses, and all other florist flowers than have ever been seen before.

It may fitly be mentioned in conclusion that for the last two years at the national shows of florists' flowers a special fund has been subscribed by a few members for the purpose of giving prizes to seedlings of sufficient merit, in addition to any other prizes or certificates of merit which they may have won; therefore, anyone desirous of seeing improvement in florist flowers cannot do better than subscribe to this special seedling fund. S. BARLOW.

*Stakehill House.*

**The Giusti Gardens, Verona.**—I was much pleased to read the little notice of these beautiful old gardens in your columns a week or two since. Some 13 years ago I had an opportunity of visiting them, and shall have a vivid recollection of their beauty as long as I live. When I left, the gardener gave me as a memento a few bulbs of a small double yellow Narcissus which grew there in quantity, and which he described as being curious and rare. It had narrow Rush-like leaves and was probably a form of *N. Jonquilla* fl.-pl., but I did not see it in bloom. The bulbs came up freely every spring in my garden here, but never bloomed. The last three hard winters were too much for them, and this spring the few survivors perished. I should much like to procure a few more bulbs if I knew how.—H. HARPER CREWE, *The Rectory, Drayton-Brauchamp, Tring.*

#### OBITUARY.

G. J. JOAD.—Many allusions in our pages have called attention to the rich collections of most interesting plants in this gentleman's garden at Wimbledon, and it is with extreme regret we have to announce his decease, which took place on the 24th ult. This is a great loss to gardening, and especially to the flower department of it, as he had a correct judgment of the garden value of new plants, and did not merely collect for the sake of collecting. He had a very extensive knowledge of plants, and we have not seen an amateur's collection in which the plants were so correctly named. We might say more, that many botanical gardens do not show so much care in this important respect. His loss at an early age is a decided loss to the cause he had so much at heart.

**Early Flowering Vetch.** *Mrs. Douell.* Probably *Orobis Venus*.

**Gum.**—Of what is the gum composed which is used on postage stamps? H. H. B., *St. Paul's Cove.*

**Garden Appointments.** Permit me to correct an error relating to Gardening Appointments (p. 432). Instead of Mr. Cuckey being appointed to Eden Hall Gardens it should have been Mr. Jesse Busby, late foreman at Blenheim. WM. CRUMP.

**Names of fruits.**—*J. M.* 1. Beeching; 2. Glory; 3. Cox's Orange Pippin; 4. Ribston; 5. Court of Wick.

**Names of plants.**—*Mac.*—*Blitum capitatum*.—*J. B. P.* *Mitonia spectabilis*.—*Perth.* 1. not in a condition to name; 2. when the fronds have spores on the margins; 2. *Pellaea ornithopus*; 3 and 4. *Gymnogramma triangularis*.—*J. C. T.* *Salvia involucrata*.

**Books.**—*T. N.*—*Orchid Grower's Manual*, B. S. Williams, Victoria Nursery, Upper Holloway, N.

#### COMMUNICATIONS RECEIVED.

E. C.—*J. S.*—*S. S.*—*Subscriber*—*W. C.*—*A. P. H.*—*W. T.*—*G. W. T.*—*P. B. B.*—*T. L. K.*—*M. L.*—*J. V. J.*—*W. E. G.*—*A. F.*—*J. D.*—*S. D.*—*J. W.*—*W. G. S.*—*J. G. C. D.*—*B. T. B.*—*R. G.*—*C. W. B.*—*J. S. W.*—*J. B. P.*—*G. H. R.*—*H. M. C.*—*S. F. A. D.*—*T. H. A. H.*—*A. M. P.*—*T. B. J. W. C.*—*G. W. J. M.*—*M. N.*—*B. J. H.*—*F. D. R.*—*J. M. C.*—*H. H. C.*—*G. S. A.*—*L. G. J.*—*J. F. S.*—*E. H. & H. B.*—*C. M. O.*—*P. N. F.*—*J. S.*—*E. J.*—*R. M. G.*—*S. D.*—*P. T.*—*N. P.*—*B. Co.*—*C. A. P.*—*S. H. H. C.*—*Mac*—*J. M. J.*—*E. W. J. D.*—*R. M. Soc.*—*J. S. & Sons.*—*J. B.*—*Subscriber.*—*Mrs. D.*—*W. B. S.*—*F. F.*—*J. C. T.*—*T. N.*—*A. P. H.*—*J. C. B.*

**Packing Carnations for Canada.**—Cuttings rooted in winter are fit to travel in



No. 521. SATURDAY, NOV. 12, 1887. Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare*.

## GARDEN THOUGHTS.

The chill winds of autumn wail mournfully here,

The leaves round me falling are faded and sear,  
But cold though the wind blows and threatening the storm,

My heart full of fondness beats kindly and warm. Yes, the gardener's heart is waterproof against all the sullen rains that fall, and were he located in that royal garden at Potsdam, which Carlyle described as "the finest fog preserve in Europe," he would have a sunshine of his own. If the surroundings of the present be dreary, he rejoices in the brightness of the past; if the Pleasures of memory are marred by disappointments, he betakes himself to the pleasures of hope. But the surroundings of the present never are dreary in these days of abundant glass, and though Boreas growls at him and pelts him with hailstones, and Jack Frost bites him, nose and toes, in the open, there is a snug boudoir in which Flora smiles her welcome, and, like phyllis, "never fails to please."

*Exempli gratia* (as we used to write in those wretched Latin themes at school), I was in Kent not many days ago, and visited the nurseries at Swanley. There was little externally to attract—beds and frames full of healthy little scions, the babies of the nursery, not long weaned from the maternal plant, but no brightness of bloom, and the glasshouses (there must be nigh upon a score of them, each 100 ft. in length) looking white and cold on that dull, cloudy day. If this is "The Home of the Flowers," I thought, as it had been publicly declared to be, the inmates, like Irish landlords, and to speak more *Hibernico*, must now be absentees. But Mr. Cannell met me with a smiling face, and with none of those apologies which are not unfrequent in the horticultural world—"You have just come at the very worst time of all; we were magnificent, grand, glorious, ten days ago. Mr. Van Thol's agent happened to call, and said there was nothing like it in England or on the Continent; but now all is a blank." No; he led me with a quiet confidence to one of the long houses aforesaid, and I should have started, were it not that seventeen stone takes a deal of starting, to see, as he opened the door, the stages on either side the central path covered every inch of them from end to end with a glowing display of Pelargoniums, double and single, white, pink, rose and rosy-purple, red and orange-red, scarlet and crimson, which came upon me with such a sudden, vivid beauty, that I could scarce believe my eyes.

Nor was this the only surprise; two other of these spacious structures—they are all heated on a system which seems to succeed admirably, one of the pipes traversing each side of the houses midway between the stage and the top of the side lights, and the other laid just above the floor—were filled with Primulas, charming as the Geraniums, though not so varied in their colours, these being white, pink, mauve, and carmine, the prettiest of all (except in its appellation) being the Swanley Red. Moreover, there was a large and brilliant collection of Begonias, pale yellow, deep rich gold, and flaming red, and among them the largest, loveliest specimen which I have as yet seen of this most interesting class, a

blush, double flower, like an Oleander, raised by Mons. Lemoine, of Nancy.

Just glancing at a gay assortment of Coleus (a very useful help to cheer the ungenial days of winter if properly cared for and kept warm in small pots), I must take leave of Swanley, to prove, on my arrival at home, that every gardener, if he has only a "bit o' glass" instead of acres, may make his art "a joy for ever"; and though his employment be on a smaller scale, it will be quite large enough to exercise all his appreciative power quite large enough to fill his heart.

I raise one of the lights of a frame in front of my tiny greenhouse, which is thickly covered with snow, though this is but the first day of November, and underneath the Violet, Marie Louise, just begins its sweet abundant bloom. In a compartment adjoining, the Mignonette of Miles (not Frank, though worthy of the button-hole of that young King of Spades) fills large pots with its fragrant bushes, each grown from a single seed; and all through the winter these two thurifers will send out their incense in my home.

Pass on to the wee conservatory. How they glow, those Geraniums, which remind me of him who raised them, my cheery, clever old friend, Pearson, of Chilwell, with whom I must have "judged" some miles of garden produce, from Orchids to Onions, Dipladenias to Rhubarb, and whom I so often miss and mourn! And how they contrast with the bright yellow Chrysanthemums at their side, and the white Primroses at their feet, just as those persevering Begonias, which seem never to know when it is time to cease flowering, as Napoleon said of our English soldiers, that they never knew when to cease firing, never knew when they were beaten, gain additional beauty from their dark green foliage and from those blue flowers of Salvia Pitcher, and from the white Abutilons, which I see beyond them. And "tell me, shepherds, have you seen" all the summer through brighter, happier flowers in all Queen Flora's Court than the Libonias in their gay suits of green, and red, and gold?

In the stove, the last flowers of Bougainvillea glabra and the first of Sparmannia africana and Eupatorium, blooming among the Palms, remind one of sunny France and Italy; and where shall eye find prettier sight than these lovely little trees of Epiphyllum, suggestive of a fairy forest, and laden with their pendent rosy-purple flowers? Pale and graceful as a bride, the Eucharis bends, as before the altar. The Allamanda, blooming half the year, is still full of golden glory. The scarlet Tropæolums seem all afire amid the Alocasias and Crotons, and the first Bouvardias, white and red, open their plump buds side by side—the last, Hogarthi, sent to me by worthy John Standish many years ago when he first brought it before the public.

Then what a promise waits behind! The Roman Hyacinths, the Lilies of the Valley, the first Tulips have begun their growth. Azaleas, Camellias, Rhododendrons (all honour to Messrs. Veitch for these lovely hybrids) are well set with buds, and of the family first named, the Azalea Graf Van Meran, narcissiflora, Van Houttei, and mollis are prepared for forcing. Cyclamens, Cinerarias, Deutzias, Spiræas, all to follow. Erect buds rising from the Amaryllis, Imantophyllum, and Vallota. Who would not be a gardener! All this to be succeeded by something yet more loveable and sweet, for have we not just removed our pot Rose trees from the ashes in which they have been plunged during the summer, and are they not safely housed

with their long, well-ripened shoots, resting awhile, these sleeping beauties, until we shall gently wake them early in the year to receive our homage and make glad our homes.

S. R. H.

## AMERICAN WOODS.

MR. ALFRED PARSONS, engravings from whose drawings are familiar to the readers of THE GARDEN, and who illustrated the "Wild Garden," is now visiting America, and the following is an extract from a private letter from him from New York, under date October 25, of which we hope he will pardon the publication in the interest of those who like to know how some of our garden favourites look in their native land in autumn:—

"Since I got here I have been mostly in the country doing sketches. Among the places I have been to is Mr. Parsons', at Flushing, where I am doing some black and white drawings to illustrate another article by him in *Harper's Magazine*. He is a very pleasant and interesting man, and has a fine collection of trees. He says that horticulture is not generally as far advanced here as it is with us. The season has been so hot and dry that all the plants are burnt up, and therefore it is hardly fair to judge the country, but as yet I have not seen any garden that shows even an attempt at growing flowers. The farms and small houses are quite bare of flower garden, and their surroundings seem to an English eye very thriftless and untidy.

"It has been a bad year for all fruits; the Apple crop is poor, they say, but I never saw so many before. I have just come from a farm near Rye, West Chester County, where I have been painting an orchard with packing going on, and a Corn-field with Pumpkins lying about. The Apples are not only large, but so fine in flavour! The farmer there speculates in Apples, and has already 700 barrels stowed away in cellars to send to England in the spring; mostly Russets.

"I walked through some woods on Sunday morning full of Kalmia bushes, 10 ft. high; under them were growing Ferns, a Polypody fertile only at the top of the frond, and patches of Adiantum pedatum, withering, but still lovely, making wreaths round the granite boulders, which were partly covered with Moss, and laced with the delicate leaves and fruit of the Partridge Berry. All the flowers are gone, but there are hundreds of stalks and seed vessels about, many of them quite unknown to me. They excite my curiosity very much.



"There is a shrub in blossom now with leaf and stem very like an Elm, but with tufts of blossoms all up the shoots, somewhat of this shape, a pale greenish-yellow, with very delicate scent.\* The Euonymus is very gay, and a shrub with narrow leaves and brilliant scarlet berries up the stem—something of the berry-bearing Alder kind, I should think. The trees are very small as a rule, but I came upon a Tulip tree by Rye Lake, the stem of which was 16 ft. round at the height of my arms, and went up perfectly straight without a branch for at least 40 ft. The whole tree must have been over 100 ft. high. I have wished many times since I came here that I had you with me to tell me all about the plants. There are few things in this world more gorgeous than an undergrowth of Sumach with the sun shining through it—the different scarlets and oranges of the leaves and the dark crimson seeds make a combination that I shall never

\* The Wych Hazel (*Hamamelis*).



forget. How fine, too, the *Smilax* is! the leaves turn all sorts of gay colours above, sometimes spotted and mottled in the quaintest ways, and delicate purplish-grey below. The way they are put on the stem, too, is a delight to me. I have not been up the Hudson yet. We talked of going to-day, but have been obliged to put it off for a week. I shall certainly try to see Mr. Sargent's place, and shall look up Falconer when I go to Boston. The Hudson will not be in its glory this year, so many of the trees are simply burned and shrivelled up that the colour will not be as bright as usual. The Oaks are getting a splendid deep red. To-morrow I am going to Long Island with the annual excursion of the Tile Club, a small and select society of artists, who have a week out together every year. We are going partly to sketch and partly to eat oysters from their native beds. A clam bake is also included in the programme. I think I shall have to spend the spring here, and see all these things growing and coming into blossom."

ALFRED PARSONS.

### WASTE OF FORCE IN HEATING.

MR. J. C. CLARKE does good service in calling attention (p. 455) to the waste of force in heating horticultural buildings. This in many cases is serious, but in others it is more imaginary than real. If half the hot-water pipes are to be constantly in use, there would be no saving in having two boilers, because the first cost of two boilers would be more than that of a single large one, and there would be more fuel burnt under them. One fire with  $1\frac{1}{2}$  cwt. of fuel will give as much heat as two separate fires with 1 cwt. each, to say nothing of the waste in having a greater mass of brickwork and flues in the latter case. A 2000 ft. power boiler will not consume 50 per cent. more fuel than a 1000 ft. one does, or, put in another form, two boilers (costing, say £40) burn 1 ton a month each for 10 and 5 months respectively, making 15 tons for the whole time, while one boiler of double the power (costing £32 only) consumes less than 14 tons in the same period—that is, 5 months full force at  $1\frac{1}{2}$  tons, and 5 months at  $1\frac{1}{4}$  tons only, for half the piping—besides saving of gardener's time in stoking, &c. If, however, a 3000 ft. boiler has to heat only 500 ft. for the greater part of the year the case is different, for this large boiler will contain nearly half as much water as the smaller quantity of piping to be heated, the total being equivalent to 700 ft. of pipe; whereas a 500 ft. boiler will hold water equal to 40 ft. of pipe only as a rule; and again, the same quantity of fuel required for a small boiler if spread over the greater area of firebars in a large boiler will burn away and waste rapidly without heating the water properly. It therefore becomes a question for the proprietor to consider whether he shall try to save by spending more money on two boilers, and giving his gardener more trouble with two fires, or by burning the larger quantity of fuel. I have just seen a place where there is a boiler equal to heating 6000 ft. of pipe, but only 4500 ft. are attached to it—a great waste, it would appear, but there the fuel costs nothing, except for fetching, and there is really little more burnt than if a smaller sized boiler was used, because during the severest weather there is no strain. I may remark that in nearly all cases it would benefit the horticultural builder to put in four boilers rather than one large one, and not, as Mr. Clarke hints, the reverse. It is possible to produce an arrangement of boiler and fire bars that will not require more fuel to be burnt with half the pipes working than there would be with a smaller boiler; in fact, to adapt the same boiler to work either 1200 ft. or 3000 ft. economically and effi-

ciently, and very much in this way can be done with almost any boiler by careful and proper stoking. The greatest waste of force is in boilers like the common saddle and tubulars, in which the brickwork absorbs 30 per cent. of the heat given off. Another great waste is often to be found in the faulty arrangement of pipes, and particularly of the mains from the boiler. I have seen a 4-ft. saddle heating 800 ft. of pipe with difficulty, and the same size elsewhere easily heating 1100 ft. Again, an improved saddle, put in faultily, was condemned after one season, but was re-set, and then it did its work perfectly. It is therefore not the one or the doubled boiler, nor the sort nor form only, that has to be considered in the question of how to save force in heating.

B. W. WARHURST.

### TOP-DRESSING WITH LEAF SOIL.

In various choice borders in the College Botanic Gardens, Dublin, containing rare and good alpine and hardy plants or bulbs, the process of dressing them for the winter is now being carried on and is very instructive. They are not dug; they are cleaned; and between the lines of young plants and the tufts of old ones a top-dressing of about 1 in. in depth of half decomposed leaf-mould and similar soil is placed. If small evergreens, it is "fingered" in amongst them pretty thickly, and the next rain washes it from the foliage, but leaves it round the necks of the plants to protect them from the winter. Then in the spring as the young unmutated roots begin to be more active they find a new bed into which they can ramble. The plan is excellent in various ways—in renewing the food of the plants without injury to them, in preventing evaporation, which is sometimes excessive in early spring days, and in finishing off the border in trim fashion for the winter: the only trouble is to secure a quantity of such soil, which may easily be done by saving all fallen leaves, by letting them gradually decompose in a place set apart for the purpose, and by adding sifted potting-shed refuse, ashes, and similar materials to them. This is done in the case in question, and an excellent plan it is. A large heap should be prepared, and the preparation and sifting of it will afford work to the men at odd times. It is one way, and a good one, of getting over the mutilation and destruction of plants through digging in winter. A little cremating of the weedy portion of such garden refuse would prevent the danger from weed seeds and improve the compost.

### CROCI AND MOSSY SAXIFRAGES.

At this season of the year the only really fresh and delicate flowers in the open air, the only flowers that have a look of youth and spring about them, are the autumn Crocuses. In this respect in the late autumn they surpass the Meadow Safrons (*Colchicums*), which seem to be more beautiful early. But whatever these lovely Crocuses, which Mr. Maw is now studying to such advantage for us all, may be at present, we shall not fully see their beautiful effects in the October and November days until we arrange them a little better. They should spring from short turf, Moss, or some small green plant. A very good suggestion of Mr. Burbidge's is that these and other Croci should be dotted through flakes and carpets of the pretty mossy Saxifrages, which at this time of the year take on their softest, fairest tone of green. It is quite refreshing to see when everything else is decaying these assuming that verdure which only belongs to them and young Grass. There are different tones of green among them, and it is important to select a good one; the common British kind is very good in this respect, but where a number of kinds are grown, which often happens in interesting collections of plants, it would be

easy to select one or two dwarf good green kinds. They are always quickly increased, and it is just as easy to have carpets as small tufts of them.

### THE INDOOR GARDEN.

#### PERPETUAL CARNATIONS FROM SEED.

THE most remarkable feature in the Continental strains of these favourite flowers is their free blooming disposition, and their unusual strength and vigorous growth, thus enabling the plants to attain a large size in comparatively little time, and to produce flowers proportionate in quantity. Plants raised from seed sown in pots in February or March, and kept in a little warmth until large enough to prick off in pans or boxes, and then planted out in well prepared soil, will attain a size by autumn such as to out-distance others of the Carnation family raised from layers or cuttings. Even the freest growers amongst the Clove varieties can scarcely equal them in this respect. The close-growing, compact, tufted habit which they possess is another advantage, for with it there is necessarily a proportionate quantity of flower-stems formed. The best strains of seed will produce near upon, if not quite, ninety per cent. of double flowers. It is much the best way to plant them out in the open ground, as attention in watering is thus reduced to a minimum. A good many of the plants so managed in the south of the kingdom will flower before the autumn is so far advanced as to stop growth, previous to which they should be lifted and potted, or else treated as the Americans manage them, *i.e.*, replanted as close as they will bear in beds in narrow houses, elevated well up the glass, where, with a little fire-heat, they will keep on blooming all the winter. The first opening of the flowers, too, is an interesting process, for they afford endless variety in colour, shade, and general character, and there is the chance, even if remote, of something turning up that will prove superior to others already in cultivation. A matter of the first importance is to obtain seed that can be depended on to produce flowers possessing average quality. Those who do not care for the uncertainty of seedling raising, and that require flowers of these perpetual Carnations through the autumn and winter up to the time when the ordinary early spring-struck plants will be in bloom, will find no difficulty if, when the plants that flowered in pots in the early part of the year have done blooming, they are planted out similarly to the seedlings. By the beginning of October they will mostly be well furnished with flower-stems and advancing buds, and if taken up and potted they will, by being kept slightly warm, yield a plentiful crop of flowers at a time when they are scarce and most acceptable.

T. B.

#### WINTER-FLOWERING BULBOUS PLANTS.

OF the many plants grown for the beauty of their flowers, none are more serviceable than Hyacinths, Tulips, Narcissi, Crocuses, and Snowdrops, which take first rank among bulbs as regards value for general decorative purposes, as with them greenhouses and gardens may be made gay at a season when there is little else to cheer, for by potting or planting early some or other may be had in bloom soon after Christmas, and by a little management a succession kept up till late in spring. Those which may be got in first are the Roman Hyacinths, which are naturally early, and, being small, many bulbs may be grown in a limited space. The best way to manage these is to pot eight or ten together in a 6-in. pot, or more in large deep pans if the flowers are only wanted for cutting, a purpose for which they are very useful, as being white and not so closely set on the spikes as the other kinds, they dress well in vases or work up beautifully in bouquets.

The Dutch or large Hyacinths are best adapted for growing in glasses or pots for room decoration, or for the embellishment of greenhouses, and when used in the latter way they make a grand display by having three together



instead of singly, as they may then be dropped into vases or ornamental boxes in windows and made to produce a very telling effect. In potting the bulbs, they should be placed triangularly close to the sides of the pots, which need not be larger than 6 in. or 7 in., as with rich soil and plenty of feeding they flower just as well as they would if they had double the room. A good mixture for Hyacinths is two parts of fibry loam to one of leaf-mould and manure in equal proportions, which, with a little sharp sand will not only suit them, but the Tulips, Narcissi, &c., as well. The way to pot bulbs is to fill the pots very loosely with soil, and then gently press the bulbs in, as by so doing they settle in their places better, and the potting can be carried out more expeditiously. To save watering at the time of potting, which is very objectionable, as being likely to rot the bulbs, the soil should be just moist, and to prevent its drying the pots with the bulbs should be at once covered with coal ashes, Cocoa-nut fibre, or sand. Sheltered and kept from the light and air in this way, they gradually form roots, and after being buried for about six weeks or two months, they will be sufficiently advanced to be uncovered, and may then be placed in any cold frame or pit to be drawn from as required for forcing or allowed to stand to come into bloom. Narcissi, Tulips, and Snowdrops may be treated precisely in the same way, but being smaller, many more bulbs may be potted together.

**For glasses,** single Hyacinths answer best, as they open their blossoms more readily than the double kinds and make a fine show. In filling the glasses, clear soft water is preferable to any other, and to keep it sweet it is a good plan to put a small piece of charcoal in each glass, which should only be filled full enough for the bulb to be just clear of the water, for if the bottom touches it is apt to rot the base. A cool, dark cupboard is the most suitable place till the bulbs have made plenty of root, which they will do in a few weeks, when they should be gradually inured to the light, and then placed close to the glass in a window, and allowed to remain there till they come into flower. By taking care of bulbs after they have done blooming they may be made to do good service in beds and borders, as planted there in spring they make fresh growth and every year become stronger. What injures bulbs so much is the hurrying off of the leaves before they ripen, which is a great mistake, as the foliage is of the utmost importance and a necessary aid in forming fresh flowers, which in all bulbous plants are made and packed up in embryo the year before they appear.

**Hyacinths, Tulips, and Narcissi** force readily, but Crocuses and Snowdrops do not like heat, and should therefore be allowed to come on naturally in a cool frame. The great point in the management of them all is to see that they do not go short of water, and to keep them well dosed with liquid manure, but in no case should this be given strong, as it is always better to apply it weak and often than to run any risk of injuring the roots. For planting in beds and borders, nurserymen sell bulbs very much cheaper than those for pots; the point is to get them in early, as they lose much of their strength by lying and drying. As Hyacinths like a deep rich soil, the beds in which they are to be grown should be deeply dug or trenched, and have some thoroughly rotten manure and sand worked in, and if the soil is at all heavy, some leaf mould will be a great help in keeping it open. In planting, the bulbs should be placed from 6 in. to 9 in. apart regularly all over the bed, and be covered about 4 in. deep. To make sure of keeping the bulbs sound, it is a good plan to sprinkle a little sharp sand around and over them, which prevents the wet earth coming in immediate contact with them, and secures free drainage. J. SHEPPARD.

**Lapageria alba.**—I can easily believe what is stated regarding the floriferous habit of this plant at Chiswick, but even a greater quantity of flowers can be produced by pinching the grow-

ing shoots at intervals. On shoots so treated I have had clusters of more than a dozen flowers so close as to touch each other—3, 4, and 5 at a joint, all together. At the present time I have a cluster of 13 in the space of 10 in., and a number of other clusters of 5, 9, 6, 7 each within a space of 3 in., or from two and three joints in succession.—J. S. W.

#### ANTHURIUM ANDREANUM.

WHEN this was first shown in flower at South Kensington, everyone who saw it felt satisfied that it was a really fine and distinct new plant, equal if not superior to *A. Scherzerianum*. Since then a good many little plants have bloomed in different places, the flowers of which in most cases have been small, and to many people so far disappointing that the first impression formed has not been sustained. It should be remembered that weak examples resulting from hard forcing and frequent division for purposes of propagation are in no condition to do more than show the remarkably free disposition to flower which the plant possesses. When plants of it have had a chance to gain strength and size the flowers will be proportionately large. This is shown by examples now in bloom, the spathe of which measure 5½ in. in length by 4½ in. in width, and though the strongest crowns are producing the largest flowers there will evidently be considerable difference in the forms: yet possibly not so much as there is in *A. Scherzerianum*. *A. Andreanum* already shows that its form of growth is so far changed by cultivation that it does not assume the epiphytal habit which the imported stock exhibited. It seems to flower from every leaf that is produced, the blooms lasting fresh for two or three months. There is little doubt that it will form one of the brightest objects in our hothouses when it has acquired its maximum size and vigour. The contrast between the glossy scarlet spathe and the pure white yellow tipped spadix is singularly striking, whilst the peculiar corrugation of the spathe does not exist in any other flower in cultivation with which I am acquainted. A. Z.

#### VIOLETS IN FRAMES.

PLANTS placed in pits in August, to supply bloom through the winter and spring, should now be showing abundance of flower. If all the runners were allowed to remain on the parent plants at the time of transplanting, care must be taken that the pits or frames do not get overcrowded with foliage, thereby excluding the necessary supply of air and light, for the development of fine blooms. As a rule, especially at the latter end of the winter, the strongest runners produce equally as much bloom as the parent crowns. These, therefore, should be allowed to remain, but remove the weaker ones, which are more inclined to run to leaf and rob the flowering ones of nourishment. The soil having a tendency to become dry in mild weather, give the plants a good soaking of clear liquid manure in preference to allowing the bed to get saturated, by removing the lights and exposing the plants to heavy rainfall. The structures in which winter Violets are usually grown are wooden boxes or frames. The linings around these should be made up to the top of the pit or frame with non-fermenting material. This arrests the drying influence of wind and prevents frost from getting into the frame. Cover the lights with mats or dry litter when sharp frosts are prevalent, as the plants are in nowise benefited by having their foliage frozen. Admit air in the daytime whenever the weather is favourable by tilting the lights at the back. This in winter will be ample ventilation. In Southern Europe, where Violets are such a feature during the dull winter months, they are rarely subjected to more than 3° or 4° of frost, and this only for a few weeks. In that climate the plants are not only more floriferous, but produce larger and sweeter-scented flowers than those usually obtained here. Yet they do not receive the attention usually bestowed on them in this country in the shape of abundant supplies of water and manure. There they

are subjected to long and successive droughts throughout the summer months, until autumn arrives with its genial showers and refreshing night dews. Then the plump and well-matured little crowns burst forth into growth, and produce flowers in abundance. R. G.

#### NERINES.

SHOWY as these are, it is but seldom we meet with them in a satisfactory condition, yet they are eminently adapted for rendering our glass houses gay at a time when the bulk of summer flowering plants are over. The well known *N. Fothergilli* is about the first to unfold its blossoms, the vivid crimson hue of which renders them very conspicuous. Then comes the orange-scarlet *N. corusca*, which often flowers well into November. Besides these there is the slender *N. flexuosa*, a very free flowering kind, the blossoms of which are of a beautiful rosy magenta colour. There is also a large variety (major) of both *N. Fothergilli* and *corusca*, and the Guernsey Lily (*N. sarniensis*) must not be omitted.

As regards culture, after they have done flowering they should be kept moderately moist in a greenhouse temperature until spring, as they grow freely at that season, and as soon as the bedding plants are placed outside the Nerines may be treated in the same way. The best place is the foot of a hot sunny wall or some such situation, where by midsummer they will have got thoroughly ripened, up to which time they must be kept watered, but afterwards more sparingly. Under this treatment they will commence to throw up flower-spikes about August, and the thorough ripening of the bulbs will insure plenty of bloom.

Like many other bulbs, the Nerines dislike having their roots disturbed, and never flower so well as when in a mass that has been in the same pot for years. If it is necessary to repot them it should be done as soon as possible after flowering, and the soil best adapted for them is good loam mixed with a little well-decayed cow manure and sand sufficient to keep it open. H. P.

**Colouring Dracænas.**—A useful aid in increasing the colour in *Dracænas* is crushed bones in the compost in which they are potted, and a few larger ones used instead of crocks for drainage. To colour *Dracænas* well, it is, as mentioned in *THE GARDEN* (p. 452), necessary to grow them near the glass, but where grown side by side, and under exactly the same conditions, it will be found that where bones have been employed the plants are better coloured than where they are not so treated.—H. P.

**Fuchsia Edelweiss.**—Messrs. Hender, Plymouth, send us flowers of a new seedling *Fuchsia* they intend to put into commerce in the spring. The flowers are unusually large, the corolla white and very double, and with bright red sepals. They thus speak of it: "We have grown it beside the best double whites in cultivation, including Grand Duchess, Miss Lucy Finnis, Snowcloud, &c., and find it surpasses them all both in the quality and quantity of bloom, while the habit is splendid, bearing four to six flowers at a joint. The flowers now sent are rather below the average size."

**Pyramidal Celosias.**—The most elegant of all the pyramidal *Celosias* is a variety that Mr. Crump has grown for some time at Blenheim, and which I have seen during the past autumn in beautiful form at Heckfield and Maiden Erleigh. The strain is remarkably true; each plant is of a handsome pyramidal form, the branches projecting from the stem at right angles, and not coming up in a bunch, as is the case with so many plants raised from Continental seed. The plumes or heads of bloom are all of a deep magenta-crimson hue, and spear shaped or pointed. The heads endure well, keeping bright and fresh for four months at least. I might say that the *Celosia* would prove a charming plant to furnish cut material, but it would be a sad thing to mutilate such elegant inflorescence and thus spoil the plants. It is un-



fortunate that it see is very sparsely; indeed those who grow it find it difficult to get sufficient seed for their own sowing. For this reason it can never become abundant.—A. D.

**Chrysanthemums from seed.**—In answer to a question (p. 456) in reference to this subject, allow me to say that Chrysanthemums are very easily raised from seed, provided it is properly ripened, which in our dull climate I have never known it to be. Chrysanthemum seed grown in the south of Europe and North Africa is, however, readily obtained from any of our leading seedsmen. It should be sown early in February in a gentle heat, in which it will soon germinate; when the young plants are up and fit to handle they should be pricked off, and may then be treated in all respects the same as plants raised from cuttings. If they push up a mass of weak shoots they must be removed in order that the energies of the plant may be concentrated in the main stem, or it will be impossible to form any correct opinion of the flowers as they open. Apart, however, from the interest attached to raising and flowering seedlings, it is scarcely worth the trouble to grow Chrysanthemums in that way, for, as a rule, the flowers are but poor and semi-double. It was, I believe, the practice of Mr. John Salter, to whom we are indebted for many of our best varieties of Chrysanthemums, to grow his plants for seed at Algiers, where they ripened seed perfectly, but vast numbers were grown compared with what were selected as being worthy of cultivation.—H. P.

**Single Dahlias under glass.**—Some weeks ago one of your correspondents thought we had coddled our single Dahlias by keeping them in pots, but I was hardly of his opinion then and I am less so now. Outside Dahlias have all vanished weeks since, and had all our single varieties been in the open the supply of flowers we like so well would not have extended to November, but at the present time we are cutting fine blooms almost daily from our pot plants in a vinery, and next year we will grow more of them in that way to come in about this time. The succession of bloom which we have had from them would compare favourably with that produced by any other plant.—CAMBRIAN.

**Solanum jasminoides.**—Amongst the many good old plants that are daily passed by unheeded may be mentioned this fine old climber. Planted out as it is here in a bed of good rich loam and allowed plenty of head room, it may be had in flower quite six months at a time, and by pinching it can be had in flower at Christmas, when its lovely white blooms will be found invaluable in a cut state, being light and elegant in appearance.—H. CARTER, *Donnhill, Co. Derry*.

**Trichinium Manglesi in peat.**—If "J. C. F." (p. 456) will plant this in peat and broken crocks, about equal parts, I think he will succeed. I have a plant at this moment bearing nine heads of bloom, which have been open since June, and which look as fresh as ever, except the earliest, which have now fallen. The plant always looks shabby, as I have seen it. Keep it in a cool house.—A. RAWSON.

## SHORT NOTES—INDOOR GARDEN.

**Croton Hawkeri.**—In a good collection of Crotons in Messrs. Ker & Son's nursery, Aigburth, Liverpool, this seemed distinct and worthy of attention. The leaves are nearly white, and when in good form almost transparent. It furnishes itself well with branches, also a great desideratum.—J. S. T.

**Dracæna Lindenii.**—This, when better known, will be a desirable acquisition. The leaves are banded with white and green alternately, and the plant has a graceful drooping habit. I lately saw fine plants of it at Messrs. Ker & Son's nursery, Aigburth, Liverpool.—J. S. T.

**The Lattice plant.**—We have never seen better plants of this than are now in the Dublin College gardens. Mr. Burbridge attributes his success in part to keeping the pans shaded.

## EDITOR'S TABLE.

**ANDRÆ'S ANTHURIUM.**—Of this singular and showy plant Mr. Fowler, of Ashgrove, Pontypool, sends probably the largest bloom yet produced in this country. The measurements of the spathe are  $6\frac{3}{4}$  in. in length and  $5\frac{1}{2}$  in. in width. Large as this one is, however, Mr. Fowler expects to obtain one even larger, as another leaf has appeared on the plant larger than that from which the flower sent was produced.

**ORCHIDS FROM ASHGROVE.**—From Mr. Fowler come also *Lælia elegans* and its white variety, which is by far the best, the sepals being pure white, while the lip is of the richest amethyst. Flowers of *Oncidium Rogersi* with lips well high 2 in. across show how finely this superb autumn Orchid is grown by Mr. Fowler, a remark also applicable to the blooms of *Masdevallia Harryana*, which are of the richest carmine.

**THE WINTER DAFFODIL.**—A pleasant reminder of that patriarch of our hardy plant growers, the Rev. H. T. Ellacombe, of Clyst St. George, in the shape of two forms of *Sternbergia lutea*. This plant bears the above quaint and not inapt English name in Parkinson, and is a charming object on sandy and gravelly soils at this season. It is not often seen grown into good strong tufts strong in bloom, especially in the London district.

**CATTLEYA GIGAS.**—From Mr. Fowler comes also a couple of blooms of this large and lovely Orchid as fine as we have ever seen it, and representing an uncommonly fine variety. The colour of the broad shallow lip is very rich, and the broad crisp-edged sepals are of a fine and delicate mauve. It is one of the noblest of Orchids.

## TREES AND SHRUBS.

### RHODODENDRONS IN AUSTRIA.

In what places or districts in Austria do Rhododendrons and other so-called American plants stand the winter without protection? R. W.

[Rhododendrons are seldom met with out of doors anywhere north of the Tyrol, and even in that province only in the more southerly and warmer valleys opening toward the south. Rhododendron hirsutum and its varieties are found on the mountains in Styria and the Tyrol, covering the rocks in the form of low creeping bushes, rising seldom more than six inches in height. The blooms find their way into the country markets, and are much sought after by the lowland people, going under the common name of "Alpen Rosen." *R. ponticum* will not exist as an out-of-doors plant, except under the protection of a roof of reeds, covered with fern or leaves or some such material, in any part of Upper or Lower Austria, Styria, Moravia, Bohemia, Galicia, or any part of Hungary north of the Save River. Even with protection it loses its flower-buds and some of its foliage, and is usually a miserable object, not being capable of bearing confinement nearly so well as the Laurel, Sweet Bay, or Aucuba. *R. catawbiense* is reputed to be hardy, but in practice I did not find it to be so. The hybrid Rhododendrons, the pride of so many English gardens, can only be grown as house subjects; of these good representative collections may be found at the leading nurseries. *Ledums*, *Kalmias*, *Andromedas*, *Menziesias*, and *Gaultherias* are also unknown as out door plants, and they are seldom to be found indoors. *Oxycooccus macrocarpus* is much grown, or rather grows wild in the forests all over the more northern provinces, where the soil suits it. Its berries are preferred to Red Currants as a condiment with game. Some varieties of *Vaccinium* may also be found growing wild. It is perhaps as well that these large-leaved

evergreens, at least in so far as regards the Rhododendron tribe, do not thrive, for nothing would impart so depressing an aspect to garden scenery as the drooping, frozen foliage of these plants during the six months of winter weather, a winter without a single day's general thaw.—SYLVESTRIS.]

**Old Elms.**—These, like all other old trees, add much to the beauties of our parks and pleasure grounds. But when they get very old they are dangerous near our principal buildings. Some time ago, when carrying out some improvements here contiguous to the house, I was anxious that some decayed Elms should be felled and some more serviceable trees planted in their stead; but as their removal was objected to, we planted our shrubs and finished our alterations, and all went well for some years, until the late gale came, breaking boughs and overturning trees in all directions, and amongst the rest one of the Elms just mentioned, containing upwards of 150 ft. of timber. Had it been taken down by practical woodmen it could not have been felled better, but it played sad havoc among many valuable shrubs. Upon one side stands the church, with buildings upon two other sides, and had the gale carried it or blown it upon any of these three sides there is no telling what might have been the consequence. Upon examination its roots were found to be thoroughly rotten, with the exception of three or four inches of an outside shell and a few surface roots, and I have no doubt that the majority of them were Ivy roots, as the bole of the tree was encased in Ivy, which must have been the means of keeping it in its right position for some time. Where Elms or other old trees are standing close to buildings they should be examined, which is easily done by probing them at the bottom, as I promulgated some time ago.—J. MILLER, *Clumber*.

**Cotoneaster Simmondsi.**—I should advise Mr. E. Jackson (p. 433) not to plant this on a north wall; I have tried it, with but poor results; the growth is abundant, but the great attraction of this plant—the berries—are few; better keep to *C. microphylla*, and with it plant *Jasminum nudiflorum*. The beauty and harmony of contrast of colour between the dark green leaf of the *C. microphylla* and the crimson berries and the yellow flowers of the *nudiflorum* cannot at this season of the year be surpassed. The colour of the berries of *microphylla* I consider much superior to that of *Simmondsi*. I may add that many years since I planted in my garden a very large number of *Cotoneaster Simmondsi* in all kinds of situation; the bulk of them have borne berries this year exceedingly well, but I have quite determined that the right place for it is the wild garden, and let alone, to grow and ramble in any way it pleases; then you obtain the right effect; but to berry well you must give it plenty of light, not plant it under trees.—K. K., *Tadbury, Devon*.

**Fungi on trees.**—Large descriptions of fungi grow on fine old Oak and other trees. They are quite hard in dry weather, but soft in wet. Is it well to take them off? and is there any remedy for them?—SUBSCRIBER. [The growth of fungi on trees is a sign that some decay is in progress. I fear there is no specific remedy. The fungus growths should be destroyed as fast as they appear on the trees.—B.]

## SHORT NOTES—TREES & SHRUBS.

**Large trees near houses.**—The Rev. A. C. Rowley, vicar of Sutterton, recommends those who have trees towering above their houses to see to their condition. An immense Poplar dashed through his dining-room window during the storm last week, and similar catastrophes are reported from other quarters.

**Yellow-berried Hollies.**—These are very attractive now in the College Botanic Gardens at Dublin, where there are many trees of them. It is a pity such a good native evergreen is not more planted.—W.

**Eucalyptus leaves.**—M. S.—There is no fungus on the leaves sent. The spots are the glands natural to the plant. The shoots look as if they had been injured by the severe frost that occurred a week or ten days ago.—F.



## NOTES OF THE WEEK.

**THE SOCOTRA BEGONIA** (*B. socotrana*).—Of this beautiful new species there are now some fine examples in full flower in the Royal Exotic Nursery, Chelsea. The plants there show the extreme floriferousness of the plant even more than those at Kew mentioned a short time ago. The rich rosy pink hue of the symmetrically formed blossoms and the handsome shield-shaped foliage render it an extremely attractive plant, and one that must inevitably become popular.

**SONERILAS**.—These are generally grown for the beauty of their foliage, but they are nevertheless very pretty at the present time when studded with lilac or mauve-coloured flowers, which, being just elevated above a setting of beautiful marbled and mottled leaves, have a striking effect. To have this they must, however, be grown in masses, not singly, as the flowers individually are scarcely sufficiently showy to attract attention. For the growth of these and similar surface-rooting subjects, pans are better than pots; the soil, too, should be open and porous and the drainage good.—H. P.

**JACQUEMONTIA AZUREA**.—This is the name of a pretty climbing plant, flowers of which were sent to us last week by Mr. Spinks, Royal Nurseries, Edgbaston. It is a Convolvulaceous plant, having slender stems and heart-shaped leaves, and dense clusters of small azure-blue blossoms about the size of a shilling. Mr. Spinks speaks highly of it, and considers it a very useful winter-flowering plant. It is a native of Brazil.

**WINTER ORCHIDS**.—The following Orchids are now in flower at Fernfield, Bridge of Allan, viz.:—

Masdevallia	Epidendrum sp.
amabilis	Oncidium
Davisi	tigrinum
ignea	Forbesi
Chimera Wallisi	varicosum
Lindeni	cheiroporum
hella	crispum
Veitchiana	serratum
Veitchiana superba	Schlimi
melanopus	Lelia
Odontoglossum	autumnalis
grande	elegans
constrictum	Lycaste
Uro-Skinneri	Skioneri
nebulosum candidulum	Ianipes
Rossi majus	Cecolyne
bictoniense	speciosa
Alexandre	Zygopetalum
Londesboroughianum	Mackayi
Maxillaria	maxillare
grandiflora	Neottia picta maculata
lepidota	Dendrobium
picta	superbiens
Pleione	bigibbum
lagenaria	chrysanthum
Wallichiana	Phalenopsis
maculata	Lowi
Mesospinidium vulcanicum	amabilis
Miltonia	Cattleya
Moreliana atro-rubens	Loddigesii
Clovesi major	marginata
Sophranitis	labiata (true)
cernua	Aerides
grandiflora	Reichenbachii
purpurea	Cymbidium
Cypripedium	giganteum
insigne	Vanda
venustum	Bensoni
Harrisianum	multiflora
Epidendrum	cœrulea (Sir Trevor Lawrence's fine variety)
rhizophorum	
erectum	

**HELLEBORUS NIGER VAR. ALTI-FOLIUS**.—The blossoms of this large and invaluable variety of the Christmas Rose already form quite an attractive feature on the rockwork and other parts in the nurseries of Messrs. James Backhouse & Son, at York. It is readily distinguished from the ordinary form by its being larger in all its parts, and by the darker green of the foliage, purple mottled stems, and also by the flowers being externally of a delicate rose, but of the purest snow-white when fully expanded. It is worthy of note that its season

of flowering is considerably longer than that of *H. niger*—commencing as it usually does about October, and continuing to put forth its lovely flowers until February or March.—R. R.

**AMPELOPSIS JAPONICA**.—We are indebted to Mr. Ambrose Balfe, secretary of the Royal Horticultural Society of Ireland, for a brilliant leaf of this shrub, which he says is very beautiful in the colour of its foliage, a fact that is verified by the handsome leaf, consisting of three leaflets, now before us. It is a shrubby species as yet little grown.

**PRIMULA CHISWICK RED**.—This variety of the Chinese Primrose is well named, and is in all respects an excellent Primrose. Its flowers are crimson-scarlet, the brightest I have ever seen, and they have a clear, well-defined yellow eye, which gives them a very striking effect. Some of them, too, are beautifully fringed.—H. H.

**DORYANTHES ENCELSA**.—Of this noble Australian plant there is a grand specimen in the temperate house at Kew, developing a fine spike of bloom, which when fully grown will be many feet in height. Those who have never seen this wonderful plant would do well to see this one, which will shortly be very attractive.

**ANEMONES IN WINTER**.—"St. Bridgid" brought me the finest lot of Anemone flowers I ever saw last Friday from Howth. I have seen nothing finer in April, and at this dull season they are especially valuable, their brilliant tints quite throwing Chrysanthemums into the shade.—F. W. B.

**NEW COLEUSES**.—We understand that the new varieties of Coleus raised by Mr. King, of Wray Park, Reigate, and certificated by the Royal Horticultural Society, will be distributed by Messrs. James Carter & Co., High Holborn.

**CATTLEYA LABIATA**.—A large and extremely fine plant of the true variety of this Orchid is now in bloom in the College Garden at Dublin. An inferior and wholly different plant often represents this in collections.

**NEW PEAR**.—The new Pear, a seedling from Marie Louise, to which a first-class certificate was awarded at South Kensington on October 11, has been named Welton Beurré by Col. Trevor Clarke, the raiser of it.

**THE "IRISH GARDENERS' RECORD"**.—We understand this journal will now become a monthly.

## THE FLOWER GARDEN.

## SOIL FOR ALPINE PLANTS.

THE letter of "Canonicus" and several others which preceded it have opened out a most interesting subject for all lovers of alpine plants. No one could doubt for a moment the influence of soil on the well-being of many among them, and I am sure we shall all look forward to the result of Mr. Whitehead's costly experiments and thank him for the trouble which he is willing to take. I hope the conclusions at which he arrives will be carefully registered, and then our gain will be great. But while I say this about some of the more difficult and the scarcest of alpine plants, I have a strong conviction that there is a great deal of truth in what Mr. Jenkins has said about the others. The majority of them, as it seems to me, stand in no need of such elaborate care. I should quite endorse Mr. Jenkins' words when he writes (p. 367), "My experience of alpine plants and the soils best suited to them is that nine-tenths of them will succeed in any ordinary well-drained soil which is composed of loam of ordinary character, leaf-mould, and sand," and I can follow every word of your editorial note which runs thus (see p. 341): "The importance of a very interesting subject may be exaggerated. In Nature many plants are found wild on certain soils, and reasons may sometimes be found for their presence on soils of a certain character, but they are not always connected with the soil, but with climate, altitude, and the presence or absence of other kind of vegetation." All this I believe to be true and an exact representation of the case. I used once to know a great part of Backhouse's excellent

cultural directions by heart, but I have come now to think that I can do without half of them. And this is no fancy which has not been put to the test.

I have noticed that such plants as *Omphalodes Luciliae*, *Gentiana verna*, *Polygala Chamæbuxus purpurea*, and many others that might be named do almost as well in one border as in another. Their preferences can perhaps be detected, but this is all that can be said about the matter, and there are some cases which are really strange to a degree, e.g., as one of your correspondents pointed out some time ago. Calcareous soil is recommended by one known authority for *Lewisia rediviva*, and a peaty soil is recommended by another. What explanation is possible for such a discrepancy as this, except that the plant is not at all particular about the food with which it is supplied? *Gypsophila paniculata* is another curious instance in point. It completely belies the Greek derivation of its name, and will revel in a garden in peat with as much happiness as if it were sending its large tough roots deep down into the chalk. I know of no explanation to offer for this, but I am quite certain that a peaty soil is very acceptable to it. Under such a condition as this it has year after year covered a large piece of ground for me with its feathery sprays. Or take one of the *Rhododendrons* which "Canonicus" has mentioned (I do not grow the other); I have moved *R. hirsutum* from one border to another, and from one kind of soil to another without any appreciable difference in the results.

I have studied Mr. Whitehead's list of plants and soils (p. 341) with the greatest attention, and while I should agree with him very well about many things, there are others where my experience differs from his; e.g., he says, "Grow *Epimediums* in loam," and the editor of *THE GARDEN* writes (p. 118 of hardy plants) "always in peat." I think if an *Epimedium* had to choose for itself it would say, "I can put up with anything; but if you ask me the question, I have a slight inclination for peat." *Petrocallis pyrenaica* has a liking for limestone, as Mr. Whitehead suggests, but it ought to be grown in loam if Backhouse is right. I have had two or three patches of it here for several years, and one of them attracted your attention when you paid me a visit. I must confess that I am sceptical about its having any great preferences. I think it takes very kindly to almost anything with which it is treated, and several other instances of the same sort might be given. Of course, this view of the case may be harped upon too much, and wrong conclusions may be formed from it, but whenever I find discordant opinions about soil for a plant I write it down in my mind as not exacting and easy to manage. It is at any rate clear that its tastes are very variable; and when I have a very difficult subject to tackle, I try the whole list of prescriptions one after another, and as often as not the least likely one suits it. There are some alpine plants, no doubt, that are very exacting and true to the requirements with which they are credited; e.g., the *Edelweiss* has an unmistakable liking for calcareous soil, and Mr. Whitehead has found out the secret of growing *Gentiana bavarica* in a remarkable way; but there are numbers of them, I must believe with Mr. Jenkins, that will put up with any ordinary practice and do well if they are only planted in the ground. I do not think we can argue from their manner of growth in the Alps or the Himalayas as to what they will do in our hands. Cultivation, restraint, and altered circumstances seem to give them a new nature altogether, and they do not mind—in some cases they may be better for it if their food has been changed as well. This is only what we find to be the case with many domesticated animals.



But there is one thing which I venture to think is of importance in the cultivation of alpine plants beyond everything else, and that is situation. It must be throwing labour away to try to grow many of them in low-lying places. They imperatively demand a bright, clear atmosphere overhead, that there should be no mists or fogs often hanging about them, and that they should have plenty of sunshine. I know this for a certainty from what I see before my eyes. The top of a high hill, where the air is salubrious, and there are no smuts falling about the place, and no smoke is brooding over it, where the water runs off very quickly is the spot they delight in, and the importance of soil is quite secondary to it. *Gentiana verna* grows readily with me on the top of this hill, and blossoms most beautifully in any soil that may be named (except, perhaps, clay), but it refuses outright to exist within the precincts of the borough of Ryde. A friend of mine, who is no novice and very fond of her plants, has tried it over and over again in her garden and it has always dwindled away. I do not suppose that at this moment there is a bit left of it with her. This lady has coaxed it and humoured it to the best of her power, but there has been no response to her pains; and though the soil has been changed and all sorts of means have been tried, there has been failure with all of them.

The explanation I feel sure must be found in situation alone. During the next six weeks or two months we can look down from the top of this hill on the fogs and the vapours in which the town is enveloped; and though there is nothing to hurt men and women during the winter in Ryde, there is far more humidity there than alpine plants can put up with. Situation far more than soil seems to me to have value. This is probably the reason why Mrs. Davidson reigns supreme with her fine *Aquilegias*. There cannot be anything I should say very remarkable about the soil at Ashmore, but they like the breezy nature of the place, and perhaps the cold strengthens them. So also it is on the Cotswold Hills. Though I have never been fortunate enough to visit his garden, I have been frequently told that Mr. Atkins is one of the most successful growers of alpine plants in the country. Or, take the other side of the question, I have heard Canon Ellacombe say over and over again, "This plant will not do with me." "Another dies in the winter." "That one I cannot manage," &c. Now it is not to be supposed that such a master of the art of gardening as he is would not make any alpine do with him if the thing could be managed. He has soils and exposures, and everything a plant wants at his fingers' ends, and could easily bring the right food to assist it, and yet with all its wealth of herbaceous plants and of shrubs, and with its splendid trees, Bitton is not remarkable for its representation of the flora of the Alps or other high mountain ranges. In like manner there must be great difficulty with alpine plants in the Royal Gardens at Kew. All along the valley of the Thames it must be a heart-breaking business to try to keep some of them; I should think it only can be done by constant renewal. Mr. Ellacombe told me the other day when he was here that he could not get on with such a plant as *Onosma taurica* at Bitton, and Ware is completely baffled by it at Tottenham, but *Onosma taurica* where it likes the situation grows and flourishes like a weed. It needs no attention, and simply takes care of itself. *Ourisia coccinea* is another plant of just the same sort, and even *Saxifraga Burseriana* will die in the lowlands, which it never does on the top of a hill. The same sort of thing might be said of a great many more alpine plants, but the conclusion I have come to is that, given the right situation, alpine plants are not especially difficult and

exacting in their requirements, but if the situation is wrong they will not put up with anything in its place. Soil, and rockwork, and everything else are only secondary to it. They can bear with the absence of the latter, but they terribly resent it if there is anything wrong with the former.

H. EWEANK.

P.S.—I see in "Hardy Plants" the prescription for *Petrocallis pyrenaica* is moist sandy soil; in "Alpine Plants" it is sandy, fibry loam. Do not these many differences show that almost anything will do for it if the situation be right?

#### GOLD-LACED POLYANTHUSES.

MR. BARLOW is quite right in supposing that I only saw *Sunrise* once, and then only for a short time when on the exhibition tables at Manchester, and he may fairly conclude that I had no means of forming a true estimate of its value. I, however, discussed the merits of the various new seedlings with three well-known Lancashire florists, two of whom are frequently to be found judging in the *Polyanthus* class, and it was by the help of these well-qualified friends that I came to the conclusion I did upon the two *Polyanthuses* in question; but for all this it is quite possible that both *Sunrise* and *John Bright* are better flowers than even qualified judges suppose. I thought I had given *Sunrise* a very high character, and intended to do so, but it appears fell far short in my estimate. That it is behind *George IV.* and *Prince Regent* I feel certain, and am not alone in this opinion, as above stated, but notwithstanding all this it is a first-rate *Polyanthus*—the best new variety we have seen for years.

Brockhurst, Didsbury. WM. BROCKBANK.

**Hardiness of *Lobelia fulgens*.** This plant was without exception the best autumn flowerer we had till the last three years; now not one plant is left. A protection of coal ashes tried one winter did more harm than good. In a garden near here, but within two miles of the sea, much of it has survived the last three exceptional winters out-of-doors. Here, within three miles of the sea, it used to grow without protection, being divided and replanted in rich earth every spring. The flower-stems, I think, were often over 3 ft. high in autumn, forming a mass of scarlet and brown, more brilliant than any scarlet *Pelargonium* bed. Although hardy in a few favoured spots, such as that mentioned in last week's GARDEN, it would in most cases be well to keep a reserve stock in a cold frame, and not to trust too fearlessly to its power of surviving hard frosts.—C. M. O.

**Hypericums.**—Mr. Gumbleton and I, are in reality at one as regards *H. oblongifolium*, *uralum*, *patulum*, and *pseudo-patulum*, if I may use the term to designate that which Mr. Gumbleton would have most appropriately named *Oudinense*. My contention, as intended and as stated in the body of my notice, was not that *patulum*, true or false, was the same as *uralum*, but that *patulum*, not being in cultivation, was incorrectly given as one of the finest St. John's Worts now in our gardens. The misunderstanding, however, has elicited the history of *pseudo-patulum*; and it has also called attention to another superior hybrid, which, thus noticed, may in time be more generally distributed.—T. H. ARCHER-HIND, South Devon.

**Kales for flower beds in winter.**—I note that a correspondent recommends the ornamental varieties of these for flower beds in winter: I therefore relate my experience of the two seasons we so used them—now ten or twelve years ago. The records in the gardening journals of what the late Miss Hope had done in this way so attracted me, that the first year, at least, half the garden was filled with Kales of every hue, coloured and parti-coloured, from dark purple to white. They got well into growth about the end of December, and began to look so gay that I quite forgot the mental grumblings I had experienced at their delayed effectiveness; but, alas, my enjoyment was of short duration, for a sharp frost setting in early in the new year, rabbits driven to

desperation by starvation one night discovered my Kales, and, notwithstanding their ornamental character, all but cleared the lot. Such a mishap as this being preventable by fencing out the rabbits, I refused to think that I could not yet use the Kales. I therefore determined to give them another trial the following year, but on the very threshold of the attempt I was again foiled, as my stock of seedlings was nearly all of one colour—not unlike bad-coloured red Cabbage. I, however, made the best selection I could, but necessarily in consequence of want of variety, they were used much more sparingly than the previous year, and as matters turned out most fortunately, for this time the frost was unusually severe at the end of November, and continued during the first fortnight in December; then came a thaw, and with it such a stench of rotten Kales that the windows of the mansion were forbidden to be opened till the Kales were cleared out, the result being that I felt as crestfallen as the poor Kales themselves would have been had they been capable of understanding how ignominiously they were turned out of the flower garden, and that for ever so far as I am concerned.—W. H.

**A White Phlox.** called *P. Drummondii* hortensiflora alba has just made its appearance. The rose type of this Phlox has become a general favourite on account of its dwarf compact habit and large umbels of flowers appearing in the greatest profusion; it ranks beside the *P. grandiflora splendens* foremost in the almost innumerable shades of colours amongst Phloxes. To these advantages the new variety adds the merit of having pure white flowers equally as large and abundant as those of the type. It distinguishes itself from the dwarf white-flowering kind *Snowball* (*nana compacta nivea*) by its unusual profusion of bloom, its satiny-white colour, more robust growth, and greater hardiness. According to the raisers, this is the showiest and most beautiful pure white Phlox introduced. It originated with Messrs. Haage and Schmidt, Erfurt. It is greatly to be desired that nurserymen and seedsmen would cease giving awkward Latin names to varieties like this, which should be distinguished by some short non-Latin name. The two Latin names that satisfied Linnaeus should be sufficient for the seedsman! His varieties he can name as fruits and flowers have been so often named.

**Tuberous Begonias out-of-doors.**—I am inclined to believe that, of the several reasons assigned by Mr. Fish for my failure in planting out, the one of planting out too early is the most likely one. They were turned out the second week in May, and I think it very likely that some cold nights which we had about that time retarded them. If I plant out again I shall not fail to profit by Mr. Fish's remarks, and wait till the end of the month. By-and-by we may have a hardier strain of these plants, as they seem to form the special care of many skilful growers. It appears to me that if the wood could be got even a very little harder than it is they would withstand a much lower temperature than they now do. I do not see at present any reason for changing my mode of treatment. After the plants fail from the cold of autumn I cut them over, sink the pots in a corner of the greenhouse, and cover them with ashes. As soon as they break in spring they are re-potted, after which they grow very fast and soon flower. I have now the same tubers which I had three years ago, and every year they have greatly increased in size and beauty. I expect next year they will require very large pots. I do not know the limits as regards age of the Begonia, but from that point of view they have greatly the advantage over *Fuchsias*. We are obliged to secure new plants every year of the latter; whereas *Begonias* give us no trouble whatever.—W. T., Dorset.

**Herniaria glabra.** I am thinking of using this as a substitute for *Mentha gibraltaria* for carpet bedding. Does it increase fast? and does it require to be taken up yearly and housed? or is it perfectly hardy?—J. C. T.

**Saxifraga Hirculus.**—Mr. E. Jenkins (p. 469) is in error in assimilating this *Saxifraga* with *S. hieracifolia*. No two plants in one family could be farther apart than the two just named.—T. WILLIAMS.



**HELIANTHUS MULTIFLORUS MAJOR.**

ONE of the most popular of hardy perennials and one that is met with more frequently than any other about London is the double form of *Helianthus multiflorus*, a very handsome plant that scarcely refuses to grow anywhere. Like many other popular double flowers, the single or original form has been neglected; hence it is not

high, and when fully grown forms a dense bush. It commences to flower at midsummer and continues till late in the autumn, producing during that period a large quantity of bloom. It is a fine subject for planting in bold masses in borders, or associating with tall plants in semi-wild situations, as it is well able to hold its own amongst strong growers. It is also one of the

dents still delight me. *Tritoma grandis* (syn., *glaucescens*) is in full flower, and, weather permitting, will brighten the garden up to Christmas. A few days later in blooming than the common *T. Uvaria* and of less vivid colouring, it has yet the great advantages of a hardier constitution and a much more protracted period of flowering. Torch after torch of bloom lights up these dark days. Plucked with a somewhat short piece of stalk as the first



The Larger perennial Sunflower (*Helianthus multiflorus major*).

often met with, but, as in the case of the single Dahlia, many prefer the single to the double kind. The typical flowers of *H. multiflorus* are graceful and pretty, but a far nobler flower is that of the major variety, which was sent by Mr. Burbidge from the Trinity College Botanic Garden, Dublin. This, as may be seen by the annexed engraving, is a very handsome flower, and, being of a clear yellow colour, it makes an extremely showy plant. It grows from 4 ft. to 6 ft.

best plants for town gardens, as it is capable of withstanding the ill effects of smoke and dust.

W. G.

**AUTUMN FLOWERS.**

"G. H." (p. 449) surpasses me in most flowers. I hope, however, to be more fortunate than him as regards Mignonette, and not to be without an outdoor picking even on New Year's Day. Two very hardy flowers not mentioned by other correspon-

gles open it is admirably adapted for vases, in which it will continue to bloom for two or even three weeks. *Eucomis punctata* has like habits, and is a capital companion for the above; it still blossoms, having large rocket-like spikes, thickly starred with flowerets which in colour, shape, scent, and honeyed taste greatly resemble *Hoya carnosa*. The *Eucomis* seems perfectly hardy in any position. The unprotected plants with north and west aspects are perfectly healthy, but make little increase, whilst a third plant with a south aspect



sheltered by shrubs from the north wind, and its head covered with ashes during the winter, year after year pushes up strong blooms about the end of September. This year this plant bears five heads of flower, averaging 2½ ft. in height, of which fully one half consists of blossoms. A rosette of Pine-apple leaves crowns the spike. Both leaves and flower-stems are beautifully mottled. Ribbon Grass, having been cut down on coming into bloom, is still as distinct in variegation as in early spring. NORMAN.

### FLOWER BED MAKING.

If we grow hardy flowers, the first step towards having good flowers is to have good flower beds, and in many gardens the making of new flower beds is now going on. This is comparatively easy work where the natural drainage of the soil is good, but it is absolutely essential in all soils that the roots of trees should be kept out of the bed, or the better the soil you put the poorer they will make it, as it will attract them more. In clay soils the making of flower beds requires more careful attention. The soil of this garden is stiff clay. Before I came nothing had been done to drain the beds, and hardly any flowers did well anywhere, but where I have renewed the beds the nature of the garden seems entirely changed, and I have gained some experience in bed making. By the way, the making of flower beds is not the only bed-making to which I have been accustomed; for two or three years of the time during which I slept in the famous long chamber of Eton—now no more—I had every night to make not only my own bed, but the bed of a sixth form boy, my master. The regulation bed-making for the seventy beds consisted merely of putting straight the worsted rug, which served as a counterpane, and tucking the edges under the thin straw mattress, through which we could easily count the oak ribs of the bedstead on which we lay. This was more than forty years ago, and Eton long chamber in those days was a rough nurse, but perhaps I can make flower beds better now than if I had been reared more delicately.

I have just finished re-making a flower bed which has occupied me and three men and a horse and cart two days. It is a serpentine bed on a lawn, and is 48 ft. long and 6 ft. wide. The bed had about 1 ft. of vegetable earth over the clay. Of course nothing did well there. The *cæca spiramenta*, as Virgil neatly calls them—invisible breathing holes of the soil—were all stopped with stagnant wet. An annual top-dressing of leaf-mould persuaded a few plants to flower, but it was curious to see how their roots kept to the surface, and avoided the sour, waterlogged soil. I first dig out 1 ft. of soil and pile it at the side; I then cart away 2 ft. of clay, and of this "spoil," as engineers call it, I make a bank where it is most wanted to break the west wind, and find that when it has been moved and raised trees and bushes grow on it pretty well. The bottom of the bed is sloped evenly, and one or more drains of agricultural pipes are carried from its lower side to the most convenient outfall. The beginning of these drains is well packed with broken bricks or stones to ensure their remaining open. Next we want drainage for all the bottom of the bed; and lucky is the country house about which there cannot be found several cartloads of indestructible materials which the owner would rather were under ground than above, and lucky is the opportunity for utilising them. Therefore I collect them all, champagne bottles, broken crockery, worn out coal-scuttles, and old shoes. We wish to keep cavities above the clay, and pile in such materials as I have named to a depth of about 1 ft. Above this is put 1 ft. of soil we took from the top; we now have 1 ft. to fill over about 32 square yards. Making allowance for the sink-

ing of soil into the drainage, this will take about twelve cartloads. Let two be of sand, the best we can get, two of leaf-mould, and the other eight choice loam.

I have fine old pastures near the house which have been grazed for at least 100 years. I take off the turf about 3 in. in thickness and dig out the soil—all fibre—to a depth of 9 in. more. It is ready for use at once, and contains a store of fertility which farmers and gardeners and agricultural chemists know how to appreciate. This plan is in several ways better than laying the whole of the top spit together in a heap for a year before using it. In the first place it saves much trouble; in the second place the bare surface which you rob is again relaid with the turf you took off instead of becoming a little wilderness of Thistles, Docks, and Sorrel. When you have replaced the Grass be fair to it and manure it, and do your best to make up for the robbery you have committed beneath it. Whether previously laid up or used as soon as got, this fibrous loam will attract for a year or two the beetle of which the larva is called a wireworm, and you will have to exercise your ingenuity against them, but the bed will be an excellent one, and will grow almost any plants capable of enduring the climate.

Edge Hall, Malpas. C. WOILEY DOD.

### WINTER DAFFODIL.

(STERNBERGIA.)

ONE of the few hardy flowers that enliven our borders in October and November is *Sternbergia lutea*, or Winter Daffodil, as it was called in Parkinson's time. It is a hardy perennial bulbous plant of the *Amaryllis* family; a native of Spain and other southern parts of Europe. The typical plant is tolerably common in gardens, but the narrow-leaved variety (*angustifolia*) is not so often met with, and, moreover, it is a more desirable plant, judging by the flowers sent us by Mr. Archer-Hind from his garden at Coombefishacre, Newton Abbott, of which the subjoined is an illustration. With regard to the narrow-leaved variety, Mr. Archer-Hind says: "I know little of it. I got it from the late Mr. Chater, of Cambridge, who had so many good things. The ordinary *Sternbergia lutea*, formerly *Amaryllis lutea*, and now by some called *Oporanthus luteus*, was introduced from South Europe in the 16th century. *S. angustifolia* differs from *lutea* not only in its narrower leaves and rather wider and brighter petals, but in a series of years I have found that, except on one occasion when both opened on the 30th of September, *angustifolia* flowers from a week to a fortnight later than *lutea*. This season *lutea* opened Sep. 26; *angustifolia*, Oct. 6." It is perfectly hardy and easily grown, succeeding best in a moderately rich moist soil, and flowers most satisfactorily when the roots have been allowed to remain for some years undisturbed in the same spot. It is increased readily by means of offsets. W. G.

***Tropæolum speciosum* in fruit.**—Respecting this plant, have you observed the loveliness of the seed vessels which succeed the flowers? The capsules can only be compared to cornucopias of jasper, wherein nestle from three to four bud-like seeds of *Lapis lazuli*—at least that was so last year. This season I fear seeds will never ripen; even those of 1880 failed to germinate when sown. I am told that a good and sure way to propagate this glorious creeper is by continuously pegging down the young shoots in pots; they root rapidly, and one shoot may serve to produce many plants. Neither on east nor south wall will this dainty plant thrive—only on a north one.—NORMAN.

## THE ROSE GARDEN.

### ROSES IN POTS.

AMONG the more important points yet remaining to be noticed are the time to shift pot Roses and to what extent, general treatment during growth and flowering and afterwards, resting, pruning, training, and selection of varieties. The time to shift pot Roses very much depends on the sort of Roses. For example, the time for potting Cabbage, Moss, or Gallica Roses ought to differ perhaps very much from the best time for Chinas, Bourbons, Teas. It will, however, be found that the most suitable condition for shifting all pot Roses is when they are in full growth or rather beyond it, say in that state in which the majority of Hybrid Perpetual Roses in the open air are towards the end of June or early in July. Thus measuring time, as it were, by condition, it would probably be found necessary to shift pot Roses every month throughout the twelve where any great quantity were grown. The old practice of shifting pot Roses into larger pots when in a dormant state was as unnatural as it often proved injurious. Nature extends the roots into new feeding ground when the top is most active, and cultivators cannot do better than copy her example. Accepting the principle of giving more root room when the plants most need it, and only when they need it, it follows that while some sorts of Roses might need shifting once a year, and not always that, others, such as the evergrowing evergreen Teas, might need to be shifted two or three times a year. This brings us to the extent of the shifts. Anything like the one-shift system would prove fatal to Roses in pots. On the contrary, the shifts should be as small as practicable—from a 4-in. to a 5-in. or 6-in., from the latter into a 7-in., 8-in., or 9-in., and so on. An inch, or at most 2 in., at a time is amply sufficient. This slowly progressive enlargement of root room keeps the whole mass of soil filled with roots. These also speedily reach the sides of the pots, and produce that state of things known to cultivators by the name of pot-bound. The effect of this on inflorescence is well known to all practical men, and it is no exaggeration to add that in the case of Roses, a pot-bound plant of the same area will produce double the number of flowers as one with its roots in free and loose soil. It is not easy to explain the reason of this, but the fact no one can doubt who is familiar with the cultivation of Roses and other plants in pots. The resistance of the pot to the pressure of the roots promotes fertility very much in the same way, and occasionally even to a greater extent than root pruning, though the latter may also be applied to some Roses with much advantage, as it proves the ready means of modifying the character and increasing the number of the roots. However, with progressive and small shifts given only when needed, Roses in pots will generally flower well without root pruning, especially if towards the end of their growths, be those growths one or many in the year, they are found to be under rather than over-potted.

**Treatment during growth and flowering.**—A temperature of 60°, abundance of light, a free circulation of air, plenty of food and water, freedom from insect pests and from all extremes of treatment, will generally command success. In the culture of Roses in pots, and the flowering of them out of season, too many cultivators seem to forget that the natural time for Roses to flower is midsummer, when the temperature in the open ranges from 55° to 75°. Hence, however useful cool or unheated houses are for Roses in pots, or planted out to get the full benefit or beauty out of Roses under glass, it is needful to be able to command at the least a temperature of from 55° to 65° indoors, whatever the state of the external atmosphere may be. No doubt glass alone affords a most useful protection to Tea and other Roses, but if it is worth while to go to the trouble and expense of growing Roses in pots, it is also worth while to go further, and furnish the necessary warmth for growing them well at any and every



season when wanted. Clear light is of as much importance as warmth; the latter quickens growth, the former strengthens and gives deeper colour and more fragrance to the Rose. Not a few failures in forcing Roses, flowering them well, and keeping them in robust health under glass, have arisen from the semi-opacity of the glass under which they have been grown, or rather imprisoned. Roses are children of the light as well as queens of beauty; and, in fact, without the former they will never grow into the latter. A free circulation of air is also of vital importance to them, but this by no means implies that they can be subjected to cutting draughts with impunity; for though the Rose in a dormant state is one of our hardiest plants, in a growing state it is one of the most tender. Not seldom harsh winds and sudden depressions of temperature blight and destroy its leaves or flowers in the open air, and plants in pots are still more subject to such destructive in-

can hardly be too rich; the latter may easily be so, for the first are partly decomposed or diluted before coming into contact with the feeding roots; the latter goes direct to, and if too strong destroys or cripples them. Weak and often after the Roses are in full growth should therefore be the rule in regard to all liquid manures. Some of the best for pot Roses are those made of guano at the rate of 2 ounces to the gallon; or sheep, deer, pigeon, or cow manure. The pigeon manure is the strongest of the four, and needs to be used with caution. Either of the others when thoroughly decomposed may also be used as solid top-dressings either by themselves or mixed with equal parts of rich turfy loam. Pot Roses should never be allowed to suffer from lack of food, nor flag from want of water. The amount they use up when in full growth is very great. It must not, however, be assumed that all the water given is absorbed. It very quickly passes through, and the soil again

only preserves, but develops the colour to more advantage, and gives it a delicacy of tint and a vividness of tone which Roses in the open seldom possess. But shading should never be carried to such excess as to weaken the plants or draw the buds or flower-stems. Provided the plants are not placed too close to the glass in bright weather, and that there is a free circulation of air in the houses, flower and leaf scalding and scorching will be far less frequent or severe under glass than in the open air. The shelter from heavy rains, harsh winds, and storms of hail, also preserves the flowers from injury, and gives them a freshness that is not always possible in the open air.

**Treatment after flowering.**—If the plants finish flowering in summer or early in autumn, most of the hardy Roses are much benefited by being placed in the open air for a time, supposing they have been flowered under glass; but should the season not be suitable, or the varieties tender, the plants will be safer indoors. On no account must they be neglected if good results are to be obtained. Not a few Roses and other plants suffer irreparable injury through rough treatment or neglect after flowering.

**Resting.**—More or less of this is needed for all Roses in pots or out of them, but the amount or character of this rest must be determined by circumstances. Summer and Perpetual Roses require longer rest than Bourbons, Noisettes, or Teas. There are but two means of resting plants within reach of the cultivator—drought and cold. The first is always available; the second is less at our disposal. By gradually withholding water, even Tea or China Roses may be forced into a condition of semi-repose; but all extremes should be avoided, and such Roses grown in pots should become true evergreens. Of course Perpetual and other classes of Roses may be more severely dried into rest, not only with impunity, but advantage to the plants. Neither must Roses in pots be exposed to any extremes of cold. Unless plunged to the rim, for example and mulched over the surface with several inches of litter, they are far more easily injured than Roses in the open ground; and of course one great object in growing them in pots is to render them so easily portable as to prevent their being crippled or destroyed by cold. The roots of pot Roses should never be frozen through, nor the tops subjected to a lower temperature than 8° of frost. Within this narrow limit sufficient cold will be experienced to send the plants to rest at will without injury to either root or branch.

**Pruning of pot Roses.**—Teas need but little pruning, but rather a series of thinning out of weakly exhausted shoots and of stopping strong ones. Even the latter practice must be indulged in but sparingly, especially where continuous flowering rather than shapely plants is the main object. But after or rather during each crop of flowers the plants should be carefully overhauled, and the shoots stopped or thinned as they may seem to require. Perpetual Roses again may be pruned once or twice a year according to circumstances. If one crop of flowers only are wanted, prune the plants as soon as the wood is fully ripe, and rest the plants by drought or cold until the time to start them again. If two crops of flowers, prune as soon as the flowers fade. Stimulate the plants into fresh breaks and new growth, and prune again to rest the plants thoroughly after the second flowering. Summer Roses, such as Unique, Provence, Moss, should be pruned more severely and only once a year. In fact, such Roses in pots should receive the same sort of pruning and at the same time or condition as similar Roses in the open air. Prune back to two or three buds only at or just before the fall of the leaf, and let the plants remain rather dry and as cool and dormant as possible until the time to start them returns.

**The training of Roses in pots.**—This is mostly a matter of taste, though partly one of culture and necessity. Possibly pot Roses look best and flower freest as dense bushes, about as wide as high. As the plants get older, the height mostly exceeds the breadth by a foot or so. Some



Two Sternbergias (*S. lutea* and *S. angustifolia*).

fluences, and ought to be jealously protected against them by the shelter of glass and the care of the cultivator. But while rude blasts must be shut out and sudden falls of temperature prevented, anything approaching a close, stuffy atmosphere must be guarded against with equal care. On every day and hour, when the weather is fit, a certain amount of fresh air should be given to Roses in pots, and, of course, as the season advances, they will be fully subjected to all the most favourable influences of our climate, the shelter of glass only being used to protect them from cold rains, high winds, sudden depressions of temperature, thick fogs, &c. As to food and water, Roses in pots and out of them are gross feeders and great drinkers. In pots both of these qualities seem intensified by the limited area of their feeding quarters and drinking cisterns. However rich the soil in which they are potted, its feeding properties are soon exhausted by the roots or washed out by the water; hence the necessity of rich solid top-dressings and liberal applications of liquid manure. The former

becomes dry. The smaller the pot relatively to the area of the plant, and the fuller the pot is of roots, the more frequently must the plants be watered. Over-watering is, however, equally or more injurious than under-watering, and it is needful to steer clear of both extremes. Roses in pots are also much benefited by occasional overhead syringings, especially towards evening, as these prove a capital substitute for heavy dews or rains in the open, and also tend to keep the foliage clean. As the flowers begin to open, syringing must, however, be dispensed with, as otherwise it is likely to tarnish the flowers. Every Rose grower knows how very trying heavy dashing rains are to their Roses in the open air, and one great advantage of growing Roses in pots is to free them from the risk of such injuries.

**Shading.**—This is also of great service at times in preserving the freshness and beauty, as well as in prolonging the bloom of Roses in pots. They should, however, never be shaded except in the brightest weather and during a few hours on either side of noon. Such judicious shading not



of the prettiest Tea Roses I have ever seen in pots were about 15 in. high and 3 ft. through. Such fine Roses as Charles Lawson and Coupe de Hebe look well in fine bushes from 3 ft. to 6 ft. high, and almost the same through. Pyramidal Roses in pots have not been numerous, and can hardly be said to be successful. Dwarf standards flower well, and have a fine effect raised above other plants in conservatories. Such fine Roses as Lamarque, Maréchal Niel, Niphetos, Souvenir d'Elise, &c., are admirably adapted for this style of training. But probably the Maréchal Niel never looks so well as when trained up roof rafters, or along the roof of a conservatory or greenhouse, as the weakness of the flower-stem in proportion to the mass of gold it has to carry forces the flowers to reveal all their beauty to those that look up to them. But pot Roses are mostly wanted to be portable, and when well flowered and healthy look well in any of the forms in which Roses are grown in the open air; the more numerous and finer the flowers, the less important the form of training, unless for exhibition purposes, though a dwarf bush not over formal is probably the most desirable form for the majority of pot Roses.

**Best varieties for pot culture.**—One had almost written all the Teas, but they are hardly all alike beautiful or suitable for pots. The following may certainly be relied on: Gloire de Dijon, yellow, shaded with salmon, fine in bud, large and full when fully expanded; Devoniensis, exquisite in form and in delicacy of pink, suffused through and almost covering the white; Niphetos, when perfect, of snowy whiteness and extreme beauty of form; Souvenir d'un Ami, rosy salmon, large and full; Adam, blushing pink, full and sweet; Alba rosea or Madame Bravy, white and delicate rose, fine form, full, one of the freest; Madame Villermoz, centre delicate salmon, most of the flower nearly white, large and full; Madame Margottin, deep citron, with a centre of peach, full, and good form; Madame Welch, light yellow, with orange centre; Madame Angele Jacquier, very fragrant, a changeable mixture of yellow and rose with a white fringe to the petals, distinct, and very durable; President, striking, of good form, large size, rose shaded with salmon; Souvenir d'Elise, creamy white, with yellowish centre, edged with rose; Belle de Lyonnaise, resembling Gloire de Dijon, but of a deep lemon colour; Marie Van Houtte, a most beautiful mixture of yellow and peach, as if Primroses and Peach blossoms had combined to form a Rose between them; Bougère, very free flowerer, pretty in bud, deep flesh coloured; Homer, variable, marbled with rose and salmon, distinct and striking; Perle de Lyon, deep yellow, good form; Rubens, rose and white with yellow centre, large and full; Perle des Jardins, deep canary, large, full, and good form, a very striking Rose; Catherine Mermet, light flesh coloured, one of the best; Duchess of Edinburgh, deep rosy crimson; Innocenti Pirla, perfect in bud, rich fawn, changing to white; Comtesse de Nadaillac, flesh coloured on the surface, the petals based in copper, large, and full; Perfection de Monplaisir, rather small, deep canary yellow, free flowering.

**NOISETTE ROSES.**—Maréchal Niel: it is needless to describe this magnificent golden Rose; Lamarque, pure white, with a slight trace of sulphur in centre, often wholly white, exquisite in half opened bud; Solfaterre, fine yellow sulphur; Celine Forestier, rich yellow sulphur, with frequently a dash of pink on the outside of the petals in bud, very free, useful, and beautiful; Narcisse, very pale yellow, often white; Triomphe de Rennes, light canary, fine form, beautiful in bud, very full when open.

**BOURBONS, OR HYBRID BOURBONS.** Coupe de Hebe, deep pink, exquisite in bud; Charles Lawson, vivid rose, very fine in bud, double, and good in flower; Paul Ricaut, bright rosy crimson, large, and full of excellent form; Miss Ingram, beautiful white, of exquisite form; Chenedole, vivid crimson, free flowerer, large and double; Madame Barriet, beautiful rose, full and free; Baron Gonella, bright rose colour, with bronze shading, distinct

and good; Queen, buff, beautiful in bud, very free and useful; Souvenir de la Malmaison, beautiful in bud, and generally well formed under glass in pots, soft flesh coloured, with slightly blushed edges.

**PROVENCE AND MOSS ROSES.**—Cabbage, common, rosy pink, large and full, beautiful in bud; Cristata or Crested Cabbage, the edges of these are paler, and the Rose altogether more beautiful; White Provence, pure white, slightly mossed; Striped Unique, white, often striped with lake; Common Moss, very pale rose coloured; Crested Moss, bright rose, lovely in bud; Lanei, rosy crimson, tinted with purple; White Bath, pure white; Celina, rich crimson.

**HYBRID PERPETUALS.**—Alfred Colomb, bright carmine, large, fine form; A. K. Williams, bright reddish crimson, very fine; Antoine Ducher, dark purple, very fine; Baronne de Ponstettin, very dark crimson with a velvet finish; Baroness Rothschild, light rosy pink, changing almost to white; Beauty of Waltham, rosy crimson, recurved and brilliant; Boule de Neige, pure white, exquisite in bud, and of a small useful size; Charles Lefebvre or Marguerite Brassac, the grandest of all the dark Roses in colour, form, and substance; Centifolia rosea, beautiful shell-like form, bright rose, large and full; Comtesse d'Oxford, bright carmine red, beautifully reflexed; Duc de Rohan, very dark red, large, and full, perfect form; Duke of Edinburgh, very deep and rich vermilion; Duchess of Edinburgh, soft silvery peach; Dr. Andry, bright red, beautifully imbricated, still one of the best for pots or the open; Dupuy Jamain, very bright cherry rose, deep petalled, striking; Duke of Wellington, deep crimson, double, fine form; Edouard Morren, deep cherry rose, very double, distinct and beautiful; Etienne Levet, light carmine, beautifully folded petals, one of the best; Elie Morel, light rose; Exposition de Brie, or Maurice Bernardin, rich vermilion, fine globular form; Ferdinand de Lesseps, rich crimson, very fine and brilliant; François Michelin, beautiful silvery looking Rose; General Jacqueminot, brilliant red, one of the finest of all Roses; Horace Vernet, vivid crimson, very fine; Hippolyte Jamain, bright rosy carmine; John Hopper, fine rosy crimson, large and full; Jules Margottin, bright cherry red, very fine; John Stuart Mill, bright clear red, often reflexed, very striking; La France, delicate silvery peach, unsurpassable in bud or open flower; La Havre, brilliant vermilion, beautifully imbricated; Louis Van Houtte, rich maroon crimson; Louis Dore, bright carmine flushed with crimson, petals recurved; Marie Baumann, bright crimson, fine recurved flower; Marechal Vaillant, bright crimson, fine globular form; Marie Rady, bright red, edged with white, a large, full, beautifully imbricated Rose; Mdme. Clemence Joigneaux, rose shaded with lilac, large and full, of fine form; Mdme. Hippolyte Jamain, white, tinted with rose, very distinct and good; Mdme. Victor Verdier, very perfect in form, vivid carmine, large and full; Mdme. Eugene Verdier, light, clear, and good; Mdme. Therese Levet, bright cherry rose; Monsieur E. Y. Teas, bright red globular rose, very double and beautiful; Monsieur Noman, large, globular, rose coloured, still very popular; Mr. Charles Wood, bright red, full and open; Prince Camille de Rohan or La Rosière, dark crimson, richly shaded; Princess Mary of Cambridge, pale rose edged with lighter rose, free flowering, and chaste; S. Reynolds Hole, one of the finest dark Roses; Sir Garnet Wolseley, fine crimson scarlet; Sultan of Zanzibar, very dark maroon, one of the finest; Victor Verdier, fine cherry colour, fine and full; Xavier Olibo, scarlet, shaded with black, one of the finest old Roses, without which no collection, either in or out of pots, can be complete.

D. T. FISH.

**The Scented Verbena.**—Foremost among Spanish herbs comes the Yerba, the Lemon Verbena of the English garden. Its value in Spain is well known as the finest cordial and stomachic in the world. It is either made into a decoction with beet water and sugar, and drank cold as a

*refresco* and tonic, or with the morning cup of tea, thus: Put a sprig of Lemon Verbena—say 5 or 6 leaves—into a tea-cup and pour the tea upon it. It is said to have an excellent and wholesome effect, and the flavour is said to be delicious.—**TEMPLE BAR.**

## THE GARDEN FLORA.

### PLATE CCX. — LILIUM WASHINGTONIANUM AND L. RUBESCENS.

THOUGH the last named of these two beautiful Californian Lilies was generally considered to be only a variety of the former, the difference is so palpable that we have no hesitation in following the nomenclature of Mr. Sereno Watson as given in vol. ii. of the "Botany of California." In this excellent work the Lily that was named *L. Washingtonianum purpureum* is called *L. rubescens*, and adequate reasons are given for considering the two specifically distinct, as will be seen by the following descriptions by Mr. Watson, who, as a botanist, thoroughly studied the North American Liliaceæ in a living state:—

\* *Flowers spotless or only finely dotted, white or purplish or pale yellow, the spreading segments with long narrow clars.*

+ *Flowers horizontal, large.*

1. *L. Washingtonianum*, Kell. Bulbs large, somewhat rhizomatous and oblique (becoming 6 in. or 8 in. long), the thin imbricated lanceolate scales 2 in. or 3 in. long and not jointed; stems terete, 2 ft. to 5 ft. high, glabrous or slightly scabrous: leaves in several whorls of 6 to 12 (the upper and lower usually scattered), oblanceolate, acute or acutish, 2 in. to 5 in. long and 8 to 12 lines wide, more or less undulate: flowers very fragrant, pure white becoming purplish, or often sparingly and finely dotted, 2 to 20 or more in a thyrsoid raceme, horizontally declinate on stout nearly erect pedicels 1 in. to 4 in. long; segments 3 in. or 4 in. long and 4 to 8 lines wide, the upper third spreading: stamens a little shorter, with yellow anthers 5 in. or 6 in. long; ovary 7 to 10 lines long: capsule obovate oblong, truncate, obtusely 6-angled or sometimes narrowly winged, 15 lines long or more.—Proc. Calif. Acad. ii. 13; also independently by Wood, Proc. Philad. Acad. 1868, 166; Regel, Gartenf. t. 710; Fl. Serres, t. 1795.

In the Cuyumaca Mountains, San Diego County (Palmer), and on the western slope of the Sierra Nevada at an altitude of 3,000 ft. to 6,000 ft., northward to the Columbia River. A beautiful species, growing in loose soil on ridges or lightly shaded hillsides.

+ + *Flowers erect or ascending, smaller.*

2. *L. rubescens*, Watson. Bulb as in *L. Washingtonianum*, but much smaller (about 2 in. in diameter), the thick broadly lanceolate scales 1 in. long: stem usually stout, 1 ft. to 7 ft. high, smooth: leaves glabrous, glaucous beneath, undulate or flat, the lower scattered, the upper in 3 to 7 whorls, oblanceolate, acute or acutish, 1 in. to 4 in. long and 6 to 12 lines wide: flowers usually several, on ascending pedicels 1 in. to 3 in. long, pale lilac or nearly white, becoming rose-purple, somewhat dotted with brown; segments 1½ in. to 2 in. long, the upper third revolute: stamens and style a third shorter; anthers 2 or 3 lines long; ovary wing-angled, attenuate downward, ½ in. long. Proc. Amer. Acad. xiv. 256. *L. Washingtonianum*, var. *purpureum*, Masters, Gard. Chron. 2 ser. ii. 322, fig. 67; Elwes, same, vi. 242; Baker, l.c. 233.

On wooded hillsides in the Coast Ranges, from Marin (Bolander) to Humboldt Counties, Rattan.

As may be seen by this description, Mr. Watson not only placed the two specifically apart, but put *L. rubescens* under a separate section.

Of *L. Washingtonianum* there appears to be several forms, varying according to soil, situation, and geographical distribution. The most remarkable character is the way in which it differs with regard to habit of growth and mode of flower bearing. In one form known as the











Eel River variety, the blossoms are produced in a decided umbel; in another they are arranged in a dense cylindrical spike, but this form is extremely rare if it exists at all in Europe at the present time. Our plate represents the variety with the flowers produced in an umbel, a fairly average specimen of the flowers of this Lily as grown in this country. This plant, as also that of *L. rubescens*, was drawn last summer in Mr. Ware's collection.

**Culture.**—With regard to this, the most reliable information is based on Dr. Kellogg's account, given below, as to the plant's native habitat communicated to THE GARDEN in 1874. From this account the essential conditions of good culture may be adduced. He says, "At no

## ORCHIDS.

**Epidendrum dichromum.**—This beautiful Orchid, also known as *E. amabile*, has long been a favourite object of culture, but for some reason it appears to have become somewhat scarce. It is as pretty as any of the *Epidendras*, particularly when well grown. The colour of the flowers is a rich, clear, rosy pink, the lip being a bright amethyst, and they are deliciously perfumed. There is a variety named *striatum*, having white blossoms streaked with purple hues, but it seems to be rare in cultivation. This Orchid is grown finely in Messrs. Backhouse's nurseries at York, and frequently it bears as many as a dozen flowers on a spike. From this nursery we derived the flowers for our drawing a week or so ago, the plants having been then

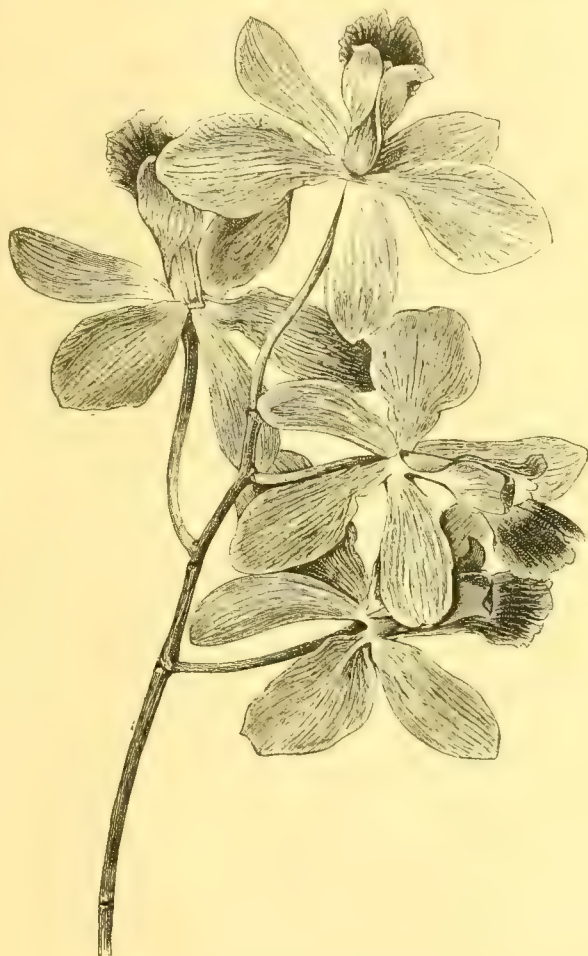
flower-spikes? *S. NISBET.* [*Calanthe Veitchi* and *C. vestita* both require the same treatment. They must be placed in a stove temperature and in some light position. They require a little water until the flowering period is over, and by that time their leaves will have decayed, when water should be withheld altogether and until they start into growth again in spring, probably about the end of February or early in March. While dormant the pots may be laid on their sides under the stage in the stove.—J. D.]

## NOTES AND READINGS.

The "well-designed lawn and garden" (p. 403) indicates a wide departure from the formalism of the present day, and will be regarded with misgivings by those who are accustomed to consider mere floral decoration as the *summum bonum* of flower garden design—where are the flowers? The design very fairly represents the ideal garden and sylvan retreat, conceived by those who see their way to divest our gardens of their formalism and stucco without any violation of good taste, and, as will be seen, it presents facilities and positions for the culture of flowering plants on as extensive and varied a scale as anyone could desire in and about its groves and borders and tree groups. The great expanse of Grass is undoubtedly the principal charm of the design, and it is a permanent feature, always there, and pleasant to look on in summer or in winter. What opportunities, too, it presents for gardening on the Grass! Imagine a spring garden everywhere filling its borders and groves, the plants located permanently in their situations, and the gardener's mind relieved of the continuous nightmare of filling and emptying and wishing his employers out of the road in order that he might root the plants up before they are well over, in order to get in his bedders for an autumn display, and the labour and expense of such practice. Then the design shows absolutely no dug borders or very few of them, and the keeping consists of little else than the cutting and cleaning of the lawn. This is a great point in these days, and particularly to those who like to enclose a large extent of ground within their garden boundaries. If the design has a fault it is too crowded by trees near the mansion, where freedom and expanse are necessary. The older landscape gardeners overdid their work in trying to give their grounds an appearance of interminable extent—pottered the space away by winding walks, beds, and groups in a manner that defeated the end in view; but the principle on which they worked was not a wrong one, and when judiciously acted upon by the designer may be made to produce the best results. People have an objection to seeing the greater portion of their garden from the door. The idea of placing the mansion at one end of the grounds is an excellent one, and it is perhaps the first time the plan has been advocated on principle. Placing the house in a central position has always, or nearly always, been a foregone conclusion with the formal school, and giving it a place in a corner at one end, as shown in the design, would probably have been the last idea that would have occurred to many modern landscape gardeners. A glance at the plan, however, shows there is nothing objectionable in the arrangement, and the idea having been struck out it will no doubt commend itself to many.

\*

Every one will regret to hear of the partial failure of the Vines at Castle Coch, but it need not discourage others from attempting Grape culture outdoors elsewhere in this country under suitable circumstances. It was predicted at the



*Epidendrum dichromum.*

time have I met with a plant of this species in a soil the drainage of which was not perfect, and, when found on a slope, did not face towards some point between east and south. The pale loosely-scaled ovoid bulb is generally found at a depth of from 12 in. to 20 in. The height of the stem, the number of whorls and of flowers on a single stem vary very much according to soil, exposition, and age of the bulb. Much has been said about the difficulty of cultivating this beautiful species. I willingly confess that I have also met with many reverses, until I paid proper attention to its habits and habitats. If the bulb is planted at a depth of from 8 in. to 12 in. in a loose somewhat gravelly soil, having perfect drainage, there is no difficulty in obtaining satisfactory results."

in flower a long time. It is a native of Bahia; therefore requires to be grown in an intermediate temperature.

**Phalænopsis Schilleriana.**—Among the Orchids at Gunnersbury Park may now be seen very fine plants of *P. Schilleriana*. They are growing in a half-span-roofed house amongst *Aerides*, *Vandas*, &c., suspended in baskets over the front stage, a position in which they receive a constant and direct current of heated air from the pipes, the evaporating troughs being filled with very weak manure water. This, together with the circulation of air mentioned, has no doubt been greatly instrumental in developing the very fine healthy leaves which they have made during the season.—A. J.

**Calanthe Veitchi and C. vestita.**—How should I treat plants of these now showing their



beginning that the Marquis of Bute's experiment would not be so successful as to encourage its further extension, and it is problematical if it is worth while trying to cultivate the Vine as a field crop anywhere in England, and least of all on the west coast which, as was long ago recognised, is the worst place for it, being too moist, and the same reason is assigned for the absence of vineyards in the north-west of France, while there are many in the north-east. It is as a wall subject that the Vine must be treated in this country, and that it will succeed under ordinary fair management in this way there can be no doubt whatever. Planted in a proper soil and rightly trained, the fruit of early varieties will ripen every year in the south and midlands, and it would probably pay better now-a-days to grow Grapes in this way than under glass for a supply in October and November, when the price is too low to remunerate growers under glass. Years ago it was stated in a statistical work that "the cultivation of the Vine had much increased in the south of England in gardens and on walls of suburban villas," and there is every reason to believe that the progress in the same direction has at least been steady if not rapid. In some gardens in the south, where the Vine is grown methodically on the open walls, I am informed that the crops, especially during the present season, have been really excellent, and the success attending the culture of the Vines most successful. Only let the same skill and care be brought to bear on outdoor culture that is bestowed on Vines under glass, and a corresponding degree of success will no doubt follow.

Major-General Maitland, writing to the *Times*, in connection with the Bordeaux Phylloxera Congress, makes a suggestion which your contemporary "Nature" thinks "quite worthy of attention." The true origin of the disease, General Maitland says, "is to be attributed to exhaustion of the vitality of the plant, induced by unduly and unnaturally overtasking its productive powers. In this respect the Phylloxera of the French vineyards bears a close analogy to the red spider of the Indian Tea gardens, and other leaf-worm of the Indian, American, and other Cotton fields, and, in short, to parasitic growth wherever proving fatally destructive throughout the vegetable kingdom. The mode in which this law of Nature, as it may be termed, operates, may be understood by reference to the physiological paradox, 'Life dies; death lives.' Wherever the vitality of a plant is abnormally diminished by over-plucking, over-pruning, and unceasing inexorable demands to produce more, more, when Nature demands rest and repose to recruit exhaustion, the sap, the plant's life-blood, becomes poor, sluggish, and enfeebled. Parasitic life is then evolved, and preys upon the little remaining life that injudicious culture has left the plant. If the above view in regard to the origin of Phylloxera be accepted as an approximation to the truth, the remedy would seem to be self-indicated—repose. Give the vineyards rest."

The idea that parasitical attacks may be caused by impaired vitality in the plant is by no means a new one, but it hardly applies to the Phylloxera, which was imported and began its ravages too suddenly. Had reduced vitality been the predisposing cause of its attacks, the French vineyards would have succumbed to other causes before now; and what is to be said of the Vines which the Phylloxera attacked and destroyed in England, and which it found neither over-cropped nor over-pruned, nor enfeebled in any way, but in the best of health? No; the pest came as it was feared the Colorado beetle would come, and,

finding suitable pasturage, it throve upon it. As it is said to thrive on the Vine only, the prospect is that it may eventually be starved out, but resting the Vines is only likely to prolong its existence by prolonging the life of the plants on which it lives.

It has often been suggested that not a few of the pests and diseases which attack plants under glass, and also under certain conditions of culture out-of-doors, such as mildew, aphid, blight, red spider, &c., are the result of debility. There is considerable reason to suppose that these plagues very often follow upon a feeble state of health or constitutional derangement, just as fever and other diseases follow famine and want among mankind, and it is beginning to be recognised as sound practice to combat all such by nourishing and skilful culture, rather than resort to suffocatory measures by means of soft soap, Tobacco, gas tar, and the like, after the enemy appears. This view evidently commends itself to that talented authority on all such subjects, Miss Ormerod, who, in a lecture delivered lately at Cirencester College, advocated "the principle of pushing on vigorous growth by all measures of good culture" as the best preventive of parasitical attacks. She put it in the exceedingly practical light that if the parasite is permitted to devour two square inches of the foliage while the plant is only growing at the rate of 1 in. in the same space of time the latter must inevitably go to the wall, but reverse the state of things and the plant must eventually get the better of its enemy.

The subject of Camellias in pots v. planted out has frequently been discussed, each system having its adherents, but surely there can be no doubt in any experienced cultivator's mind as to which is the best. It would appear as if the Camellia cannot grow too vigorously to flower freely and well, and without doubt it thrives best planted out in the bed, in which position it is also far easier managed. During the past few years I have had opportunities of seeing large collections of Camellias tried under the two systems, in some instances the plants having been for years grown in pots or tubs, and latterly in a bed of good soil, and there could be no question regarding the advantages of the latter plan as far as the health and floriferousness of the plants were concerned. Planted out, the Camellia grows like a Laurel; in pots it is frequently mismanaged and poor, for although it is not regarded as a difficult subject to grow, good pot specimens are not common in private gardens. Nor is the Camellia at all so fastidious as regards soil as some believe. It will grow well in peat, and nurserymen use peat for it almost exclusively, but it thrives best in a good light loam, and flowers better perhaps than it does in any other compost; and, as a good grower has observed, hardly anything will so soon restore a poor weak tree to health and vigour as continuous and good dressings of cow manure applied to the surface of the soil. The popularity of the Camellia for button-hole and personal decoration has, however, waned since Roses began to be cultivated more extensively, and although one does not wish to see the one entirely substituted for the other, still the preference for the Rose is not to be wondered at. The Camellia is now used most extensively from this time of the year till after Christmas, but after that period ladies and gentlemen regard the pretty, waxy, but formal and scentless flowers much in the same light as the epicure regards Asparagus after the Peas come in. The Camellia and the Rose succeed admirably together, and there could be no better combination than a house of Roses and Camel-

lias. The first would continue the display after the last had faded, and Roses would luxuriate on the roof without interfering with the Camellias, and afford the needful degree of shade to the latter as well. I saw a very large house furnished in this way lately, and the condition of both was all that could be desired.

A market gardener has lately been pointing out to us the economy and usefulness of frames or pits, and even of portable lights alone, which he says can be bought from the makers at less than ten shillings a yard run, and 6 ft. wide or rather long, and made at home for less. The frames on which these are laid consist only of a low post and rail from the saw-mill, the spaces between the posts being filled up with mats, fern, or soil, the pits in some cases being only dug out. In such structures as these, Roses, Tomatoes, Strawberries, bedding plants, and many other things can be forced or stored for nearly nine months in the year, and they can be heated by a coil of 2-in. or 3-in. pipes run round the back and front. A few hundred feet of such framing can be put together for very little money, and are just the thing for the budding nurseryman or market gardener, who may not see his way to erect more expensive structures. Glass is such an important consideration now-a-days with market growers, that any hint tending to cheapen its application is always welcome.

Mr. J. Cornhill (p. 452) speaks with sense on the subject of Grapes being ripened successfully and well in September and October. It is incredible that there should be found men calling themselves Grape growers who seriously entertain the idea that Grapes that are not ripe by the end of August or middle of September cannot be ripened successfully afterwards. Such people can only be compared to the fish in the great Kentucky cavern that are ushered into the world without eyes or ears, and never acquire either of these organs during life. What do our chief authorities say on this point? Mr. Thomson in his book on the Vine says that he started Vines in August and ripened them in December. He was so much struck with the excellence of these Grapes that he maintained in a contemporary at the time that it was better to ripen them at that season than to ripen them earlier in the year, and to prove his case he sent December-ripened Grapes to the South Kensington Committee to compare with Mr. Tillery's from Welbeck, and the committee pronounced Mr. Thomson's to be in the best condition. Dr. Lindley also wrote at the time that the advantages were "all on the side" of the December-ripened Grapes. The success of Mr. Thomson's experiment "was so satisfactory," that he spared the Vines and ripened a crop on them the following December that was "nearly double that of last year and the wood was perfectly ripe and much stronger than ever he saw it in this house before (that 'house' must have ripened the wood at all the most favourable seasons of the year 'before'), and the sentence recorded against them for their unsightliness was revoked." We commend this authority and these remarkable statements to those who confess they cannot ripen their Grapes or wood after the first week in September. They have clearly something to learn, but some writers realise so intensely on which side their bread is buttered that the idea of lifting a finger by way of a protest in the right quarter never enters their heads. If Grapes on Vines that have had all the summer's sun on them cannot be ripened in September or even October, how are they ripened when the colouring process does not even begin till the middle of November? and, above all, how comes it that Vines so treated improve so much in their general health that they double



the crops the year after and ripen their wood and make it stronger than ever it was before? These are questions for those who have lately been so bravely airing their philosophy on this subject to answer and that they might have tackled long ago, but you will not catch them making the attempt. PEREGRINE.

### MALARIA OF THE ROMAN HILLS.

THERE is an article in the October number of the *Practitioner* which is of wider than medical importance, and deserves to be read by all who take interest not only in questions of public health, but in Roman antiquities. At first sight the connection between the two subjects is not obvious; the link is that fatal and mysterious disease which is vaguely associated in our minds with the Campagna and the shores of the Mediterranean generally—malaria. Researches recently made in Italy to discover the true nature of this disease and the causes to which it is due have established certain primary conditions under which the germs, the *Bacilli malarie*, are generated. These are (1) a temperature of about 20° centigrade; (2) a moderate degree of permanent humidity; and (3) the direct action of the air upon all parts of the mass. "The absence of any one of these three conditions," says Professor Tommasi-Crudeli, the writer of the able paper in question, "is sufficient to arrest or render impossible the development and multiplication of this organism." The bearing of these first principles, and their relation to previous ideas on the subject of the disease, are amply worked out and illustrated by the writer. It might seem that the second condition at least might at once be put out of court by efficient drainage; and no doubt if the theory hitherto held, that malaria is prevalent only in low marshy ground, were true this would be comparatively simple. But Professor Tommasi-Crudeli shows clearly that this "paludine" theory is no longer tenable. The natural conditions of the Roman Campagna appear to have been misunderstood. It is commonly supposed to be for the most part a plain, but as a fact four-fifths of it are composed of hills rising gradually to the volcanic mountains of the Sabatine system on the north and of the Latian system on the south. It is not enough, then, to drain the valley, for malaria is as prevalent on these hills as on the lower ground. Accordingly, if the three propositions stated above are true, there must be permanent humidity in the sub-soil of these hills. And it is so. We are told that from the lake basins formed by extinct craters in the Sabatine and Latian Mountains there is a constant filtration into the subjacent districts of the Campagna, so that a subterranean sheet of water is formed and descends to the river valleys, where part of it finds an outlet, but far the greater part remains permanently imprisoned beneath the soil, and supplies one of the conditions for the generation of the *Bacilli malarie*.

Now comes in the antiquarian side of the question. We know that malaria existed in this territory at a remote antiquity, but we know also that these hills were occupied before the Roman conquest by a numerous and prosperous population, and afterwards became a pleasure-ground, studded with villas, which were inhabited in summer during the first centuries of the Empire. It is clear, then, that the inhabitants must have found some means of suspending or modifying during this long series of ages the development and multiplication of malarial germs, not only in the soil of the valleys, but also in the much more extended ground of the Roman hills. The solution of this problem has come ready to hand. For some time past small

tunnels of about 5 ft. in height by 2 ft. broad have been noticed cutting through the hills, of which the principal mass is volcanic tufa. Hitherto these have been regarded as conduits for drinking-water. It is now certain that they form part of a vast system of drainage for the removal of the water from the hills. After a detailed account of their construction, Professor Tommasi-Crudeli proceeds to consider their probable date and the possible explanations of the silence of ancient authorities. He gives grounds for the belief that the system was known and applied before Roman times. The only admissible explanation, in his opinion, of the silence of Roman writers on agriculture is that the works were so universally known that it was not worth while to refer to them. This is certainly easier to understand than their entire ignorance of the existence of such a network beneath their very feet. It does not seem certain from present data whether this drainage system was first begun for purposes of hygiene or of agriculture. But even if the latter end only were in view the continual emission of water from the hills must have gradually diminished the dampness of the soil which covers them, and so have restricted the production of malaria. In any case, the discovery of a connection between the tunnels and the prevention of malaria is of the first importance, not only archaeologically, as a proof of the unrivalled practical genius, if not of the Romans, then—more interesting still—of their predecessors in the country, but also from a sanitary point of view, as a voice from the past showing that what checked this fatal disease in ancient days may with our improved methods be used with still greater effect at the present time.—*Pall Mall Gazette*.

### MARKET GARDEN NOTES.

**Potatoes.**—Although aware that market Potatoes were selling very cheaply, I was hardly prepared to read an offer from a large local grower of bags to any number of Champions at 3s. each, and of Magnum Bonums at 4s. each, that is to say, at 1s. 6d. and 2s. per bushel respectively, or £3 and £4 per ton. As both these kinds are fairly sound in this district, it can hardly be doubted that the Potatoes are well worth the money. Most probably the purchaser would have to take them as lifted—that would be about three-fourths table tubers, and the rest good seed or small chats, useful for pigs and poultry. That such a low price can be a paying one is out of the question, but it indicates the present state of the Potato market, which is flooded with produce. If Champions and Magnum Bonums have done nought else, they have at least made Potatoes abundant in bad seasons, and brought plenty within reach of the masses. Unfortunately, there is reason to fear that this low price will not be long maintained. When growers have rushed all their stocks into the market, and have sold at a price that gives them no profit, solely because they are afraid to hold over, then prices will go up, and, no doubt, after Christmas £5 to £8 per ton will be nearer the mark. When that is the case importations will be plentiful, but at present they do not pay. That any home-raised produce should be sold at a very low price may be a boon to the consumer, but it is far from being so to the grower, and therefore is not an unmitigated blessing. Still, it may be asked, Why do growers thus force the market? for Potatoes, unlike fruit, are not immediately perishable products, and if sound, will keep sound for several months. It is a fair question, but one difficult to answer. Some want ready money; some rent fields only for the summer, and must clear off by the end of October, that corn sowing may not be hindered. Others perhaps buy the standing crop by auction, and have to clear off within a given time, and

others again fear to store the crop lest they lose by disease or frost.

**The disease-resisting properties** of Champions and Magnum Bonums should now be pretty well understood, and little danger ought to result from storing them in dry, airy pits for a couple or three months. It may be that those who have faith in the keeping qualities of their stocks fear a glut from the Continent after Christmas, and therefore think that holding over with the consequent labour means only loss, and prefer to take their chance in the market town. Speculators perhaps finding this a good time, are buying up largely, but their gains add little to the national wealth, as neither the grower nor the consumer are benefited. The experience of the present season must have added considerably to the desire of growers to possess solely disease-resisting kinds, for in many districts, this amongst others, the disease has done frightful mischief; and however fine the table quality of any sort may be, it requires good faith to induce any one to grow it again after it has given say two-thirds diseased tubers to one-third sound ones. I have found the Vicar of Laleham to have stood remarkably well, and to have given about one-sixth only of diseased tubers, whilst the sample is of large size. It is one of the good features of this fine Potato that, the tubers being large, it may be grown in poorish land, thus very much minimising the disease, and yet producing a good crop of clean table tubers. Grown side by side, for instance, the Vicar gave a remarkably clean crop, whilst Woodstock Kidney was terribly diseased. This is to be deplored, as the latter is indeed a splendid table tuber, but of course can never be widely grown. International gives about two-thirds more sound tubers than Woodstock Kidney, and is a much larger cropper, but is not its equal in quality. In this respect it will in time give place to the promising new kidney Cosmopolitan, which is at least a month earlier, and has all the delicious table quality of the Woodstock Kidney, and is yet a very heavy cropper. I expect in time that this will be a very popular market Potato, for at Chiswick it proved to be as early as the Ashleaf.

**Another good disease-resisting Potato** is the King of Potatoes, certainly one of the best, for I rarely find any diseased tubers in the crop, and it keeps well. I much wonder that this Potato is not more grown. It is a heavy cropper, the sample is generally even and handsome, and boils well. I think any cultivator who has several sacks of this kind would have good reason to be thankful. A seedling from this kind named Advance exhibits all its good properties, with the addition, as I have found it, of heavier cropping. Covent Garden Perfection is a very valuable garden Potato, own brother to Magnum Bonum, and yet so very much earlier and so dissimilar. It ought in time to become a most popular Potato, for it gives but a trifling proportion of diseased tubers; indeed, so few as to be almost unnoticeable. Although so late, I am just now lifting some of Grampian that are very good, and give but a trifling portion diseased. After such a severe test as they have had to undergo, I think I may well add this one to the list of good kinds. The quality is with me first rate, and it is a heavy cropper; but for the colour of its skin, it would ere now have become a popular market Potato. The awards for high class table quality made during the past summer to at least a score of new kinds show that whatever may have been the case in the past, at least the objection to lack of table quality has now lost its force; indeed, high quality and cropping powers are more prominent than at any previous time.

A. D.

**Ants' nests.**—For several years one of our garden beds was rendered almost useless by the tunnelling of ants; many remedies were tried, and at last pure petroleum was poured over the ground. After a fortnight young plants were bedded in it and suffered no ill effects, though the soil smelt strongly of petroleum. This happened two years ago, and the ants have never since returned.—TUBE-ROE.



## BOOKS.

## THE FORMATION OF VEGETABLE MOULD.\*

In this book Mr. Darwin gives another proof of his wonderful faculty of observation, and of his marvellous power of bringing together facts which most persons would fail to see had any connection with one another, and arranging them before his readers in a manner that must convince them of the correctness of his conclusions. Hitherto very few persons have had even the slightest idea of the very important part which earth-worms play in the economy of Nature; they have generally been looked upon as creatures, the object of whose existence, beyond affording food for blackbirds and thrushes, is very doubtful, and whose presence otherwise in gardens is decidedly objectionable. Anyone who may read this account of Mr. Darwin's most instructive observations on these animals (and every agriculturist and horticulturist should do so) will be surprised to learn the prominent part which these despised creatures take in the formation of so-called vegetable mould, in the preservation of antiquities, and positively in altering the form of the surface of the earth; these facts are all the more surprising when we consider how comparatively low in the scale of animal life the earth-worms are, and how destitute they are of the organs and sense with which the higher animals are furnished.

Worms, as is well known, have no limbs, and eyes and ears are also wanting; it appears, however, that they are not insensible to light, and are probably able to distinguish night from day; they have no organs of hearing, and are perfectly deaf; their sense of smell seems very limited, and as an acute sense of smell would be of no use to them, it seems confined to the odours of substances which may be of service to them as food. They have the sense of touch, however, strongly developed, and are keenly alive to a current of air and to any vibrations in the soil. Mr. Darwin placed pots of earth containing worms on a piano, and at night when the worms were on the surface of the earth if even such a high note as G above the line in the treble clef was struck, the vibrations caused the worms to disappear instantly, though they had taken no notice of the sound of the piano when not in contact with it. They are probably not insensible to variations in temperature. The mouth of a worm is a small aperture devoid of jaws or teeth, but is provided with a small, projecting lip, with which it can lay hold of its food, &c. Their food consists of leaves,

which they drag into their holes, and any nutritious matter which may be contained in the earth they swallow; they make their burrows, which are sometimes between 5 ft. and 6 ft. deep, partly by pushing away the earth on all sides, and partly by swallowing it, passing it through their bodies and depositing it on the surface; the worm-casts found on lawns, &c., are the result of this action. Von Hensen estimates that 53,767 worms exist in an acre of garden ground, and Mr. Darwin assumes that half that number (26,883) per acre may be found in ordi-

fully detailed, and will be read with great interest. It appears that worms often leave their burrows and form fresh ones; the old holes collapse, and the surface of the ground gradually sinks, but is also being constantly raised by fresh castings, consequently any substance lying on the surface gradually sinks and is covered by the soil thrown up by the worms. In this way chalk and cinders which were known to have been spread over the surface of pasture land at a certain time have been found many years afterwards some inches below the surface. A field

near Mr. Darwin's house at Down, in Kent, "was left to become pasture land; it was so thickly covered with large and small flints, that it was always called by my sons the stony field, and when they ran down the slope the stones clattered together. After 30 years a horse could gallop over the compact turf and not strike a single stone with his shoes." In the same way the remains of ancient buildings no doubt sink and become covered with soil.

Mr. Darwin fully recognises the part dust may play in lowering or raising the surface of the ground, but he does not allude to the considerable additions which pasture fields receive from the dead leaves, &c., of the herbage, as well as the droppings of animals, which are considerable in fields where cattle and sheep are pastured, and which must materially assist in the formation of mould. Worms are also shown to be active agents in levelling the earth; their casts when first thrown up are very viscid, and naturally flow somewhat downward on land which is not level; again, worm-casts when dry easily roll, and if disturbed by the wind or otherwise will on uneven ground be sure to roll downwards to some extent. Of this levelling process abundant proofs are given. Mr. Darwin concludes this most interesting and instructive book with the following remarks: "When we behold a wide turf-covered expanse, we should remember that its smoothness, on which so much of its beauty depends, is mainly due to all the inequalities having been slowly levelled by worms. It is a marvellous reflection that the whole of the superficial mould over



Plane Tree in Stationers' Hall Court.

nary Grass and arable land, and by his figures shows that each worm annually ejects 20 oz. or  $1\frac{1}{4}$  lb. weight of earth.

The quantity of earth annually brought to the surface in this manner by worms is truly marvellous. Mr. Darwin estimates that on land which is suitable for worms to inhabit "a weight of 10 tons of dry earth annually passes through their bodies, and is deposited on the surface of each acre of land, so that the whole superficial bed of vegetable mould passes through their bodies in the course of a very few years." The observations on which this estimate is based are

any such expanse has passed, and will again pass, every few years though the bodies of worms. The plough is one of the most ancient and most valuable of man's inventions; but long before he existed the land was in fact regularly ploughed, and still continues to be thus ploughed by earth-worms. It may be doubted whether there are many other animals which have played so important a part in the history of the world as these lowly-organised creatures. Some other animals, however, still more lowly organised, have done far more conspicuous work in having constructed innumerable

\* The Formation of Vegetable Mould through the Action of Worms. By Chas. Darwin, LL.D., F.R.S. John Murray: Albemarle Street.



reefs and islands in the great oceans; but these are almost confined to the tropical zones." The moral, so to speak, to be learnt by horticulturists from this book is to encourage earth-worms as much as possible (except, of course, among plants in pots). Every one who has the opportunity should read this book; and having done so, they cannot fail to regard earth-worms with much interest and even respect. But, as before pointed out, enough has not been allowed for the great part the decay of vegetation itself plays in the formation of mould. We have clear proof everywhere of the leading importance of this—in wood, marsh, and other situations where the annual growth is not removed.

#### PROFITABLE CLAY FARMING UNDER A JUST SYSTEM OF TENANT RIGHT.\*

The author of this work understands what he is writing about, and expresses his ideas in the most confident style. Works written with the view of showing how our supposed inferior or waste lands can be profitably utilised are always welcome; therefore we have pleasure in noticing the present book, though it does not come exactly within our province, having reference to agriculture only. The author's system briefly described is—"perpetual Corn growing on heavy land by means of deep and cheap steam-tillage, and plentiful applications of artificial manure," the indispensable preparatory requisites being (1) "effectual subsoil drainage, and (2) fields of considerable dimensions; to which may be added (3) straight and neat fences, (4) sound headland roads, and (5) convenient field water supply." The author's experiment appears to have been remarkably successful from a commercial point of view. All through the book we see the results of his careful observation, and note with satisfaction the ready and foresighted manner in which he has availed himself of the chemist's and other knowledge. We must not, however, lay his interesting and practical book down without briefly noticing what he has to say on the "impediments in the way." The principal impediment is, of course, the unsatisfactory and one-sided state of land tenure. The improvements not belonging to the improver—the tenant—anything done to improve the holding is done grudgingly, imperfectly, and in a temporary and perfunctory manner. What is needed to draw capital and enterprise to the soil is that tenants "should be assured of some considerable share in any enhanced value conferred on their holding by their own labour and capital," that the tenant's outlay should be recognised and paid by the landowner, approved as it is by many wise landlords, and this should be secured to all tenants by statute.

#### Iconography of Indian Azaleas.—

Under this awkward title M. A. Van Geert, of Ghent, has issued a monthly periodical devoted to the illustration and description of the Indian Azalea. We regret to state that the plates are inartistically drawn and not well produced. Such beauty of form and colour as the plants possess cannot be realised indeed by the plates. Happily, the plants tell their own story still.

#### CATALOGUES RECEIVED.

Ormiston & Renwick's (Melrose) General Catalogue of Forest and Ornamental Trees, Conifers, Fruit Trees, Roses, &c.

Kelway & Sons' (Langport) Special Wholesale List of Gladioli.

Baltet Frères' (Troyes) General Catalogue of Plants, Fruit Trees, Roses, &c.

G. J. Alberis & Co.'s (Boskoop, Holland) Catalogue of Fruits and Ornamental Trees, Roses, and Herbaceous Plants for 1881-82.

W. E. Boyce's (Holloway) List of Chrysanthemums.

\* "Profitable Clay Farming under a just system of Tenant Right." By John Prout (third edition). London: Edward Stanford, 55, Charing Cross, S.W. 1881.

#### LONDON PLANE TREES.

In an interesting little book on the past and present history of Ludgate Hill, by Mr. W. P. Treloar, mention is made of the fine Plane tree that stands in front of Stationers' Hall Court as being one among the many Planes in London whose refreshing greenery enlivens the maze of crowded buildings that everywhere occur in the city. This tree was planted some fifty years ago by the treasurer of the Stationers' Hall Company. There has lately been an anxious correspondence lest this fine tree should be cut down, and it is a pleasure to learn that no ruthless axe will lay it low to make room for "improvements." It therefore still remains, flourishing yet, so flourishing that four May trees planted in the corners of the Court had to be removed because the original tenant overshadowed them—so flourishing that two years ago a cuckoo was heard and seen in its leafy covert, the same cuckoo, perhaps, which has this year been heard in that other noble tree at the corner of Wood Street, Cheapside.

#### SEASONABLE WORK.

##### FLOWERS AND PLANTS IN THE HOUSE.

J. G., SURREY.

TABLE bouquets: 1, Amazon Lily and Vallota purpurea with Acanthus leaves; 2, berried branches of Dog Rose, Service of kinds, and common Barberry, with red foliage of wild Bramble and Berberis Fortunei; 3, white flowered Laurustinus and Escallonia macrantha; 4, Neapolitan Violets with plenty of their own leaves; 5, Tea Roses. A bowl of Tea Roses is not easy to arrange well on account of their way of hanging their heads and dropping together in heavy masses. A good way to get over this is to place them among sprays of Pernettya. The small Myrtle-like leaves of this shrub look well among the Roses, and the stiffness of the twigs makes them an excellent support for the flowers. Common Polypody Ferns, now at their best, are useful in many ways. Their fronds are good with cut flowers, but last much longer if they are picked with a small piece of root. A handsome pot plant may be prepared with some good plants of Polypody taken up carefully (each plant having three or four good fronds), potted together, and surfaced with fresh Moss. Now is the time to do it, before severe frosts have spoilt the fronds. A few smaller plants are useful in a china bowl or dish of wet sand: the addition of a very few flowers, preferably white, makes it a good table ornament.

#### FLORAL DECORATIONS.

J. HUDSON, GUNNERSBURY HOUSE.

A VERY pretty arrangement may be made for the dinner-table without either the aid of epergne or any kind of glass stand whatsoever. Select an appropriate plant for a centre-piece; Cocos Weddelliana, Euterpe edulis, Geonoma gracilis, Areca aurea, or Chamaedorea glaucifolia are especially adapted for this purpose, being elegant in growth and graceful in outline. Having fixed on a plant, turn it carefully out of its pot, i.e., if larger than a 3-in. one; then set it in the centre of a soup plate and surround it with sand, covering the latter with Moss. After this has been done, suitable foliage should be selected to form a margin, resting on the table-cloth. The variegated leaves of several kinds of Begonias make an excellent change for this purpose in place of Fern fronds or other material. Of the latter, Davallia Tyermanni or elegans would make a durable edging. Insert a few fronds of the common Maiden-hair Fern over the Moss, and then some flowers may be dotted over the surface. A good selection could now be made from the various sorts of Primula sinensis interspersed with a few spikes of white Roman Hyacinth. These will arrange well together. Bouvardias in divers colours would look well, adding a spike or two of scarlet Salvia. If larger and bolder flowers are desired, use

those of Eucharis in conjunction with a few blooms of any coloured Chrysanthemum. If flowers are scarce, foliage only will make a beautiful effect arranged as a base, choosing such as that of Fittonias, Peperomias, or the points of bright-coloured Coleus, with the addition of a small growth or two of Pandanus graminifolius or a few points of high-coloured Croton. For specimen glasses Chrysanthemums will now be valuable. Excellent arrangements may also be made with these flowers alone for sideboard decoration; for this latter work long sprays should be used and arranged in a free and easy style, with a backing up of some hardy Fern fronds if at hand. Now that the leaves of many late Grapes possess such beautiful tints, they should be made use of for the dessert from this time onwards till the Vines ripen and drop their foliage. A few stray blooms of climbing Roses may still be found here and there, and clusters of these make a good change for the drawing-room. Blooms of Indian Crocuses (Pleiones) look well in a flat glass dish in a little Moss and water. Flowers of Tree Carnations also look well arranged (a few only) in a specimen glass with their own foliage; in this way they attract more attention than when mixed with other flowers.

#### INDOOR PLANTS.

T. BAINES, SOUTHGATE.

WITH a good stock of well-grown Chrysanthemums there should now be no scarcity of flowers in conservatories and greenhouses, but where there is not a considerable extent of glass structures, in the endeavour to make an effective display it often happens that the plants are so much crowded together that they do serious injury to the more permanent occupants of the house; for although plants of most kinds will bear standing closer together in the winter, when little growth is being made, than they will in the spring and summer, still over-crowding is always injurious, not alone on account of the mischief it does to the foliage, but also through the liability that exists of plants getting overlooked in the attention they require in watering and other matters when standing so close together as not to be easily got at. For this reason it is better at this season, when the houses devoted to plants are the most crowded, to keep as much of the successional stock as can be accommodated in any pits or empty vineries available. So located, until such things as Chrysanthemums and Salvias are over and all but enough of them to propagate from can be dispensed with, the general collection will be found in better condition than with the indiscriminate crowding together so often practised during the last months of the year.

**Hard-wooded plants.**—Whatever training and tying has to be done should now be got on with without delay, so that the work may be got out of hand before the time comes for other matters requiring attention. Few operations better exemplify the taste and judgment of the operator than tying plants, for, whatever use they are required, one individual will succeed in giving just the support needed to keep them in shape and to prevent their having a straggling, unnatural appearance, whilst another will only manage to show what to avoid by using ten times the sticks and ties that are necessary, the result being that the support that should have been as far as possible concealed becomes the most prominent feature. So far as the altered circumstances under cultivation will allow, the form which each species of plant assumes when growing naturally should be preserved, merely giving the support which the lengthened, weaker growth resulting from culture under glass requires. There is another important matter connected with plant tying which cannot be too often urged upon young hands at the work. The roots of a plant confined within a pot are packed together thickly to an extent that would not take place if it was growing where its roots had full scope to extend, and it follows that every stick which is thrust into the soil must necessarily break a number of fibres and so far injure the most vital part of the plant. This obviously points



to the desirability of not using more sticks than can be avoided, and also of not pushing them deeper into the soil than can be helped. In the case of plants that have attained considerable size, and that merely require the old sticks replacing, if care is taken to put the new ones in the old holes, no root injury will follow.

**Admission of air.**—Guided by the state of the weather, air should be given daily to the different plant structures, proportionate in quantity with the nature of the plants cultivated. But fog and frosty air are much better excluded, especially the former; and even with artificial heat, air-giving in frosty weather is best confined to opening the roof ventilators, as then it does not come in direct contact with the plants. In the mixed collections of plants that usually have to be kept through the winter in greenhouses it becomes necessary to make a compromise in the temperature maintained, some things having to be kept cooler than they like in order to prevent others that will not bear any artificial heat being excited into premature growth or brought on to flower earlier than they are wanted. This unavoidable low temperature, accompanied as it is through this and the ensuing months by the ordinary, damp, sunless condition of the weather, is particularly favourable to mildew, for which a diligent look-out should be kept. Where the usual soft-wooded winter flowering Heaths are grown on them it will generally first appear, and if not at once discovered and means taken for its destruction the foliage at the base of the plants will be destroyed, and the chances of their being of use another year much reduced, for it is well to bear in mind that to whatever extent the leaves of a plant are destroyed the roots suffer in proportion. Hard-wooded Heaths and the more delicate foliated hard-wooded plants from the Cape and New Holland are equally susceptible of injury from this parasite. Pimeleas, Bononias, Hedaromas, Gompholobiums, Leschenaultias, Tetrathecas, Roella ciliata, and others of a like description require to have a vigilant eye kept on them before they get injured to an extent that can never afterwards be remedied, for not only do they get denuded of leaves on their lower branches, which cannot be restored, but they are so weakened as to become a prey to insects, which seldom fail to attack plants that are enfeebled.

**Primulas.**—The early sown plants will now be well in flower. There has been so much improvement in the single strains of these plants, that out of a package of seed there are hardly any bad ones, but it frequently happens that a few will be found so much superior as to be worth retaining for seed purposes. These should at once have all the flowers pinched out, as it is much too soon for them to set freely, and if left to go on blooming the plants will be so weakened as to yield very few seeds. Where possible they should be kept where they can have a night temperature of from 40° to 45°, and be stood as near the glass as can be. So situated, they will be benefited by the application of manure water once a fortnight.

**Arum Lilies.**—There are few plants so appropriate for using in entrance halls and rooms as what is called the Arum Lily (*Richardia aethiopica*). Intermixed with suitable foliage, its flowers are unequalled for large vases. It is doubly valuable when in flower early, and where wanted at Christmas, or soon after, the plants should at once be put in a brisk heat. For this early work nothing but the strongest examples ought to be used, and such as have been grown through the summer in pots, for though those that are turned out in the open ground during summer are more compact in their foliage, and have a nicer appearance, they will not force quite so early as the stock that has been kept in pots. This *Richardia* is very subject to green fly, which increases fast upon it, and quickly spoils its white flowers; consequently before putting the plants in heat it is needful to take care that there is no trace of this insect; if any are found fumigate well once or twice, or, what will be much more effectual in killing both the insects and their eggs, give a good washing with Tobacco or strong Quassia water.

**Lily of the Valley and Hoteia japonica.**—No time should now be lost in potting all that will be required of these useful winter forcing plants. Such portion of the stock as is wanted to come in early may at once be put in heat. The Lily will bear a higher temperature than it is advisable to subject the *Hoteia* to; a brisk bottom heat with the crowns well covered from the light will quickly bring up the flower-spikes, and this plant when not taken out of the ground until time has elapsed to allow of its foliage dying off naturally will bear harder forcing than if taken up too soon with a view to have it in bloom very early. The failures sometimes experienced with Lily of the Valley when it refuses to move at all, however much heat is given it, are not unfrequently traceable to their being lifted from the ground before the leaves were properly ripened off. The *Hoteia* if wanted early must nevertheless not yet be kept too warm, or the flowers will be few and thin in appearance.

#### ORCHIDS.

J. DOUGLAS, LOXFORD HALL.

**East India house.**—Now is the season when we can best attend to the cleansing of woodwork, glass, pots, and all else about the plants in this house. In cleansing the plants themselves they must be carefully handled, otherwise injury may result from breaking the growing points of the roots of *Vandas*, *Aerides*, *Saccolabiums*, and similar genera. *Angræcum sesquipedale* is now showing flower-spikes, and where they are considerably advanced see that they are not injured in any way; this, like the rest of the Madagascar species, grows and flowers best in the warmest part of the house, although I saw plants of it the other day doing well in the temperature of a Cattleya house. *A. citratum*, also showing its flower-spikes freely, is one of the easiest grown amongst the *Angræcums*, and one which seems to thrive well in pots or pans in *Sphagnum*, kept always moist. It is a pretty species, and one which should be in every collection of stove plants. Numbers of these two species of *Angræcum* have recently been introduced; also *A. Ellisii* and *A. articulatum*, said to be distinct by M. Reichenbach. *Ellisii* does not seem to be a very free flowerer, but as the plants become more plentiful we may find out the treatment which suits it best. It seems to flower freely in its native haunts. The beautiful new *Cypripedium Spicerianum* grows as freely in the warmest house as *C. insigne*. The same may be said of the distinct and beautiful *Phalænopsis violacea*, which seems to be more robust and free growing even than *P. grandiflora*. It grows well either in pans, baskets of teak, or pots, and is now flowering freely in this house. When the pans or baskets are well filled with roots water may be applied rather freely, but with caution if the plants have been but recently potted. In large collections it may be a necessity to re-pot or shift Orchids from one receptacle to another during almost every month in the year, but unless there are good reasons to the contrary the less they are shifted during the months of November and December the better.

**Cattleya house.**—In our house the *Pleiones* are still in capital condition, but where they have been treated to a warmer temperature than we can give them, the flowers are over, and the plants are starting to grow. The best plan is to repot them as soon as the flowering period is over; shake all the compost from their roots, and separate the bulbs; then repot in a mixture of peat and *Sphagnum* in equal parts, to which some charcoal and broken potsherds have been added. Three small bulbs may be potted in a 4-in. pot, five bulbs in a 5-in. pot, or a dozen bulbs may be put into an 8-in. pot. Some very small tufts of *Sphagnum* may be planted on the surface of the compost after potting. Do not water too freely after repotting, and place them rather close to the glass. The best known varieties are *P. lagenaria*, *Wallichiana*, and *maculata*; the last I think the most beautiful, owing to its pure white sepals and petals and richly marked lip. *P. Reichen-*

*bachiana* is also a pretty species which does not yet seem to be common.

**Cattleyas** require to be carefully attended to as regards water at this season. Some good cultivators would rather err on the side of giving them too much than run the risk of injuring their constitution by keeping them too dry. Others again say, keep them rather dry at all seasons, but maintain a very moist atmosphere. The fact is, *Cattleyas* are not amongst the easiest Orchids to grow, and when they once get into bad condition it is not easy to bring them round again. The quantity of water a plant needs must be determined by its condition, and whether it is a time of rest or a season of growth. Any plants that have flowered and are absolutely at rest should not have much water; others that are making growth require much more. One of the finest *Cattleyas* in flower at this season is the true variety of *C. labiata*. This is still scarce, and plants of it have been sold quite recently for as much as fifty guineas each. Would it not be well to obtain seeds of scarce plants like this from flowers set with their own pollen? Seeds are easily obtained, and the rest merely consists in waiting for the appearance of the plants. *C. guttata* is also in flower, and is distinct and pretty, though not so showy as some others. *C. Fausta* is a pretty hybrid *Cattleya*. It has delicate rosy pink sepals and petals, and the lip in some cases is scarcely tinged with colour. *C. maxima* has again been introduced freely quite recently, and is now to be seen in flower in various establishments. It does not like to be kept too warm. The sepals and petals are rosy lilac, the lip very lightly veined with crimson.

**Cool house.**—Under good management, plants do as well in this house now as they do at any other season of the year, especially if the weather is mild, in which case very little artificial heat is needed. Many of the best species and varieties of *Odontoglossum* are now making growth and will require plenty of water; many of them, too, are in flower, and the moist atmosphere with little artificial heat causes the petals to become spotted. Therefore, if a drier and rather warmer atmosphere could be obtained for plants in flower, this would be obviated. Besides *Odontoglossums* and *Masdevallias*, one of the most useful of all winter-flowering cool house Orchids is *Lycaste Skinneri*. With this, as with *Odontoglossum crispum*, almost every flower differs in some respects from its neighbour, but all the varieties are well worth growing. They have now mostly completed their growth, and flowers are coming up plentifully. During the growing season they have been watered freely, but now they must not have quite so much at the roots, although it would be a mistake to allow them to become sodry that the growing *Sphagnum* becomes white. The pure white form is grand, but very scarce indeed, and likely to be so. In instances in which the *Sphagnum* has grown too much on the surface of the pots, it is best to pull it off and replant it more thinly; trimming with scissors may injure the tips of some of the active rootlets. *Lælia autumnalis* and its varieties, also *L. majalis*, should not now receive much water, and they ought also to be placed in a light position, not far from the glass. There is a pretty tufty little plant now in flower, *Masdevallia ionocharis*, the flowers of which are of a delicate white colour, marked with reddish purple, quite distinct. *M. corniculata* (also in flower) should likewise be named in connection with it; the flowers of this are quaintly formed, some of them orange-yellow, others yellow, spotted with reddish buff. A house entirely devoted to the culture of *Masdevallias* would be most interesting, and there would always be some one or other of them in flower.

#### FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

THE planting of all kinds of deciduous trees and shrubs should now be pushed on with despatch, as the earlier these are got in after the fall of the leaf the less check they receive in their removal, and the better they will succeed, for with open weather, such as we are likely to get for a month



to come, roots are formed at a great rate, and plants under such circumstances quickly become re-established. For flowering subjects, such as double Cherries, Almonds, all kinds of *Cratægus* and *Pyrus*, poor soil is the most suitable, as in it they make less growth and more blossom buds, but for ornamental foliaged plants that one wishes to become larger assistance should be given in the shape of a little fresh earth to enable them to start. The best for this purpose is rich turfy loam, such as may be obtained from the trimmings of paths or roads, or any old banks, and, failing this, a good substitute is the soil that has been in use for the borders or under cultivation, which is far more congenial to the roots of plants than such as is dug up from below, which is generally dead and inert. It is a good plan, therefore, when excavating the holes for planting to throw this on one side, and fill in first with the surface soil, which, from having been exposed to the atmosphere and aerated, is sweet and wholesome. Leaf mould, so much in favour with many, is a thing to be avoided, as unless perfectly free from sticks and thoroughly decomposed, it is almost sure to generate fungus, which is apt to fasten itself on the roots of plants, and prove fatal to their well-being, as it poisons the sap, stops all healthy growth, and is a frequent cause of death and decay. Instead, therefore, of using leafy matter as a stimulant, it will be much better to give each tree or plant a mulching of half rotten manure, which, lying on the surface, acts beneficially in a variety of ways, as its juices are washed down, and it keeps the ground below uniform as to moisture, and prevents any injury from frost.

In planting trees and shrubs, one of the most important points to attend to is the spreading out and regulating the roots, and another to see that the plants are not buried too deeply, as when the collars are lower than is needful, they rarely succeed satisfactorily. To keep the heads from swaying about, suitable stakes and ties should be used, and the soil made firm about the roots by treading. Many are of opinion that American shrubs, such as *Rhododendrons* and *Azaleas*, will not grow in anything but peat, which is a great mistake, as they succeed almost equally well in a sharp, gritty loam, but what they do object to is chalk or calcareous matter of any kind, which is fatal to their existence. If peat can be got to give them a start, all the better, but if not, sharp turfy trimmings from the roadside answer well and will grow them to perfection, especially if mixed with rotten leaves, which are a good substitute for peat. Grit or sand is essential, and should be thoroughly mixed with the soil before planting, and in carrying out this latter operation it is necessary to make the soil very firm, as otherwise the fine hair-like roots of the plants cannot get hold, and they perish from drought.

Not only is this a good time to carry out the planting of all kinds of deciduous things, but it is the best season for taking up and relaying turf and making any alterations in beds involving the removal of Box, in edgings of which gaps should at once be made good and walks re-formed where defective and otherwise put in order for the winter. The great point in having firm, sound walks is to get rid of surface water, for if this soaks in or lies on gravel, the latter is sure to be loose, however good and binding its nature may be. To get rid of it properly the walks should be provided with drains and gratings to carry it off quickly, as the more wash there is the brighter and cleaner will the gravel be kept. That the gratings may be as inconspicuous as possible, it is necessary to have them small, and the best for setting and the neatest are those cast in iron frames, which, placed close along the edge of the walk, are scarcely seen. Under the gratings small traps or receptacles to catch the silt should be formed, so as to prevent the drains being blocked by the sand and rubbish carried in by the water. In the formation of walks, next to efficient drains the most important thing is the foundation, which to stand wear should be solid, for if the bottom of a path shifts the top will be disagreeable to walk on. Brick-bats and rough

material of that kind are suitable, as the angular sides are favourable as a key for gravel to bind on, but the interstices among the bats should be filled, for which purpose there is nothing better than fine chalk, which, after it gets wetted a few times, binds almost as hard as a rock, and therefore keeps down worms, which where it is not used throw up their castings and sadly disfigure the surface.

#### PROPAGATING.

**Tree Carnations** for flowering during the winter are best propagated early in spring, as by striking them thus early and growing them on freely during summer fine plants full of flower buds will be obtained by the end of the autumn. Cuttings may be obtained from plants that have been flowering during the winter, and may be taken as soon as the sap is vigorously in circulation, sometimes even by the middle of February. For this purpose prepare some 6-in. pots; half fill them with crocks, over which put a layer of fibrous material, then fill up with a compost consisting of equal parts loam, leaf-mould, and sand, sifted through a sieve with  $\frac{1}{2}$ -in. mesh, and press the whole moderately firm. For cuttings choose shoots of as sturdy growth as possible, for with only weak plants to start with it will be impossible to succeed satisfactorily. Take the cuttings about 4 in. long, remove the leaves from about 1 in. from the bottom, and if the remainder are inconveniently long they may be shortened, but in this respect care must be taken not to cut off more than is necessary. They may then be inserted, not too thickly, up to the bottom pair of leaves, and after being watered should be placed on a gentle hotbed and kept close until rooted, when air must be given by degrees. If there are any indications of damping after being put in, air may be given when requisite just to dry the foliage.

**Cinerarias.**—Seeds of these are sown in May in pans of moderately light soil, and if placed in a frame with a gentle bottom heat will be up in a few days, when air must be given freely and the plants in every way encouraged to grow sturdily. Another sowing may be made in the following month to furnish plants for a succession. For increasing individual plants the *Cineraria* is often propagated from offsets taken in July from the old plants that have flowered the preceding season; they should be kept somewhat close until the roots start, when they may be treated in every way the same as seedlings.

**Cyclamens.**—Seeds of *Cyclamens* are sown as soon as ripe, probably in July or August, in well-drained pans filled with a mixture of loam, leaf-mould, and sand; after being just covered with the same material the pans should be plunged in a gentle heat, where the seeds will soon germinate. When necessary to prick them off, the same kind of soil should be used, and the plants should be returned to their former quarters. Being in this way kept growing freely from the time of sowing until that of flowering, good plants may be obtained in fifteen or sixteen months.

**Epiphyllums.**—The propagation of these beautiful winter flowering plants is very easy, as if a piece be broken off, put in a pot, and kept moderately dry, it invariably roots, but the practice generally followed is to graft them either on *Cereus speciosissimus* or more commonly on *Pereskia*. This is done in the following manner: Head down the stock to the required height, then take as a graft a piece about 3 in. in length, prepare it as for wedge grafting, but do not cut more than the central woody part or stem proper, leaving the winged margin untouched. The stem of the *Pereskia* is comparatively small, and if the cut be extended further than the central portion, the wounded parts will not meet so truly and the union will accordingly be less perfect. The stock being split and the graft inserted, the next operation is that of tying; and while some merely fasten it in with a pin or even a spine from the stock, the better way is to tie all securely together. My practice is to use a support of about the same height as that of the plant, and in tying bring

the matting round the whole; thus one ligature suffices both to secure the graft and to fasten it to the stake. The advantage of using but one tie is that in order to make all secure the matting must be drawn sufficiently tight to cut through the winged margin, which in one case does not matter; but if two or three separate ligatures were used, sufficient damage would be done to impair the chance of success. After grafting they should be kept close until a union takes place, which will be in about three weeks' time, but care must be taken that they do not get too damp at that time, to avoid which give air if necessary.

T.

#### FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Hardy fruit garden.**—When the root pruning of pyramids and bushes has been brought to a close, the renovation of older trees should receive immediate attention. In many old gardens we often find trees of large dimensions to which the modern system of root lifting cannot be applied, or if it is attempted, one side only should be operated upon in any one season, and when the strong roots which have to be cut have made new roots into fresh compost the other side may be treated in a similar manner. If the trees are healthy and crop well, and disturbance at the tap roots is not considered necessary, the quality of the fruit may be greatly improved by the entire removal of the surface soil quite down to the roots, replacing it with fresh compost consisting of good loam, road scrapings, charred refuse, and rotten manure. Conjointly with these operations the heads of standards may be thinned preparatory to the removal of loose bark and moss, when all the strongest branches may be washed with a mixture of soot, lime, and stiff loam reduced to the consistency of paint with strong soap water, 2 lb. to the gallon. Wall trained trees and espaliers should be unfasted, spur pruned where the spurs have got too far away from home, washed and dressed in a similar way, and tied up in bundles until the time arrives for nailing or tying in for the season.

**Pruning.**—Where much of this work has to be performed advantage should be taken of the mild weather which generally prevails through November for getting this operation well advanced. Commence with Currants, Plums, and Cherries, thin and tie up Raspberries, but defer shortening the tops until the spring. Mulch heavily with rotten manure when the weather is favourable for wheeling, and avoid all digging or disturbance of the surface roots. If new plantations have to be made now is a favourable time for getting in the canes. The Raspberry enjoys a light rich soil, and produces the finest fruit when grown in single rows running north to south and trained to a V shaped trellis which admits of the young growths rising up the centre. Unnail Peaches and Nectarines as soon as they are clear of the foliage, and draw them away from the walls to prevent the buds from getting too forward early in the spring. Warned by the disastrous effects of the frost of last winter, get all outdoor Figs unfasted and have plenty of dry Fern or straw ready for covering them up on the approach of severe weather. Let the roots be well covered with short manure, see that mice do not establish themselves in the straw, and keep the latter dry by putting up glass copings or broad boards for throwing off rain and snow.

**Strawberries.**—If pot Strawberries are still standing out-of-doors care should be taken to prevent them from becoming infested with worms, for, useful as these creatures may be in our fields and pastures, the Darwinian theory is not likely to find favour with the grower of pot Strawberries. Prepare the cold pits intended for their reception by covering the bottom with a thick coat of coal ashes, examine the bottoms of the pots, and plunge to the rims in Oak leaves or old tan. See that the soil is in a nice growing state when they are put away, throw the lights off at all times when the weather is mild, and close them when



very wet or unusually severe. If the first batch intended for early forcing has been some time under glass, have them moderately supplied with water, as damage often follows keeping them too dry.

**Pines.**—In the fruiting house plants in various stages from the recent starter to the point of changing colour may be kept at a temperature of 70° by night, with plenty of atmospheric moisture from the evaporating pans replenished with liquid manure, light syringing overhead on fine days, provided the plants are not in flower, and the regular damping of the surface of the plunging material. As the days decrease in length more fire heat will be needed, but it will not be well to adhere to any hard and fast line with regard to the top-heat, at least where the bottom-heat ranges about 85°, and blinds can be run down under sudden external depressions. From this time on to March allow the suckers to remain on these plants as the fruit is cut, and if successional stock requires more room the old stools may be divested of leaves, and laid in at the end of a warm pit, where they will keep moving and make better stock than if potted at this dead season. In succession houses guard against overcrowding the plants. It is better to weed out and throw away than to get them "drawn" by attempting too much. Keep them well up to the glass, maintain a steady bottom-heat of 80° to 85°, and let the top-heat range from 60° at night to 75° by day, at which point give a little air. If growing in close compact pits, the best of all structures for Pines, syringing may be discontinued; but root watering will require regular attention, otherwise the best plants may start prematurely in the early spring. The same caution applies to autumn-rooted suckers occupying 5-in. and 6-in. pots, the soil in which soon becomes dry if not well watered and plunged quite up to the rim in gentle bottom-heat, sufficiently strong to keep them moving until the time arrives for shifting in February.

**Cucumbers.**—Where the structure devoted to Cucumbers in winter and Melons in summer is divided into compartments the early winter fruiter will now be in full bearing and capable of taking copious supplies of tepid liquid at a temperature of 80° to 85°. If it is intended to follow this batch with early Melons, high pressure may be indulged in, as their time is short. Plants in the second compartment for coming in after Christmas do best in pots placed on inverted pots or brick pedestals, as they can then have plenty of fermenting Oak leaves or tan placed round them, and renovated at a dead time when the warmth and moisture will counteract and soften the heat given off by hot-water pipes. Train the Vines regularly over the trellis, giving every leaf room for full development; remove all fruit and male blossoms, and keep the foliage clean by syringing occasionally with clear sulphur water. Look after weak plants from the latest sowing, pot on as they require it, and keep them steadily moving in a close pit where they will do good service through February and March, when Cucumbers are scarce. The greatest drawback to winter Cucumbers is a deficiency of light and excessive firing. To secure the first, limewash the walls and keep the glass scrupulously clean. To counteract the second maintain a sharp fermenting bottom-heat, and use some kind of external covering at night.

#### THE KITCHEN GARDEN.

R. GILBERT, BURGHEY.

ONE of the most important operations now demanding attention is the laying in of spring Broccoli; the work is so simple and so effective, that all should do it at once. Merely take out a trench, and lay the plants sideways, with their heads to the north. Celery should now be finally earthed up; nothing is so disastrous to this useful crop, as when the first sharp frost lays prostrate the outside leaves, leaving the heart of the plant exposed to the weather, and here I may hint that only varieties thick in the stem should be grown. All young Cauliflower and Lettuce plants in frames should be dusted over with fine

charcoal and sand to dispel damp and mildew. Keep on the lights when the weather is wet, and give air by tilting at the back. If not already done, plant out Cauliflowers under hand-lights in good rich ground. For two years past my hand-light plants have mostly buttoned. The best variety and certainly the most useful is the new Erfurt Dwarf Mammoth. Five plants of this fill one light. Select a warm and cosy corner for this indispensable esculent. Cutting away Asparagus stems and giving the beds first a dressing of salt, and then mulching with good cow manure, fresh from the cow houses, is the way to obtain fine, thick, and tender heads of this delicious vegetable. Lift all Beet at once, and hill it in small round heaps; it keeps much sounder, and retains its flavour better by being buried under the soil than stored in any other way.

**Forcing vegetables.**—We are busily engaged emptying brick pits to be in readiness to fill with leaves for Rhubarb, Seakale, and Asparagus. These vegetables when forced with good sweet leaves are not only tender, but the flavour is much better than when manure is used; in fact, they are not only eatable, but enjoyable. Keep good stocks of French Beans at work; our first batch will be ready in a few days. Osborn's variety is a very good one, but scarcely large enough. I therefore am trying Fulmer's Early Forcing. Make up at once beds of manure and leaves for early Potatoes. Start the sets in a mild heat in boxes. Our first Mushroom bed spawned seven weeks ago, is now in bearing, and the house is kept cool and humid. The second bed, made up this day, October 22, will be in plenty of time to succeed the first. Inside Mushrooms are poor examples compared with those grown on ridges, where the buttons are as big as Oranges and firm as rocks. Still, we must have them in the dark days of winter. Bear in mind there is such a thing as lamb at Christmas: therefore be in time with plenty of green Mint. Keep up good supplies of Mustard and Cress, Tarragon, and, above all, Chives, which here are always in demand.

#### THE KITCHEN GARDEN.

**Potato trials at Chiswick.**—A meeting of the Fruit and Vegetable Committee was held at Chiswick on the 3rd inst., Mr. John E. Lane in the chair. The collection of Potatoes grown in the gardens was again examined. Several sorts were selected as good cropping, very handsome, and distinct varieties, and on being cooked the following awards were made: *First-class certificates*: Fortyfold White (Farquhar), large round white; Vermont Champion (Bliss), large round white; Queen of the Valley (Bliss-Hooper), large and oblong pale pink; Adirondack (Bliss-Hooper), medium round white tinged with pink; Brownell's No. 11 (Bliss), large roundish white; Victoria Kidney (Edwards), large flat white; Rand's No. 30 (Bliss), large oblong white; Rand's No. 12 (Bliss), large long flat white. *Second-class certificates*: Criterion (Ross), round white; Sir Walter Raleigh (Ross), large round white; Trophy (Bliss), large kidney-shaped red; Vicar of Laleham (Dean), large round purple; White Elephant (Daniels), large long flaked; Victoria alba (Donaldson), large round white, purple eye; St. Patrick (Daniels), large long white.

**Deep v. shallow Mushroom beds.**—Throughout the autumn, winter, and spring few crops are more important or more valued than a good supply of Mushrooms. Sometimes this may be had with little or no trouble: at other times the greatest skill and attention may fail to produce satisfactory results; but what is most surprising is the long time during which some beds afford a supply, while the crop of others is soon over. As a rule, I have generally observed that shallow beds are soonest over, and that deep ones last the longest. The best Mushroom bed we ever had was one quite 2 ft. deep. This was made up in the end of a coal shed in June last. Mushrooms were cut from it in July, and they are still coming up fresh and thick. This bed has now been

bearing close upon four months, and we never had one before which did so much good service. Its position is in no way extra favourable, and we can think of nothing which has made it so unusually fertile except the great depth of the material employed, which consists of horse manure, old leaves, and soil. We intend trying more beds of the same depth, and it would be interesting to know if others have found deep beds best. The largest Mushroom had from the bed in question measured 6 in. across.—J. MCIR.

**New white Egg Turnip.**—Is not this and another variety, shown at South Kensington the other day, the same as the Jersey Navet? There appears to be no end of this risking of new names, but it is most undesirable in all ways. It is unfair to the variety itself as well as to the buyer; it may have a history and peculiarities that it would be a gain to know. If we take up a good old foreign kind with its true name, one can ascertain its origin, use, character, and cultivation; but if a new name be given to it, we are in the dark about all these matters.—H. J.

#### SOCIETIES.

##### ROYAL HORTICULTURAL SOCIETY.

NOVEMBER 8.

FOR a November meeting that held on Tuesday last was an important one; not only were there fine displays of flowers and fruit, but there was also a remarkably fine exhibition of vegetables shown in competition for the valuable prizes offered by Messrs. Sutton, of Reading. As usual at the close of the year, Chinese Primulas and Persian Cyclamens formed the chief attraction among flowers, though there was also a fair display of Orchids from the Norwood Nursery. The Cyclamens were especially good, and well exemplified what can be done by London growers with this beautiful flower, even at this early date. One would reasonably expect to find a display on this occasion of that most popular of all November flowers, the Chrysanthemum, but, with the exception of a few new sorts submitted to the committee, its absence was conspicuous. Among plants there were some of special interest. The following first-class certificates were awarded to—

Mr. C. Salter, Leigham Court Road, Streatham, for—

**CHRYSANTHEMUM LADY SELBORNE.**—A pure white flowered sort of that excellent Japanese variety James Salter, of which it is an exact counterpart, except in colour, and, like it, it is one of the earliest to bloom.

Mr. C. Herrin, Chalford Park, Gerrard's Cross, for—

**PRIMULA SINENSIS FOLII VARIEGATIS.**—A form of the Chinese Primula, having the foliage prettily variegated with creamy white and green. Messrs. J. Veitch & Sons, Chelsea, for—

**BEGONIA SOCOTRANA.**—A new species from the island of Socotra, remarkable for its peltate or shield-like foliage, which is similar to that of Saxifraga peltata. The flowers are numerous, of moderate size, and of a beautiful clear rosy pink colour.

**CHRYSANTHEMUM REX RUBRORUM.**—A Japanese variety, having large and full flowers, narrow florets of a beautiful rich reddish crimson colour. A remarkably fine and effective variety.

Mr. King, Wray Park, Reigate, for—

**COLEUS COLUMBINE.**—Another of the brightly coloured sorts that this exhibitor is continuously raising and showing. The disposition of the markings of the foliage is indescribable, but a mingling of rich crimson of various shades, green and pale yellow, renders the plant highly attractive.

Mr. Bull, Chelsea, for—

**MASDEVALLIA CHIMERA.**—This plant is said to be the true *M. Chimera*. It is remarkably distinct from any other on account of the manner in which its flowers are produced. In the majority of the Chimeroïd Masdevallias the flowers are produced from the base of the plant, but in this they are borne erect on stiff stalks, which show them to the best advantage.



**HELICONIA AUREO-STRATA.**—A stove plant of bold aspect, having broad handsome leaves streaked and marked with yellow on a deep green ground. It is dwarf in habit, and somewhat resembles a *Musa* in miniature.

**DAVALIA FIJIENSIS PLUMOSA.**—A crested fronded form of a most elegant Hare's-foot Fern, from the Fiji Islands. The broad deltoid fronds are finely divided, the pinnae terminated by a crest. It is evergreen, and a most desirable Fern.

**DRACENA LINDENI.**—The handsome species that has frequently been described in these columns. It was shown well on this occasion, the habit of the plant and the leaf markings being very characteristic.

Messrs. J. Laing and Co., Stanstead Nurseries, Forest Hill, for

**CROTON LAINGI.**—A variety with long narrow leaves that droop on all sides in a most elegant manner. The variegation consists of golden yellow, deep metallic green and crimson, the former being disposed chiefly on the lower half of the leaf.

Messrs. Lane and Son, Berkhamstead, for—

**APPLE PRINCE ALBERT.**—A large and handsome variety, and one of the finest culinary sorts in cultivation. Its good qualities have long been tested.

Among new and rare plants exhibited were—from Messrs. Veitch, Amurys Autumn Beauty, a splendid variety, the result of crossing *A. reticulata* with one of the hybrid varieties; the colour is a rich rosy crimson, netted and pencilled with white; *Cœlogyne Peltastes*, a new species of climbing habit of growth and pretty yellow flowers; *Cyphokentia macrocarpa*, a handsome Palm with pinnate leaves, the younger of which assume a bronzy hue which is in fine contrast to the green. The most remarkable of the group of new *Chrysanthemums* raised by Mr. Salter were among the Japanese Marquis of Lorne, brownish crimson; Mary Major, a fine flower, bluish white; Lord Beaconsfield, with large blooms, having broad florets of a reddish crimson on one face, pale yellow on the other, and intermingled in a confused head. This is a distinct and most effective sort. Purple Pomponne, a very free flowering sort, with compact flowers of a deep rosy pink colour, and Brunette, another Pomponne, with bronzy yellow flowers. These also were shown by Messrs. Veitch.

Messrs. Mahood and Sons, Putney, showed half-a-dozen new *Chrysanthemums*, which were Henry West, yellow; Mrs. Garfield, pink; Mrs. Mahood, bluish; and Mrs. Townsend, all of the Japanese type of flower. Mr. Little exhibited a fine group of the lovely pure white Pomponne *Sœur Melanie*, to show what a useful early flowering variety it is, and how delicate and pure it is for cutting purposes. It is not a new kind, but a most valuable one.

From Mr. Bull were *Lilium neilgherrense*, a noble greenhouse Lily of a creamy white colour; *Kämpferia Gilberti*, a species with foliage elegantly variegated with white and deep green; and some well flowered plants of the beautiful *Lælia autumnalis atropurpurea*. The group of Orchids from Mr. James, Castle Nursery, Norwood, comprised some good examples of *Oncidium Forbesi*, a fine winter Orchid; *Miltonia Moreliana*, *Masdevallia tovarensis*, several Lady's Slippers, and *Odontoglossum*—among the latter *O. insleyi leopardinum*.

A fine group of specimen plants of *Bouvardia*, a variety exhibited by Mr. Woodbridge, Syon House, Brentford, showed well the skilful culture the *Bouvardia* receives at Syon. The plants were large, well furnished with healthy foliage and flower, and appeared as if they would afford an inexhaustible supply of bloom throughout the winter.

**CHINESE PRIMULAS** were shown numerous and in excellent variety. The most noteworthy, from Messrs. Cannell & Sons, Swanley Nurseries, were better even than we have ever seen from these exhibitors in November. The plants were extremely well furnished with bloom and the colours of the respective sorts fully developed. The varieties were Swanley White, Lilacina,

Swanley Red, Swanley Carminata, Swanley Purple, and Delicata. The names sufficiently indicate the prevalent tints of the flowers; hence it only suffices to mention that all the flowers are models as regards size, outline, and form, and other essential points that constitute a perfect Chinese Primula. Mr. Wiggins brought from Mr. Little's garden, at Hillingdon Place, Uxbridge, a capital group also, though the plants were in a somewhat undeveloped stage, quite sufficient, however, to indicate the excellence of the respective sorts, which are as near perfection as it is possible to obtain them. Crimson Model is particularly noteworthy, the colour, a rich vivid crimson, being very fine. President is a fine purple flower, as is also Magenta, both large and perfect in size and form. From the Society's Garden, at Chiswick, Mr. Barron contributed a good collection, which included such excellent sorts as Chiswick Red, raised in the garden and which has received such high encomiums.

**WINTER-FLOWERING SALVIAS** were shown also in beautiful condition from Chiswick. Among these were *S. Bethelli*, *Brunetti*, and *Hoveyi* in a cut state, and a fine specimen plant of *Salvia Pitcheri*, grown to perfection, showing well what a lovely flower it is when grown under skilful treatment, the beautiful azurean hue of the blossoms being the admiration of everyone. Messrs. Cannell likewise exhibited cut blooms of these *Salvias*, and also of the new variety *Mons. Issanchou*, a variety of *S. splendens*, with flowers variegated with white and red. The same exhibitors also showed their beautiful new *Heliotrope* White Lady, which bears large trusses of pure white deliciously fragrant blossoms.

Mr. Hudson, Gunnersbury House, Acton, exhibited fruits of *Cycas revoluta* and a flowering specimen of *Chamaedorea glaucifolia*, one of the most elegant Palms in cultivation. The plant was some 8 ft. or 10 ft. high, with a large spreading head of feathery foliage terminating a straight clean stem, from the joints of which the branched spadixes were produced. The plant was in a pot about 6 in. across, which was very small compared with the size of the plant, and it well showed what may be done in Palm culture under restricted pot room. A new *Abutilon*, Dwarf Perfection, was shown by Mr. Parr, Givon's Grove, Leatherhead, which was about 9 in. high, and furnished with large blossoms of a rich peach colour. A remarkable sport of *Euonymus radicans variegatus* was shown by Messrs. Dickson, Newton Nurseries, Chester, having broader foliage elegantly variegated.

From the Royal Nurseries, Slough, Mr. Turner exhibited a group of beautiful Tree Carnations, all with highly-coloured flowers. The finest of these were Scarlet Nonpareil, Model, Brightness, Warrior, very deep crimson; Lancer, Rosalind, Meteor, Indian Chief, intensely dark; and Sunbeam. The value of these Carnations at this season of the year can scarcely be over-estimated; and now that there are such beautiful varieties no garden need be without some of them.

A large group of dwarf *Scabious* in pots, from Mr. Roberts, Gunnersbury Park, Acton, was a highly attractive feature in the meeting, and an uncommon one moreover. This group showed what can be done with annuals by judicious treatment, and also what serviceable plants these dwarf *Scabious* are for the winter embellishment of the conservatory. The colours of the flowers range from rich velvety black crimson through pink to white.

One of the most remarkable exhibits was a fine specimen plant of *Madame de St. Joseph* Tea Rose, completely covered with fruits almost matured. This was shown by Mr. Bennett, now of Shepperton, who has done so much in hybridising Roses. The crop exhibited is said to be the second this year, and has been produced by the aid of artificial fertilisation.

Allusion was made above to the fine displays of *Cyclamens* from Mr. Clark, Twickenham, and Mr. Smith, Ealing. Both were excellent, but the collection of the former was particularly fine and well deserved the cultural commendation awarded to the exhibitor of it.

**FRUIT.**—The subjects submitted to the committee were not numerous. Ollerhead's seedling Grape was shown by the raiser from Wimbledon House, but it was considered not sufficiently distinct from Foster's Seedling. It was shown in fair condition, the bunch having been cut from the same vine as those exhibited at the end of July last. Mr. Roberts, Gunnersbury Park, Acton, received a cultural certificate for seven fine fruits of Queen Pine-apples, and the same award was made to Mr. Vivian, Sion House, Longueville, Jersey, for two fine dishes of Pears. These consisted of six fruits of Chaumontel, weighing on the aggregate 7 lb. 6 oz., the largest being 1 lb. 13 oz., the heaviest fruit of the kind grown in Jersey. The other sort was Doyenné du Comice, the six fruits weighing 5 lb. 10 oz. This exhibit afforded ample proof of the perfection to which Pear culture has attained in the fine Jersey climate. These Pears were sent to the committee through Mr. Atkinson, Gunnersbury House, Acton, who received a letter of thanks. Half a dozen fine bunches of Lady Downes Grape in capital condition were exhibited by Mr. Reed, Moat Mount, Mill Hill, Hendon; and Mr. Hudson, Gunnersbury House, Acton, showed two splendid bunches of Alnwick Seedling Grape, as fine probably as it could be grown; the bunches were accompanied by the decaying foliage of the Vine, which during this stage assumes a rich colouring of crimson and yellow. Mr. Roberts also showed from the neighbouring garden excellent bunches of the white Tokay Grape. Fruits of the Champa Banana were exhibited by Mr. Woodbridge, Syon House. It is very similar in size and form to the ordinary kinds.

Apples of new kinds were numerous. Mr. Turner, of Slough, showed four seedlings, No. 1 being considered a promising sort; the committee wished to see it again. It is a medium-sized dessert kind of excellent flavour. Seedling fruits were also shown by Mr. Nisbet, Aswarby Park, Folkingham; Mr. V. Richards, South Worton Rectory, King's Lynn; Mr. T. Sells, The Apiary, Stamford, Uffington; and Mr. R. Fenn, Sulhamstead. Messrs. Lane, Berkhamstead, showed twenty dishes of their seedling Apple Prince Albert, the kind to which a first-class certificate was awarded. In the vestibule there was a fine display of Apples made by three exhibitors, viz., Mr. Skinner, Boughton, Maidstone, who showed 100 dishes; Mr. Lees, The Wilderness, Reading, who had about fifty; and Mr. Mainwaring, Breckley, Kent, who exhibited a similar number. All the collections were good, Mr. Skinner's particularly so, for it contained some wonderful examples from his Kentish orchard. The largest among them were Stone's or Loddington Seedling, the local sort that has lately been so much talked of; Bedfordshire Foundling, Blenheim Pippin, Dumelow's Seedling, Winter Hawthornden, Golden Noble, Ribston Pippin, Lewis's Incomparable, Prince Albert, Hollandbury Pippin, Mere de Menage, Peasgood's Nonsuch, Lady Henniker, Deux Ans, Hoary Morning, Emperor Alexander, Warner's King, and Lord Suffield, which latter were in excellent condition considering the date, as were also a dish of red Quarrendens.

**VEGETABLES.**—Those for the consideration of the committee were few. Messrs. Carter exhibited their new Silver Globe Onion, a silver-skinned handsome sort of large size and said to be excellent in every respect, and the Giant Rocca Onion of Naples, also a large growing sort and handsome globular shape. A cultural commendation was accorded to Mr. Allan, Gunton Park, Norwich, for dishes of an improved and distinct type of Spanish Onion, the produce of seed sown the first week of March last. The same exhibitor also showed two braces of Improved Rollisson's Telegraph Cucumber, which were likewise awarded a cultural commendation. Some fine examples of Reading Exhibition Brussels Sprouts came from Mr. Wildsmith, Heckfield Place, Winchfield. It is a wonderful cropper, the sprouts being produced all along the entire length of the stems about 2 ft. high and are of medium size, firm, and of excellent flavour. A collection of about twenty different kinds of



Celery was exhibited by Messrs. Veitch, as well as a similar number of varieties of Turnips, both making an interesting display, the Celery being remarkable examples of good culture. From Messrs. Sutton & Sons, Reading, was an extensive exhibition, consisting of some eighty varieties of Potatoes and a large number of different sorts of Kales. The collection of Potatoes grown and Certificated at Chiswick, and alluded to in another column, was exhibited on this occasion.

#### LIST OF AWARDS.

Silver Knightian medal to Mr. W. Skinner, for collection of Apples.

Silver Knightian medal to Messrs. Sutton, for collection of Potatoes.

Silver Banksian medal to Mr. W. Lees, for collection of Apples.

Bronze medal to Messrs. Veitch, for collection of Celery and Turnips.

Cultural commendation to Mr. Vivian, for Chaumontel and Doyenné du Comice Pears; Mr. Roberts, for Queen Pine-apples; Mr. Hudson, for Alnwick Seedling Grape; Mr. Allan, for Cucumbers and Onions; Mr. R. Clark, for Cyclamens; Messrs. Cannell & Sons, for Primulas.

#### Messrs. Sutton's special prizes.

For these there was a brisk competition. Twelve kinds of vegetables were required, and prizes were also offered for Onions and Potatoes of special sorts. There were a dozen exhibitors of collections, most of them being good, and none containing really inferior produce. The first collection, shown by Mr. Austen from Bristol, was as fine as it is possible to show a collection at this season, though, of course, some dishes were superior to others. The most noteworthy were Leicester Red Celery, extremely fine; Hathaway's Excelsior Tomato, St. Patrick Potato, Scarlet International Carrot, Hollow Crown Parsnip, Sutton's King Cauliflower, Improved Reading Onion, Devonianum Cucumber, Sutton's Snowball Turnip, Sir Joseph Paxton French Bean, Nutting's Dwarf Red Beet, and Sutton's Superb Brussels Sprouts. These comprised sorts excellent in every way, and formed a fine selection particularly for exhibition purposes.

The next best was from Capt. Jackson's garden, and was also an excellent one, though somewhat inferior in some points. The Trophy Tomatoes were extremely fine; so were the Improved Telegraph Cucumbers, Long Surrey Carrots, Schoolmaster Potato, Matchless Brussels Sprouts, Sulham Prize Celery, Pea Ne Plus Ultra, Improved Dark Red Beet. Mr. Meads had in his third collection some excellent examples of Stamfordian Tomato, Excelsior Potatoes, Tender and True Cucumber, Canadian Wonder Bean, and Veitch's Autumn Giant Cauliflower. The fourth collection was scarcely if at all inferior to the last. There were very fine Reading Exhibition Sprouts, Red Tomatoes, Turnips, Cucumbers, Potatoes, and others; and in the fifth and other collections there were superb dishes of Autumn Giant and Snowball Cauliflower, Vicar of Laleham Potato, Giant Rocca Onion, Sulham Prize and Solid White Celery, Champion Horn Carrot, Heartwell Cabbage, &c.

The prizes for Potatoes, too, were keenly competed for. The Magnum Bonums throughout were excellent, there being fourteen dishes; of Reading Abbey there were nine dishes; of Woodstock Kidney, seven; and of Reading Hero eight, all of which represented these excellent varieties in their true character, and it was worthy of note that the judges were not led away by large size in awarding the prizes, but selected what they considered the most characteristic tubers, and those that would stand the test of cooking the best. The class for a dish of twelve roots of Reading Improved Onion brought ten competitors. The first, from Lord Eversley's garden, were indeed excellent in every respect, and showed well what a handsome sort this is when well grown.

The following is a list of the awards of Messrs. Sutton's prizes:—

For collection of vegetables, 12 kinds.—1st prize, £5 5s, or gold medal, Mr. J. Austen, Ashton Court Gardens, Bristol; 2nd, £3 3s, or silver medal and £1 1s., Mr. R. Phillips, gardener to Capt. Jackson, The Deodars, Meopham; 3rd, £2 2s., or bronze medal and £1 1s., Mr. W.

Meads, Beckett Park, Shrivenham; 4th, £1 1s., Mr. Wildsmith, gardener to Viscount Eversley, Heckfield Place, Winchester; 5th, 10s. 6d., Mr. R. Lloyd, Brookwood Asylum, Woking.

For 12 Sutton's Improved Reading Onions.—1st prize, £1 1s., Mr. Wildsmith; 2nd, 15s., Mr. Howard; 3rd, 10s. 6d., Mr. Haines; 4th, 7s. 6d., Mr. C. Ross, Welford Park, Newbury.

For 12 Sutton's Magnum Bonum Potatoes.—1st prize, £1 1s., Mr. W. Meads; 2nd, 15s., Mr. J. Miller, Hamstead Park, Newbury; 3rd, 10s. 6d., Mr. C. W. Howard, Bridge, Canterbury; 4th, 7s. 6d., Mr. C. Herrin, Chalfont Park, Gerrard's Cross.

For 12 Sutton's Reading Abbey Potatoes.—1st prize, £1 1s., Mr. G. Donaldson, Heith Hall, Inverurie (N.B.); 2nd, 15s., Mr. W. Meads; 3rd, 10s. 6d., Mr. R. Lloyd; 4th, 7s. 6d., Mr. S. Haines, Coleshill House, Highworth.

For 12 Sutton's Woodstock Kidney Potatoes.—1st prize, £1 1s., Mr. W. Meads; 2nd, 15s., Mr. C. W. Howard; 3rd, 10s. 6d., Mr. J. Miller; 4th, 7s. 6d., Mr. R. Phillips.

For 12 Sutton's Reading Hero Potatoes.—1st prize, £1 1s., Mr. J. Miller; 2nd, 15s., Mr. A. Emson, Dorchester; 3rd, 10s. 6d., Mr. S. Haines; 4th, 7s. 6d., Mr. W. Meads.

SCIENTIFIC COMMITTEE.—Sir J. D. Hooker in the chair.—*Gravel*.—Mr. Pascoe exhibited specimens of disintegrated granite from Roche, Cornwall, derived from the washing of china clay, and recommended its use as gravel. Sir J. D. Hooker remarked on its whiteness and want of cohesion, unless mixed with clay, rendering it more or less objectionable.

*Mycelium of Polyporus squamosus*.—Mr. W. G. Smith exhibited a large specimen of this mycelium, taken from beneath the bark of Elms, near London. It appears to cause much injury to the trees, and follows the track of the beetle, Scolytus destructor, so common in Elms.

*Malformed Pear*.—Dr. Masters exhibited a Pear stalk (hypertrophied) without any true Pear within it. It was received from Mr. Burbidge, Dublin Botanic Gardens. It was said to have a sweeter flavour than that of the Pear itself.

*Laurustinus*.—Rev. G. Henslow showed a bough and roots of this tree, the leaves of which were pale coloured and more or less curled, with the epidermis detached from the tissue below, indicating unhealthiness. On examining the roots they appeared to have decayed from poverty of soil and want of nourishment. Trees of the Rosaceae are said to be dying in a similar manner in market gardens about London. Mr. Boscawen remarked that he had experienced the same thing with Laurustinus on the London clay. Sir J. D. Hooker observed that this tree often fails to ripen its wood well in this country.

LECTURE.—The first group of plants referred to by the Rev. G. Henslow was a fine series of Bouvardias of Mexican origin. He called attention to the fact that they belong to the same family as the Coffee, Cinchona, Madder, Galium, and Woodruff, which, though so different in appearance, had their flowers constructed on the same plan. The lecturer described the various uses of these plants. As illustrations of methods of fertilisation he described the Salvia, showing the peculiar oscillatory motion of the stamens, which adapts them to insects, so that they may convey the pollen from one flower to another. In certain species with long tubed corollas this process has apparently become lost, as the stamens are straight and immovable. He also showed the methods of fertilisation in Primroses and Amaryllis. A Tea Rose exhibited by Mr. Bennett profusely covered with fruit showed the beneficial effects of artificial fertilisation, this being the second crop borne this season. A branch of Hippophaë rhamnoides covered with fruit gave occasion to describe the different organs utilised in forming fleshy fruits, such being the calyx in this case, as in the Mulberry; whereas in Pears and Apples it was the flower-stalk. A curious illustration was seen in a specimen from the Dublin Botanic Gardens, in which the stalk alone had swollen, there being no fruit proper at all. On the other hand, in Cycas revoluta, specimens of which were forwarded by Mr. Hudson, of Gunnersbury, it was the fleshy coat of the seed, but which are borne on the edges of reduced leaves and not within the

pods. In alluding to Cycas, Mr. Hudson remarked on the former abundance of Cycadaceous plants in England, as testified by the fossil remains found at Gristhorpe, near Scarborough, and at Portland. Trunks of such trees may be seen in the rockery in the conservatory of the Royal Botanic Gardens, Regent's Park.

**The Dodwell presentation.**—We are requested to state that it is proposed to close the list of subscribers to the fund now being raised to make a presentation to Mr. E. S. Dodwell at the end of the present month, November. The object of the presentation, it may be briefly stated, is to show the sympathy of their brother florists with Mr. Dodwell in his present debilitated state of health, which has made it necessary for him to remove from the suburbs of London to a purer country air, while at the same time it may serve to cheer his declining years by an expression of their appreciation of the services rendered by him during an active life to the cause of floriculture, the advancement of the Carnation and Picotee in particular, including his successful efforts to bring about in the southern portion of the kingdom the revival of a taste for floriculture, in some at least of its phases, of which the existence of the Auricula and Carnation Societies is a witness. Those friends who have not yet subscribed, and who intend doing so, are reminded that they should at once send in their contributions, either to the treasurer, Mr. C. Turner, Royal Nurseries, Slough, Bucks; or to the secretary, Mr. T. Moore, Botanic Gardens, Chelsea, London, S.W.

#### OBITUARY.

It is with much regret we have to record the death of ALEXANDER INGRAM, gardener to the Duke of Northumberland, at Alnwick Castle. Five weeks ago he was laid up for the first time with an internal complaint which no medical treatment could relieve. On the 15th ult., the day after the great storm, he was, however, able to leave the house and give directions about removing the plants from the great conservatory, which was nearly destroyed by a large tree falling upon it. After that he took to his bed, and died on the 4th inst. at the comparatively early age of 58. During the fifteen years he had the charge of the gardens at Alnwick Castle much has been done by him to improve them. Indeed, Mr. Ingram has in a great measure renovated the place, and he will long be remembered in the north of England as a most industrious and painstaking gardener. Before going to Alnwick he was for several years gardener to the late Mr. Blandy, at Reading.

**Garden Appointments.**—Correspondents will oblige by sending us intimation of any changes in gardeners' appointments.

**Names of fruits.**—C. P.—1 received in a smashed condition; 2, Kerry Pippin.

**Names of Plants.**—J. Jenkins.—1, Alnus incana (Alder); 2, apparently Cupressus microcarpa.—F. B. W.—1, Oncidium Forbesi; 2, Sonerila margaritacea; 3, Polypodium lycopodioides; 4, Adiantum assimile.—Mac.—Centauria montana.—F. T. D.—1, Berberis vulgaris (common Barberry); 2, Adiantum Capillus-veneris; 3, send in flower or fruit; 4, Santolina incana.—Amateur.—1, Oncidium flexuosum; 2, Matricaria inodora; 3, Felicia tenella.—Maclean.—Cotoneaster Simonsi.—Mrs. H. (Fareham).—Cotoneaster frigida.

A PHOTOGRAPH has been received of a pretty garden water scene without any reference.

#### COMMUNICATIONS RECEIVED.

S. N.—W. W.—W. E. B.—J. E. C.—C. A. W.—J. M.—W. F.—H. E. Mrs. H.—K. K. G. B.—R. G.—L. B. C.—P. H.—S. N.—N. N.—J. G. B.—J. J.—D. B.—J. S. W.—S. M.—J. G.—J. C. B.—C. W. D., 2.—P. B.—J. C.—Herrn G.—F. B.—H. C.—W. B.—J. S.—J. McG.—B. H.—A. M. J. M.—G. J. A.—D. T.—J. T.—B. W.—S. of A. M.—J. S. T.—W. W.—G. S. & Co.—Mrs. H.—W. T.—A. R.—H. S.—W. T.—H. P. W.—C. P.—J. C. A.—H. T. W.—R. P.—G. S.—E. F.—M. N.—K. & Co.—G. C. N.—J. H.—Mac.—J. C. F.—W. E.—S. & Sons—F. T. D.—M. N.—G. S.—E. S. D.—C. M. O.—T. B. W.—J. E. L.—W. G. E.—An amateur—Dr. P.—J. D.—T. W.—J. M.—H. T. T.



No. 522. SATURDAY, NOV. 19, 1887. Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—Shakespeare.

## ORCHIDS.

## ORCHIDS TASTEFULLY ARRANGED.

At no season are Orchid flowers more appreciated than in winter, either in conservatories or in dwelling rooms. Other classes of plants, such as *Chrysanthemums* and *Pelargoniums*, may render a conservatory quite as gay in November, or even more so than Orchids, but Orchids alone possess that elegance and beauty of form that characterise the majority of the more select types. One objection, and at one time a serious one too, advanced against Orchids ever becoming popular was that their flowers could only be enjoyed in a cut state on account of the plants requiring an unhealthy atmosphere to grow in. Such an objection cannot, however, now be entertained, for it is pretty generally known that the majority of them are not to any serious extent, if at all, injured by being placed while in flower in the congenial atmosphere of a conservatory, such as that commonly attached to a dwelling house. In some collections the flowering plants are either intermixed with those not in flower, or they are arranged in a group by themselves; but we seldom meet with them arranged as they should be in an artistic manner with other suitable plants.

Judicious arrangement of this kind is well exemplified at Mr. Vanner's, Camden Wood, Chislehurst. Here is a spacious conservatory, the atmosphere of which is such as would not be detrimental to the health even of invalids, were they to stay in it for hours. Yet it contains a wonderful variety of plant life, plants cultivated merely for their foliage, others for their flowers, the whole being enlivened by a beautiful display of Orchid bloom brought from the hot and moist atmosphere, or cool and damp air as the case may be, of the houses adjoining. It is under such arrangements as this that the full beauty of Orchids is seen to advantage. Gorgeous *Cattleyas* and *Lælias* are here associated with the most graceful of Palms, Ferns, and other plants, the effect of which is excellent. Then again in the case of the *Calanthes*—Orchids that want a little greenery to show off their elegant flower-spikes, and to hide their uncouth bulbs. Here may be seen *Calanthe Veitchi*, with spikes well nigh a yard long, peeping out from amidst ornamental-foliaged plants, and the same with the various *Oncidiums*, *Odontoglossums*, and genera of a similar character; while depending from the roof are pots, baskets, pans, and blocks, of those kinds that succeed best under that mode of culture. The aspect of this conservatory, taken collectively, is so unlike that of the ordinary run, that the arrangement which it exhibits is well worthy of imitation. Though some of the plants remain for weeks in this house, the instances of injury caused thereby are rare.

To summarise the most noteworthy of the Orchids now in flower, we may mention the following: Of the rarely-met-with *Cattleya maxima* there is a good sized plant bearing two spikes with five flowers on each. It is surprising this Orchid is not more grown than it is, for it is one of the most beautiful of all, such delicate pencillings in the flower as it possesses being unique in the genus. The superb *C. exoniensis* is bearing a couple of good flowers, others past their best affording sufficient indication of its free flowering tendency. The true autumn form of *C. labiata* is represented by a fine flowering plant, and its extreme beauty yields to none of its more re-

cently introduced compeers. *C. marginata* or *Lælia marginata*, whichever it may be, is grown really well in suspended pans, in which it is finely in flower. Some of the blooms, too, are exceptionally large, and most of them possess that characteristic frill-like margin that renders this species so beautiful and so distinct from *L. Dayana*, which, however, may be readily distinguished by the prominent ridges that run along the interior of the labellum. Various *Odontoglossums* add considerably to the display; several of *Alexandreae* are fine, and an uncommonly dark form of *Pescatorei* is worthy of special note. Masses of *O. Rossi majus* suspended in shallow pans present a fine display. *O. grande*, one of the most useful of all, is likewise in great beauty. A scarce, but extremely handsome species is *O. madrense*, with its large white and yellow centred flowers that emit a delicious fragrance. It is a very desirable autumn flowerer, and *O. nebulosum*, of which there are some fine flower-spikes showing, is a plant which everyone should possess. *Pleiones* in hanging pans are beginning to throw up crowds of bloom, and later on they will be a fine feature. As an instance of the fine growth they attain here, it may be mentioned that a single bulb of last year not only produced fourfold, but even one over that number, a fact which also applies to *P. lagenaria* and *maculata*. Of the pretty *P. Wallichiana*, which does not appear to share the popularity bestowed on the other two, there are some grand flowering specimens. One plant above all others in this house engaged our attention. It was an exceptionally fine form of *Vanda cœrulea*, which, as far as we can recollect, is identical with that splendid variety which we saw in the Burford Lodge collection last year, the flowers being large and unusually pronounced as regards colour. The remarkable fact is that it is merely a chance fragment of an importation, though we did not suspect it, as the plant seemed so thoroughly established and in such good health. It is on the bare surface of a block of wood. The difference between a poor and fine variety of the cœrulean *Vanda* is about as wide as that between an exhibition *Pansy* and its progenitor of the corn-fields. As far as our own observation goes, there is an enormous preponderance of indifferently coloured varieties.

In this collection one form or variety of *Calanthe Veitchi* is particularly rich in colour, in fact as deep as *C. Sedeni*, the lovely variety raised by Mr. Seden, at Chelsea, but which unfortunately is still very rare. There seems to be three well marked varieties in the *Veitch Calanthe* here; one has a pale lip, almost white, and another is intermediate between this and the deep variety just mentioned. They are grown well, and the beauty of each kind is displayed to the best advantage. Of the charming little *Sophronitis grandiflora* there will shortly be a goodly show; indeed, already creditable masses of it are in flower. *Masdevallias* are represented by an exceptionally good collection, some of which are in flower, notably *M. Peristeria*, *Davisii*, *Chimera*, and the rare, but not very attractive *M. velifera*. That this last species should be thought so much of is a good illustration of the varied tastes that exist with regard to flowers, for not only is the colour unattractive, but the flowers emit a vile perfume. Among the collection not in flower we noted such varieties as *M. Backhousiana*, *bella*, *Nycterinia*, and also a goodly lot of *M. towarensis*, which need a little more heat than the other section of the genus.

The Orchid collection here occupies some half-a-dozen houses, all of which are well constructed. They are not too large, and the roofs have an easy pitch; therefore ample light is admitted. With regard to the stages, a capital plan is adopted; a secondary and movable stage is placed

upon the permanent one, thereby raising the plants as near as possible to the light, while the space (about 1 ft. in height) between the two stages is useful for accommodating plants for a while after they are imported. The supports of the secondary stage are isolated, as it were, from their surroundings by being placed in shallow pans kept filled with water, thus keeping in check any slugs that might be in the house.

Another noteworthy feature in these houses is the absence of drip arising from the condensed moisture of the house, which is often a source of



much evil. This is effected by having all the rafters grooved, and the lower ends of the panes of glass all cut circular, and so glazed that there is but a slight opening between each lap. Under this arrangement the drip inside runs down the centre, through the lap, and so on to the outside of the roof. The opening also serves to some extent as a ventilator. In the annexed sketch the direction of the drip is shown by the dotted line.

We noticed with regard to the Australian and some other *Dendrobes*, that they were being rested in a low temperature. Even *D. bigibbum*, *superbiens*, and *Gouldii*, which usually are grown in a baking atmosphere, were in the temperature of an ordinary greenhouse with plenty of light and air, and the robust growth, even of recently imported plants, clearly indicated that such treatment suits their requirements.

W. G.

***Ansellia africana nilotica*.**—The superiority of this variety over the ordinary form is very conspicuous, the flowers being large and their markings richer and more pronounced. It moreover flowers at a different season, there being plants now finely in flower in the collection at Kew, where this form existed for some years without a name. A year or so ago Mr. Baker gave it the name of *nilotica*, derived from the plant's native habitat.—W. G.

***Vanda cœrulea* at Crewe Hall.**—Amongst the Orchids now in flower here is a fine healthy plant of *Vanda cœrulea*, bearing three spikes of flowers, numbering respectively seventeen, fifteen, and thirteen. Each flower is about 3½ in. in length by 2½ in. in width, and of a beautiful light blue colour. A smaller plant has two spikes, on one of which are fourteen, and on the other ten flowers.—A. B.

***Burlingtonia granatensis*.** This is a charming little Orchid, as pretty as any of the *Burlingtonias*. It somewhat resembles *B. candida* in habit of growth and flowering. The blossoms are white, of a crystalline transparency, the edge of the sepals being of a beautiful pink, and the centre a soft lemon tint. They are borne in loose drooping racemes that hang over the sides of the suspended pot. Their perfume, though not strong, is agreeable. Now in flower in the cool Orchid house at Kew.—W. G.

**Orchids failing to bloom.** We have a large quantity of *Calanthe vestita*, *rubra oculata*, and *vestita lutea oculata*, all of which have made fine bulbs, having been grown along the front shelf of a Pine stove near the glass, where they get plenty of light, but shaded from the direct rays of the sun. A short time before the flowers (as we supposed) would open we had them moved into the orchard house, but to my great disappointment, just as the blooms are on the eve of expanding they become yellow and the petals and sepals shrivel. *Vestita* is not quite so bad, but its blooms do not open so fully as they ought to do, and they only last for a few days. We keep the plants dry rather than wet, damping the pathway and stages once a day. The temperature ranges from 60° to 70°. I am quite at a loss to know the cause of failure, and shall be glad if some of your correspondents can assist me to a solution of the difficulty. I may also add that we have a quantity of



Gesneras of the *Nagelia* type, fine healthy plants, but the bloom-buds drop off just when they are showing colour. As the failure in question affects all plants alike, it seems to be due to some atmospheric influence. The smoke-flue from the boiler passes through both houses; can that have anything to do with it?—ANXIOUS ENQUIRER.

### THE NEW GROUND AT GLASNEVIN.

WE are glad to say that this is a beautiful piece of ground, sloping rather boldly, but gracefully down towards the river Tolka. Certain irregularities from quarries and the like are being tastefully graded, and if well arranged, as we believe it will be, this new ground will be a noble addition to an already fine garden, increasing its breadth and picturesqueness. A great part of the wall of the old garden should be removed to admit of this, and we would strongly oppose the planting of many Conifers, because, judging by what one sees at Glasnevin already, the Fir tribe does not do well on that soil, though many may look interesting and fresh when young. Conifers will not there attain their dignity and character. Apart from the soil the place is getting too much under the influence of the city, which, like other cities, has the pest of smoke. The best course will be to develop the finer summer-leaving families, which are likely to be more valuable for the country generally, as well as more suitable to the place. The prolonging of the garden by the river is charming, and of the whole slope down to the water. The place, like most botanic gardens, being now dotted over everywhere, it would be desirable to secure a little breadth and repose in the central part of the new ground, and to have as few walks as possible there. The opposite banks of the river, being planted and in the hands of a public institution not likely to disfigure them, come well into the picture. On the whole it would be difficult to find a garden more happily placed.

### GARDENERS EMIGRATING.

GARDENERS would do well to first make enquiry before they emigrate to the United States. Scores of poor fellows get into serious difficulties by coming here at the wrong season. The best, in fact the only safe, season to arrive in New York is during the spring months—February, March, and April, early March being perhaps the best. No gardener should come to this country if much over forty years of age, and if he has a large family of young children, then he should not come at all. If his family are old enough to work, that is another matter, for then they will be likely to earn enough to take care of themselves. But for young, steady single men there is always plenty of work at fair wages, though for the first season or two the best gardeners are often seriously at fault, owing to the great difference in climate, and gentlemen employing gardeners will always give the preference to men having a few years of American experience. Many English gardeners coming here possess knowledge of but little use; for example, their knowledge of Pine-apple, Peach, or Melon forcing avails them not. Pine-apples and Melons are sold in our markets as cheap as Cabbages from June to September, and Peaches from July to October are sold in the months of September and October often of excellent quality at 4s. a bushel. The following reprint from my catalogue tells the condition of gardeners' wages here: "We are constantly having applications for gardeners from our customers in sections of the country where none have been previously employed, the applicants usually inquiring of us the rates paid in New York. As a guide to such, and to save us time in replying, we may stat

that the rates paid in the vicinity of New York now vary, for single men, from \$20 to \$40 per month and board, and for married men from \$30 to \$60, with house to live in. The average of the former may be given as \$30 per month and board; of the latter, at \$45 per month and house. The grading of prices paid, of course, is in the ratio of the ability, or the amount of charge to be taken. In several cases where unusual charge is required, or where a man displays unusual ability, a large advance on these rates is paid. In no occupation is so much injury done as in the garden, greenhouse, or graper by changing men. In horticulture the work done is nearly all prospective, and what the gardener does or neglects to do to-day will not probably show for three or six months after; hence the necessity of keeping the man satisfied in his position, for if not satisfied and on the alert to move, it is not probable that he will interest himself as much in his work as if he was contented with his place. For this reason we have ever considered it bad policy to displace a good man for a few dollars advance in salary. We ourselves, with all our opportunities of selecting men, have often paid foremen one-half more than we could have got equally good men for, just to make them entirely satisfied with their position, as we well know that our interests would suffer if they were not so."

New York.

PETER HENDERSON.

### EDITOR'S TABLE.

ODONTOGLOSSUM GRANDE 6 IN. ACROSS.—I send for the editor's table a flower of *O. grande*, which measures 6 in. in diameter. The plant from which it was cut is bearing a crop of four spikes with fifteen flowers, and is growing in a 6-in. pot in my cool Orchid house.—J. STEWART, Langford Park, Maldon. [It is fortunate that the gardens of our island in the grey northern seas can nourish such noble exotic blossoms to cheer the winter's day for us.]

FLOWERS FROM ST. BRIDGID.—There is many a hillside that looks bare and arid in the distance which, when we get near it, is richly jewelled with flowers; as, for example, the Maritime Alps and many other rocky hills round that part of the world. Going into Dublin Bay, the Hill of Howth does not seem a very promising garden ground, however well it comes into the picture; but anyone seeing the pretty things we get from St. Bridgid who haunts that famous hill would think well of it as a gardenland. First a beautiful nosegay of double and semi-double Anemones, purple, magenta, pale, and various colours, as fine as one could expect in spring. We like the semi-double forms well because they show the black centre and are better in shape than the double kinds. With them also come fragrant heads of a single yellow Auricula, which never came to us before this season; also Sweet Peas quite fresh and large, Violets, a good Clove Carnation, double Primroses, blue and red Salvias, and brown Calceolarias. In such a locality it would be interesting to have a record of the flowers from day to day throughout the year, and most desirable to seek out all the autumn and winter flowers that would adorn the spot.

OXLIPS AND PRIMROSES.—November 14; a sweetly coloured nest of Primroses from Manchester, with a yellow Oxlip in the centre, and then the pale sulphur double Primrose with the double crimson, and then a richly coloured and varied group of the pretty single Primroses. Mr. Brockbank writes, "For your 'table' I send a bunch of Brockhurst Primroses, of all colours,

taken in single flowers from as many plants in the open garden, and I think you will agree that you never saw such fine Primroses in the middle of November. We have hundreds in flower, both single and double, as well as Polyanthuses. If a lady wished a breast posy, I think this will be found to vie with the more pretentious flowers of the hot house. Please also look at the individual flowers as a sample of our Primroses. I think they promise well for the spring, when the blooms will of course be stronger and finer in colour."

A WREATH OF ROSY-LILAC BERRIES, TWO and half feet long, closely set in little bundles, is a pleasing object at this season. Mr. Latham, curator of the Birmingham Botanic Garden, who sends it, writes: The fruit-laden shoots of *Callicarpa purpurea* have been very beautiful for the last six weeks. They are of this season's growth, and about 3 ft. to 3 ft. 6 in. long. We grow them as standards; they will last six weeks yet. I know no plant more useful or attractive at this season for a warm greenhouse or conservatory.

THE GREAT CHRISTMAS ROSE (*Helleborus altifolius* or *niger maximus*).—Miss Owen sends us this from Gorey, and one never tires of admiring its fine form and the dense dotting of delicate rose about the back of the flowers and over the flower buds. The first botanical name above given is, we think, the best for this plant, which is a fine object, well cultivated, and, above all, well placed. The flowers, appearing with the cold autumn rains, should find some shelter, and be free from the splashing from the naked earth. A bold grouping in a sheltered corner on a Grassy or Mossy bank would be good. If the Grass were objectionable, one might use instead some of the green Mossy Saxifrages to form a turf.

ASTER GRANDIFLORUS.—This late and fine Starwort comes from the Rev. Mr. Ellacombe, at Clyst St. George, in Devon. Perhaps the plant thrives better there than it does in the district around London, as one would expect. It must be a pretty plant in countries, such as the south of France, having a sunny autumn.

CHRYSANTHEMUMS.—At one time our botanical gardeners did not bother much about the beautiful or the æsthetic, but all that is changing for the better, and we are glad to see some of our younger curators keen about such matters. Mr. Burbidge in sending an interesting collection of Chrysanthemums writes: "The queen of autumn is now lovely with us, as you may see. We do not leave one big bloom on the end of a fishing-rod, but like to have them in loving clusters. For cut blooms for decorative purposes Elaine is now charming, and forms a fine contrast grouped in a vase with a few of the finer zonal Pelargoniums, which are a little speciality with us in the dull winter season."

VIOLET MARIE LOUISE.—A delicious bunch of this from Mr. Warden, of the Gardens, Clarendon Park, who writes: "Perhaps it may be of interest to some of your readers to notice the peculiarities of this Violet. We have grown all we could find space for during the summer months. My object is to point out the merits of the above kind. I have had plants of it from different parts of the country, as well as perpetuated those of my own, and, strange to say, none of the former have yet flowered with me, while my own have bloomed profusely since the first week in September, and still continue to do so, both in the open borders and in frames. Those planted under a wall with a northerly



aspect were the first to bloom. Neapolitan is also grown, but not nearly so extensively as Marie Louise; it has been subjected to precisely the same treatment, but has opened no flowers until now (11th November). I visited several gardens lately where these Violets are grown extensively, but no flowers could be gathered."

**A BROAD-LEAVED SAXIFRAGE.**—Among a beautiful series of flowers from the always flowery Belvoir is a very large-blossomed species, *S. ligulata*, the well-formed, Peach-like flowers of which are nearly, or quite, 2 in. across. No doubt this late flowering is quite exceptional, owing to the mild weather, as we have lately seen broad tufts of the same kind without a flower. It would be pleasant to meet with anybody who really did justice to these plants, not as single dots in bare borders, but each as a wide-spreading colony passing away under the adjacent shrubs. They are good all the year round, and so grown would be lovely at the flowering season.

**INGRAM'S ESCALLONIA.**—Among various shrubs sent us from Belvoir this is the prettiest, and has good sized rose flowers. It is said to be somewhat of a "miffy" grower, but if it flowers freely it must be a valuable bush. Do the hills suit the Escallonias as well as the sea-shores?

**THE BELVOIR DWARF WALLFLOWER.**—A very brave looking, large-flowered, and golden-yellow Wallflower, which, like other things, is mistaking the season. It is a gain for spring and hardy gardening. We are not merely rich in species now-a-days for spring flowering or for almost any other purpose, but old favourites, like the Wallflower, break into so many distinct races that each forms almost a garden of itself. It would be an interesting thing to put the seeds or young plants of the various colours of Wallflower now obtainable along some old wall, or ruin, or bridge.

**THE CZAR VIOLET.**—Leaves of this Violet that come to us from Miss Owen, Gorey, are nearly as large as tea-saucers, and the flowers bold and long stalked, forming together such a bunch of Violets as one never saw in old times. The Wexford coast would seem to be a very favourable one for many flowers.

**APERA ARUNDINACEA.**—A very graceful Grass, tall, slender, and feathery. It is, we believe, a perennial, but not being yet quite sure of its name and distribution, we will say no more about it for the present. It comes from the College Gardens, Dublin. It looks like *A. spica-venti* gathered early, but is said to be a perennial.

**THE GREAT CHRISTMAS ROSE,** from Mr. Archer-Hind, in South Devon,  $4\frac{1}{2}$  in. across, reminds one that few single Roses are so very fine as this in form or size. It is certainly a noble plant, and in foliage and flower perhaps the bravest of the many herbs that dot over the Bosnian hills and copses. A grand plant for England, being so hardy and only wanting care in growth and position to make it a source of lasting enjoyment in the garden.

**ANEMONES IN NOVEMBER.**—A brilliant and large nosegay of Anemones in November from Mr. Archer-Hind, surprising to us who see now only bare ground. The flowers are very large, and there is great variety among them, in addition to the selfs there being various marbled and prettily marked kinds. These flowers, in his genial corner of England, seem to be keeping time with their fellows in the fields of Palestine

and other parts around the Mediterranean, where Anemones grow and blossom in the cool but there also sunny months.

**THE WINTER HELIOTROPE.**—To the spell of very mild weather we, no doubt, owe the charming series of flowers from Belvoir which usually only come forth in spring, but this old friend is of the season, and its grateful scent is very welcome. No place should be without a colony of it, but it should be strictly confined to one clump of shrubs or one bit of a hedgerow, because if it gets the chance it becomes a sad weed. At Linton it carpets and fringes an isolated clump of shrubs, and that is the best way to deal with it except outside the garden altogether.

**STOCKS.**—It is refreshing to see the stocks so late from Belvoir, as Stocks are always delightful; they are among the many plants that never should be trusted to the chances of the mixed border. They should have special culture in the nursery or other reserve garden in which plants should be grown for their own sakes, without relation to any general scheme or design of flower gardening. Not that they do not come well into such; but if only for cutting them, without spoiling any conspicuous beds, they should be always plentiful in the reserve garden.

**VINE LEAVES.**—Mr. Cameron sends from Ericstane, Moffat, a series of Vine leaves to show the singular beauty of their colour and its wide range both as to depth and marking. Some are all of one colour, often pale orange; others with the same colour as a ground have rich crimson buds or marking on the surface. Many are green with much fine and varied crimson tints or splashes predominating. One or two are madder brown, and one crimson, mixed with warm sepia. All the bright colours are on the upper surface. I have seen the American woods in autumn and many bright leaves, but never such glorious colour from one species. Mr. Cameron does not name the kinds.

**HOLLIES FROM DUBLIN.**—A very pleasant bunch of Hollies in full berry comes from the College Gardens at Dublin, where the Hollies have lately been very handsome in berry, and where they were originally and wisely planted extensively by Mr. Bain; no other shrubs would have done so well so near the city. They are beautiful at all seasons, and the berries are more abundant this season than usual. The yellow berried and the variegated kinds as well as the green ones are all brilliant when cut and full of berry, and the effect is as good by artificial light as in the day.

**Monstera deliciosa at the College Botanic Garden.**—Most of our readers are no doubt familiar with this remarkable plant remarkable for its gigantic foliage, the curious hole-like perforations of the leaves, and the Pine-apple fragrance and pleasant flavour of its fruit. The way in which, and the distance to which, its great, thick, snake-headed aerial roots will extend in search of food and drink is very curious, and may be seen any day by visitors to the College Garden. At the end of the Orchid house a plant of the *Monstera* is growing attached to the back wall. Sunk in the floor of the house is a water-tank, and of this the plant has made use in a most remarkable and interesting way. Taking their course somehow along the shelf, a pair of these root snakes make their way to an opening, and, darting down, bury their heads in a tank. There each developed a great circular radiating brush of rootlets, the whole looking like a pair of chimney sweeper's brushes. The vagary is curious and in-

teresting, and the estimable and accomplished curator, Mr. Burbidge, if present, will, we have no doubt, be happy to show and explain it. — *Irish Farmers' Gazette.*

## THE ROSE GARDEN.

### THE ROSE SEASON OF 1881.

I HAVE read with much interest the remarks of Mr. Fish (p. 435) on October Roses. My experience coincides almost exactly with the account he gives of the past Rose season, and the failure or success as regards different kinds of Roses. With me I could cut the finest and best the last week in June and during the first two weeks of July. During that time Marquise de Castellane, Duke of Edinburgh, Dr. Andry, Horace Vernet, Alfred Colomb, Senateur Vaisse, Louis Van Houtte, and Monsieur E. Y. Teas were especially fine in both size and colour. The autumn bloom has been scanty and generally poor in quality. Occasionally I have cut a really good bloom (a *La France* on September 24 was grand), but the net result has been very disappointing. I must take exception as regards *Gloire de Dijon*. This Rose began to bloom with me on a warm wall early in May, and throughout the season I have scarcely ever been without good flowers of this tried and useful variety. I grow it all ways, one dwarf plant on the Brier having been very prolific in bloom, and as I write (November 2) there are several really fine clean half-blooms on this particular plant. Alas! this cannot be said of any other variety. I still have a few blooms, poor certainly, but acceptable at this late season, viz., *Marquise de Castellane*, *Etienne Levet*, *Marie Finger*, *Hippolyte Jamain*, *Sultan of Zanzibar*, *Dupuy Jamain*, *General Jacqueminot*, and *Exposition de Brie* are amongst the best of the Hybrid Perpetuals, and *Alba rosea*, *Madame Lambard*, *Marie Van Houtte*, *Celine Foestier*, and *Souvenir de la Malmaison* amongst the Teas, &c.

Previous to the destructive gale of October 14 I had a fair supply of bloom, and on the Wednesday before I cut very good blooms of the following kinds, the colour being very fine, viz., *Fisher Holmes* (lovely), *Louis Van Houtte*, *Le Havre*, *Dr. Andry*, *Alfred Colomb*, *Madame Victor Verdier*, *Charles Lefebvre*, *Dupuy Jamain*, *Senateur Vaisse*, *La France*, *Jules Margottin*, *Gloire de Dijon*, and *Souvenir de la Malmaison*. The gale did me much damage, and robbed me of what would otherwise have been an acceptable and useful supply of bloom during the closing days of the Rose season. Many of the dwarf plants were almost twisted out of the ground; standards had their stakes broken off and were driving about furiously, while plant. on walls were unnailed and very much battered. The destruction to the foliage was complete, many of the plants reminding one of mid-winter.

In closing these few remarks, I would just say that the planting done last November and December turned out very badly. The growth of the plants was poor, and all seemed to lack the vigour so necessary to obtain good bloom. In previous seasons I have not experienced this failing to nearly such an extent, and I can only attribute it to the hard winter and the long spell of east wind and drought which followed. The established plants were pruned very severely at the beginning of March, and from these I have had good strong growth. Throughout the season we have been much plagued with aphids, mildew, and blight generally, and if the Rose grower can pass through a season such as this has been, generally speaking, without feelings of annoyance and disappointment, it speaks well for his delight and appreciation when we shall have a



really good Rose season, which I trust may be in 1882.

WILLIAM WALTERS.

*Rurbon-en-Trent.*

#### ROSE HOUSES.

ALTHOUGH Rose houses are not altogether a new feature in gardens, they are not so often met with as they ought to be. Under glass Roses may be produced when they cannot be had out of doors. Here we have no Rose house, properly so called, but we have a large unheated structure—a fruit and Rose house combined. As I did not require all the space for fruit, I planted all the available spaces with Rose trees; on the pillars I have climbing kinds, between them a few standards, and on all the principal supports Tea Roses are trained, and from this house we cut Roses eight months at least out of twelve.

**Soil.**—According to my experience, as regards growing Roses in houses in the manner suggested, I am satisfied that they do not like to be restricted at the root. They appear to me to form three or four large roots, which proceed from the base of the stem at various points, and travel far and wide in search of food, and in order to expect lasting results, the soil must be of the right sort. Although I will leave the construction of the house to individual tastes and circumstances, I may say that if I had to choose the form of house it would be one with a flattish roof, so that when the Roses were in flower they could be conveniently seen. In any case the borders must be 2 ft. deep and from 4 ft. to 6 ft. wide, according to the space at command. Artificial drainage will be unnecessary except where the house stands in a low, damp situation. In fact, drains would be a positive evil in all but the very worst situations. In most cases it will be necessary to remove all the old soil and fill up with good fibrous loam. Where the latter is good, manure should be avoided, as the Roses will grow well without it.

**Training** next demands attention, but this will in a great measure depend on the form of the house. Training Roses to the roof as we do Vines is much too formal; on the contrary, a free and natural disposition of the growth will certainly be most appreciated. In suitable houses small bowers may be formed over the pathways, but they should not be more than 3 ft. wide, and they may be made to festoon from the roof and produce a charming effect. If I had to make a Rose house I should introduce as many pillars as possible, plant climbing Roses against them, and train them in bowers over the walks, so as to keep the growth as much as possible from touching the glass, for I find that if the plants come near the glass they soon get into a tangled mass and do not produce many flowers. In fact I should only look upon the roof as a protection, not as a support on which to train the Roses. Roses like plenty of light, but they do not do well when trained close to the glass, and in order to afford the full amount of light possible, the glass should reach to the ground line.

**Varieties of Roses** for planting in houses will vary according to circumstances, but no one can make a mistake if they give the preference to the Tea-scented varieties and a few Noisettes. Cheshunt Hybrid makes a capital pillar Rose under glass; it grows vigorously, flowers most profusely, and its fragrance is not surpassed by that of any other Rose in cultivation. Duchess of Edinburgh is also a good variety for a pillar, as is also Reine Marie Henriette, President, Safrano, Marie Van Houtte, Elize Sauvage, and Letty Coles. For festooning and covering large spaces I should select Maréchal Niel, Gloire de Dijon, Climbing Devoniensis, Celine Forestier, Lanarque, and Solfaterre. Dwarf bushes may be grown in the beds, and a few half standards may be planted if desired. For these two forms any varieties that are favourites may be selected. Amongst the Tea-scented varieties, Niphetos and Madame Pradel make good bushes. The Hybrid Perpetuals should include La France, Madame Lacharme, and Senateur Vaisse, varieties which do well under glass.

**Planting.**—Roses may be planted at any time when in pots, but I prefer to plant them when they are at rest and without leaves—any time, say, from November to the end of January. Everything being ready, shake off all soil from the roots and spread them out evenly about 4 in. under the surface. What are called own root plants are the best. If budded or grafted on the Manetti, the point of union between stock and bud must be buried 1 in. beneath the surface. Tread the soil firmly about the roots, and after planting give a good soaking of water. No pruning will yet be necessary.

**After management.**—The great secret as regards growing Roses under glass is to keep them well watered all the time they are growing, and at other times, too, the soil must be kept moist. In the second year after planting the roots will have extended some considerable distance, and they will keep extending until they reach the boundary walls. From this time, from March till the end of October, very liberal waterings will be necessary. A few cans of water will be of no service to them; as some sort of a guide in this matter I may say that twelve gallons to every square yard of border every three weeks from May 1 until the end of July is the least quantity required to be given at one time. During other parts of the season once a month will suffice, and one soaking in December and another in February will carry them safely through the winter. Our Roses have considerably more than this, as we water with tubing attached to a water pipe laid on in the house, and even with this convenience we are sometimes troubled to keep mildew down, which, I find, attacks the growth if there is any neglect as regards watering.

**Pruning.**—Four years should elapse from the time of planting before any serious amount of pruning will be required amongst the Tea and Noisette varieties; a stray branch cut away to maintain the contour of the plant is all that is required for the second and third year, except cutting off the tops of any shoots that have flowered. After that time I find cutting out some of the old wood amongst the dwarf plants does good, as well as thinning out the shoots of plants on bowers and pillars, to make room for younger growth, which produces the best flowers. The Hybrid Perpetuals will require more pruning; and while on the subject of Hybrid Perpetuals I may remark that I have not recommended any of the climbing varieties of that section for this purpose, because I have not been successful in growing them, although I have tried several of them. Probably, however, my management has been in some way at fault.

J. C. CLARKE.

#### PLANTING ROSES.

TIME, ever hurrying onwards, has once more brought the Rose grower face to face with the planting season. But I fancy I hear someone say, You are a little too early; the foliage is not yet off the Roses: the extremities of the shoots are not yet ripe. What matters that? Without frosts the foliage would remain on many varieties, under certain circumstances, until Christmas. Would you therefore wait until then before you planted? Certainly not; and if the ends of some of the lateral shoots are not ripe, are they wanted for the bloom of next year? No; in March we cut these away. It will therefore be seen that I am an advocate for early planting, and that I assuredly am, if planting be done in the autumn at all. In proof of this, some three weeks ago I wanted some ground for immediate use, which had upon it a number of dwarf Roses in full leaf, and indeed, I may say, in full autumn bloom. These were taken up and heeled in, the foliage withered, the wood partially dried. But was that a sign of death? No, for only the other day I took some of them out of the ground to examine the roots, and found them full of life, full of new white fleshy fibres, some measuring 2 in. in length. These then to all appearances were suffering—that is, so far as the tops were concerned; but, on the other hand, they were getting new rootlets ere the hard weather

set in. But how and where shall we plant, and what is the best method of procedure? So many visit our exhibitions, give orders for Roses selected from blooms shown, and expect, after what I term “sticking” them in their garden, to see as fine blooms produced upon the purchased plants as those shown on the exhibition stands, and nine out of ten, not getting such, are disappointed, and either blame the nurseryman or the plants. The fault is their own—not the nurseryman’s. For outdoor-grown flowers none requires so much careful attention and richness of soil as the Rose; hence the cause of so many failures.

**Planting.**—In the case of those who have a Rose soil the task will be comparatively easy, but in that of those who do not possess a rich clay loam the difficulty is not so readily overcome; for while the former have little to do except enriching their soils by means of manures, the latter have to make their beds with some good old turf from an old pasture, getting as much of the marly clay along with it as possible. If the Roses are to be planted in a bed, the whole of the light soil must be removed to the depth of 3 ft. or 4 ft., and the bed filled up with maiden soil, using along with it a liberal supply of good, well-decomposed manure. If planted singly near drives or walks, holes should be made large enough to contain a good sized wheelbarrow full of the fresh soil. The distance apart at which dwarfs should be planted must be determined according to requirements; if wanted for pegging down, from 18 inches to 2 ft. apart will be sufficient; if for massing, a little nearer; but some robust varieties, such as John Hopper, Paul Neron, &c., need more room than others, such as Marie Baumann, Alfred Colomb, La France, Louis Van Houtte, &c. For standards I can lay down no unalterable law: if for a drive they should be placed at distances in harmony with the shrub growth, &c.

**Situation.**—A rosery should occupy the best possible place in the grounds, sheltered from the north-east winds, and away from any large deciduous trees. Roses do not like neighbours, and to plant them in close proximity to any tree is to court failure. I remember going into a garden once and saw planted round each standard Rose a clump of Violas, and in another a clump of Old Man’s Pepper. Mary Howitt may be a lover of flowers, but I think when she wrote, “Around the Rose the Convolvulus twined,” she had but little knowledge of the tastes of the Rose. Be that so or not, Roses like a spot to themselves, and those who fill up their Rose borders with annuals or bedding plants cannot expect success.

*Boston.*

H. FRETtingham.

#### NOTES OF THE WEEK.

**THE YELLOW NELUMBUM.**—This plant, to which attention is drawn this week by an interesting illustration, is said to be hardy enough for England, but we have not seen it tried in the open air in this country. We have, however, seen it flower finely in the open air in the Garden of Plants, Paris, in a position where the water was frozen over every winter. It was in the sunny sunken reserve garden, and the foliage and flowers came boldly above the water, the flowers being very large and of a soft creamy yellow; the probabilities are therefore that it is worth trying in warm and sheltered nooks in the south of England, particularly in spring or other not very cold water.

**NOVEMBER FLOWERS.**—I send you first *Helleborus maximus* in its perfect state, pure white with pink pistil, but free from the pink tint of immaturity, decay, or accident; secondly, what I believe to be *Helleborus intermedius*, though some have called it *cupreus*: thirdly, bunches of *Symphoricarpos* berries, three kinds, the smallest not yet fully coloured, but all ornamental: lastly, a selection of *Anemone coronaria* of various colours, than which nothing can be more beautiful at this season, and they are plants that can be grown anywhere. I send, too, a flower of the *Aponogeton*.—T. H. ARCHER-HIND, *South Devon.*



**RAPHIOLEPIS SALICIFOLIA.**—The flowers of this old greenhouse shrub are welcome at this dull season, even though they are not of the showiest order. They are small, white, and freely produced at the tip of each small twig. Some plants of it now adorn the greenhouse at Kew.

**CLENKOWSKIA KIRKI.**—This plant, the subject of our coloured plate for the present week, is a very lovely and distinct one, to which, owing to several circumstances, our plate does not do sufficient justice. We feel assured that none will be disappointed with it who grow it well. The colour is very delicate.

**JAPANESE ARALIA.**—A fine spreading bush of this is now a striking object in the temperate house at Kew, where it is bearing huge panicles of its tiny flowers, much resembling those of the Ivy, except that they are whiter. As seen here planted out on free soil it forms quite a different object from the starvelings usually seen in pots. At Kew it is called *Fatsia japonica*.

**GARDENERS EMIGRATING.**—The valuable advice given this week in our columns by Mr. Peter Henderson, the well-known American horticulturist, should be remembered by all young men connected with gardening or nursery work who have thoughts of emigrating to the United States or Canada. We believe no man in America has had larger experience on this point than Mr. Henderson.

**AN UGLY TOMATO.**—Perhaps the most unprofitable pursuit in all gardening is that after the LARGE, which frequently in the case of a Tomato means the ugly and inferior. No large Tomato we ever cut up at all equalled in quality or texture one of the ordinary size. A German house is now offering a huge kind which they claim to be surrounded by excrescences and weighing several pounds. The figure of this looks somewhat like that of a large crab with its legs cut off. We trust it may die an early death from neglect.

**MORUS PENDULINA.**—In the temperate house at Kew there is a large bush of this bearing a number of slender catkins some 8 in. or 9 in. long; before opening they are of a deep green colour, but as the flowers expand they become of a brighter hue. The leaves are lanceolate ovate, about 6 in. in length, and of a very dark green colour. Although not showy, owing to the length of its singular catkins it arrests attention. This plant is a native of Norfolk Island; therefore it requires the shelter of the greenhouse.—H. P.

**A BEAUTIFUL WINTER PLANT.**—The value of the old *Dichorisandra thyrsiflora* as a winter-blooming plant appears to be quite overlooked in a general way, yet it would be difficult to name a plant that produces such handsome ultramarine-blue flowers for such a length of time. In the Palm house at Kew there are plants of it that have been in flower for some weeks and that still promise more bloom. It grows about 3 ft. high, the stout erect stems being furnished with broad, handsome leaves, and terminated by a long dense cluster of bloom.

**RIVINAS IN FRUIT.**—For the decoration of stoves at this season of the year it would be difficult to surpass plants of these such as are growing in the T range at Kew, the specimens being profusely laden with highly coloured berries. The species there represented are *R. humilis*, in which the berries are of a purplish crimson colour; *R. lævis*, with berries of a much brighter crimson, and collectively more showy; *R. flava*, the fruits of which are pure yellow. Grown in small pots for table decoration, these Rivinas would be very useful, especially as their cultural requirements are not great, all that is necessary being liberal treatment when growing.—H. P.

**ORANGE-FLOWERED CESTRUM** (*C. aurantiacum*).—It would be difficult to name a more desirable greenhouse shrub for winter-flowering than this Mexican plant. A large bush of it, supported by one of the pillars in the greenhouse (No. 4) at Kew, is now an object of attraction, being literally covered from top to base with blossoms. The colour is a deep orange, and the

flowers, though small, are produced profusely in racemes, terminating each slender branchlet. It has been in flower for some time, and will continue in beauty for a considerable period yet. It succeeds in any ordinary greenhouse.

**TROPICAL WATER LILIES.**—The persistency of flowering possessed by these lovely plants is shown admirably at Kew, where at the present time some half dozen species are as beautifully in flower as if it were summer. The large snow-white blooms of *Nymphaea dentata*, a variety of *N. Lotus*, are very lovely, and stand out of the water in a bold manner. In contrast to these are the delicate pink flowers of *N. Eugenie*, which, though a somewhat shy bloomer, prolongs its flowering season till very late in the year. The charming flowers of *N. scutifolia* and *stellata*, both of a delicate shade of blue, are plentiful, and promise to be so for some time yet. The kinds named are among the best to grow in a general way, as they are of easy culture and do not occupy much space.

**FLOWERS FROM GOREY.**—I send you flowers of a *Helioleba* given to me by the late Miss Hope as *H. maximus*. Will you kindly tell me whether it is the same as *H. grandiflorus*, and *H. niger* var. *altifolius*? I also send a spray of *Myriophyllum proserpinacoides*, which is now flowering in tubs sunk in the rockery. A plant of it survived so many frosts last winter before it was killed that it will probably prove hardy here during ordinary winters. *Linaria maroccana*, still in blossom, has been a good autumn flower. Golden Gem and one or two other early *Chrysanthemums* lasted well till replaced by some of the late kinds now flowering out of doors. I send likewise a few leaves and flowers of *Czar Violets*, though I do not know whether the leaves are more luxuriant than they usually are where *Violets* do well. Here, rich culture and a gravel subsoil seem to suit them. Though they begin to blossom in September they never gain their full scent or size of flowers till October, however well the plants may look.—C. M. OWEN, *Knochnullen*.

**IBERIS SEMPERFLORENS** is almost the only plant in flower in the herbaceous collection at Kew. It is a neat little shrubby plant, producing a plentiful crop of white blossoms in dense flat clusters.

**TESTUDINARIA SYLVATICA.**—This South African plant, a relative of the Elephant's-foot (*T. elephantipes*), is now in flower in the Cactus house at Kew. It is an elegant climber, though its tiny flowers are not very conspicuous.

**RHUS SUCCEDANEA.**—A few plants of this shrub in pots in a conservatory at this season form a good substitute for flowers, as the leaves assume brilliant shades of crimson, a colour which continues in perfection for several weeks.

**THE PAPER DAPHNE** (*D. PAPYRACEA*). This produces neat little clusters of pure white blossoms, sweetly scented, as are those of most of the other species. It is a free-flowering shrub of somewhat straggling growth. It is in flower in one of the stoves at Kew.

#### LUMINOUS CENTIPEDE.

"PHILODENDRON," in THE GARDEN for the 22nd October mentions having found a luminous centipede on a road, and describes how it formed a ring, and that there was a spark which moved, "apparently in an excited state," and then adds, "the spark was no doubt a winged male, which had been attracted by the light." I can assure "Philodendron" that the male is not winged. If a winged insect caused the movement of the spark, it was probably an insect on which the centipede was feeding, and to which a portion of the luminous matter from its captor may have become attached; or it is possible that a male glowworm, which is often phosphorescent, may have been attracted by the light of the centipede. If "Philodendron" has kept the insect, and would kindly forward it to me, I could, I have no doubt, throw a brighter illumination on the subject. The name of the common luminous centipede is *Geophilus electrica*. The specific name *electrica* was given by Linnaeus, who appears by having chosen

it to have concluded that the light was due to electricity; whereas, as "Philodendron" justly remarks, the light is phosphorescent. This centipede is by no means uncommon, and is decidedly of use in gardens; it belongs to that section of the Myriapoda of which the members are chiefly carnivorous, and to which belong the vicious-looking yellow, quick-running centipedes often found under stones, pots, &c., which should never be destroyed, as they feed entirely on small insects, grubs, &c. The slow-moving ones, with a great number of very short legs, which belong to another section, on the contrary, are mostly vegetable feeders, and at times do much mischief to plants. G. S. S.

**Young gardeners' rooms.**—Recently one of the under gardeners at Harefield Grange Rickmansworth, met with his death under singular circumstances, and two others also narrowly escaped. It appears that the hothouse fires had been made up for the night, and that the young men had retired to rest. By some means the fumes from the coke—the material burned—entered the bedroom, and in the morning the three men were found in a stupified state, and since then one has died. As similar accidents may occur elsewhere, those having charge of gardens in which the young men's rooms are near the stokeholes should be careful to examine them, and where there is the slightest danger have the stokehole made smoke-proof. I may add that I am afraid the comforts of young men in many establishments, even at the present day, are not sufficiently studied. Now that the long winter evenings are approaching, a clean, warm, and well-lighted room is desirable, and I have no doubt that employers would gladly lend their daily papers, and possibly give books, for the use of the young men were they only made aware how many hours they have often to sit up to attend the fires, &c. If head gardeners, too, could afford the time (I have no doubt many do so) to instruct their young men in drawing, reading, and writing, and could induce them to write an essay on certain subjects, and give a small prize or two for the best, they would set to work with a will when they saw someone was interested in their behalf. I have done my best to carry out the above practically, and trust those having charge of gardens with several young men under them will strive to do the same.—ROBT. D. LONG.

**European fruits for Java.**—A friend of mine who has just returned home from Java, where he has been for eight years engaged in Coffee planting, gives such favourable reports of that country as a field for botanical labour, that I have decided to go out there with him next January with the intention of collecting Orchids and other indigenous plants for home export, and to join him in introducing European fruits, of which none are grown there, though there is a great demand and large prices obtained for imported fruit, such as Grapes, Peaches, Cherries, Plums, Apples, Pears, &c. The temperature there is nearly the same the whole year round—about 80° or 85°. The seasons are divided into half the year dry, the other rainy; the soil is exceedingly rich and fertile, and on an average 30 ft. deep on limestone. The Coffee and Lime grow to perfection, and the fences consist of Pine-apples. Nothing can exceed the luxuriant beauty of the vegetation in general. Now I want to know whether European fruit trees are likely to bear there, and what would be the best treatment for them, and the best varieties for that climate. I should also be glad to know what books on these subjects would be useful; and for any other information your readers may be pleased to put me in possession of I will be greatly obliged.—T. MCGUNN, *Burren, Co. Clare*.

**Dunorlan, Tunbridge Wells.**—A contemporary has published a glowing account of the beauties of this place, but the writer omitted to state who made the garden. It was Mr. Marnock.



## THE FLOWER GARDEN.

### HARDY FLOWERS AT BELVOIR.

ONE of the advantages attending the cultivation of hardy herbaceous plants to those to whom it is a consideration to be able to cut flowers at all seasons of the year is exemplified in the following list of flowers gathered from the rocky banks and open herbaceous borders at Belvoir on this, the 15th of November, a month that has the reputation of being the most cheerless and miserable of the year. I have altogether left out the flower of the time, the Chrysanthemum, and various bedding Pansies, although these are blooming abundantly, and I have added three shrubs, *Berberis Darwini*, *Escallonia Ingrami*, and *Jasminum nudiflorum*, whose bright flowers caught my eye as I passed with my bouquet of the following hardy flowers:—

<i>Senecio pulcher</i>	<i>Scabiosa (dwarf)</i>
<i>Sidalcea candida</i>	<i>Mesembryanthemum</i>
<i>Lobelia cardinalis</i>	<i>Anemone japonica alba</i>
<i>syphilitica</i>	<i>Erysimum pulchellum</i>
<i>Machæranthera gymnocephala</i>	<i>Saxifraga ligulata</i>
<i>Alyssum saxatile</i>	<i>Tussilago fragrans</i>
<i>argenteum</i>	<i>Vinca minor</i>
<i>Helleborus niger maximus</i>	<i>Phlox (Nelson's Seedling)</i>
<i>orientalis</i>	<i>deussata</i>
<i>Erodium Manescavi</i>	<i>Lamium maculatum</i>
<i>Pyrethrum uliginosum</i>	<i>Myosotis dissitiflora</i>
<i>Iberis gibraltaria hybrida</i>	<i>Veronica rupestris</i>
<i>Carter's new Calendula</i>	<i>Crocus Imperati</i>
<i>Phlox Drummondii grandiflora</i>	<i>Autumn Stocks</i>
<i>Potentilla</i>	<i>Berberis Darwini</i>
<i>Gentian coccineum</i>	<i>Escallonia Ingrami</i>
<i>Pentstemon</i>	<i>maerantha</i>
<i>Azostemma coronaria</i>	<i>Rhododendron dauricum</i>
<i>Jasminum nudiflorum</i>	<i>Roses</i>

32 specimens of hardy plants; 5 shrubs and Roses.

I may notice as somewhat of a novelty *Sidalcea candida*, a Colorado plant, and another from the same country—*Aster*, or *Machæranthera gymnocephala*; neither remarkable, but blooming at a late season worth a place in a large collection. *Iberis gibraltaria hybrida* forms compact tufts, and is strengthened by a more robust crop. *Senecio pulcher* bears rough weather better than many Composites. *Lobelia cardinalis* is from a border plant that has survived with the protection of a covering of leaf mould during the last three severe winters.

You recently noticed *Alyssum argenteum*, a plant I had from Vienna, and have grown several years; it has stood uninjured and unprotected throughout the last two inclement winters, and it deserves to be more generally cultivated. *Erodium Manescavi* is blooming abundantly; from June until November it is never out of bloom. The semi-double Wallflower is interesting; it has a charming Violet-like scent. I treasure it in recollection of Miss Hope, who sent it to me. The *Pentstemons* are from plants sown in the spring, and they have bloomed beautifully all the autumn. *Erysimum pulchellum* is a capital rock plant, and associates well with *Aubrietia*. I have two varieties of *Crocus Imperati*—one flowering in November, the other in February. I could not resist adding three bunches of Violets of the kinds we mostly cultivate—*Marie Louise*, *Victoria Regina*, and *Russian*. *Marie Louise* is one of the greatest acquisitions in Violets; it blooms with us all the winter; indeed it is rarely out of bloom.

W. INGRAM.

Belvoir.

***Drosophyllum lusitanicum*.**—I am very pleased to state that this so far has proved quite hardy planted in the outside bog; 10° of frost have not had the least effect upon it. So grown it is quite different from the same plant grown under glass, being much more robust and having broader leaves; in fact, the open air appears to

be the proper place for it—very different treatment indeed from close confinement under a bell-glass, in a warm house, pointing out once more the fact that coddling is often injurious, rather than beneficial. T. SMITH, *Newry*.

### ROCK GARDENS IN AUSTRO-HUNGARY.

IT is stated in *THE GARDEN* (p. 465) that rock gardens for alpine plants and Ferns are all but unknown in this part of the world. This is owing, it is said, to the scorching heat of the plains in July and August, a statement which is true in the wide sense of the word; but in spite of this drawback to the successful cultivation of alpine some fairly well kept rockeries are met with in the gardens here. The "flora austriaca" at the Imperial Garden, Belvedere, Vienna, has a well stocked collection of alpine natives of Austria, the head gardener having a sum granted every year for the purpose of making excursions to enrich the collection already existing. The rockeries at the Vienna Botanic Garden have recently been improved and enlarged by importations from the Tyrol, made by the present director, Professor Kerner. The Imperial Garden of Innsbruck, favoured by its mountainous locality, has some fine plants, many of them cultivated in pots, and often exhibited at the spring shows at Vienna. Visiting some years since the botanic gardens at Gratz, I met with a well stocked nursery there. Amongst amateurs I



*Nelumbium luteum*.  
A, Flower bud; B, Flower; C, Fruit.

might allude to Mr. Flatz, of Vienna, who has a good knowledge of alpine, and also grows them well.

LOUIS KROPATSCH.

*Laxenburg.*

***Helianthus multiflorus major*.**—Of this noble perennial too much can scarcely be said. I obtained my plant from Mr. Parker's collection at Tooting, and I consider it one of the boldest and most effective of all perennial *Helianthi*. The plant does not appear to be very common, and I remember Mr. Parker had but a small clump of it when he gave it to me. Once well planted in good, deep soil, however, it soon increases, and is most effective as a plant and useful for supplying cut flowers for large vases.—F. W. B.

**Hardy plant lists.**—Acting on the hint given in *THE GARDEN* last week, I am having a large book (foolscap size) made to hold 20,000 names. I have columns ruled for cultural notes, date at which I receive the plants, purchased or received as presents, &c. My object is to collect as many beautiful hardy plants, bulbs, &c., as possible, and about them to enter any notes that may help me in the cultivation and placing of them. How shall I proceed? How much space shall I leave for future entries? Shall I take "hardy flowers" as a guide, leaving a liberal distance for notes on new comers, as *Androsace sarmentosa*, *Chionodoxa Lucilæ*, &c.? I have, of course, a list of the plants which I at present possess, but I am too

ignorant to know about how many more I may wish to acquire when I know their merits.—A. C. B.

**The English flower garden.**—On August 27 you began a series of papers in *THE GARDEN* on "The English Flower Garden." They were continued for four weeks. I have been watching for their re-appearance ever since, and have been much disappointed at their cessation, as to me they appeared most useful and instructive.—E. [The vast mass of matter we found too copious to get through the pages of *THE GARDEN*, but an occasional important family we may yet insert in that way, as, for example, the *Crocus*, by Mr. George Maw. The whole will be published in a convenient form, and at the lowest possible price, with the view of showing the immense stores of material within reach of the flower gardener, as well as of assisting him in culture and arrangement. We are hopeful to be able to illustrate in the work both the finer types of plants and the various modes of arrangement.—ED.]

**Right plants in the right place.**—Mr. Ewbank's remarks on the necessity of considering situation even more than soil are very interesting, and I should like to endorse them in this way, that if I was asked in what consisted the science of gardening, I should say it was in the ready knowledge of the most fitting situation for each plant. With good gardeners this becomes so intuitive, that in nine cases out of ten they can all

tell, almost by looking at a plant, the right place to grow it in. Bad gardeners show their ignorance very much by constantly putting plants in places where it is almost certain they cannot flourish.—HENRY N. ELLACOMBE, *Bitton*.

### SHORT NOTES FLOWER GARDEN.

**Kales for flower beds in winter.** I can fully endorse all that "W. H." says (p. 480) respecting Kales for this purpose, and would further suggest that they are fitter for the rubbish heap than the flower garden. I therefore condemn the use of ornamental Kales in a position which should be occupied by something better.—J. S. T.

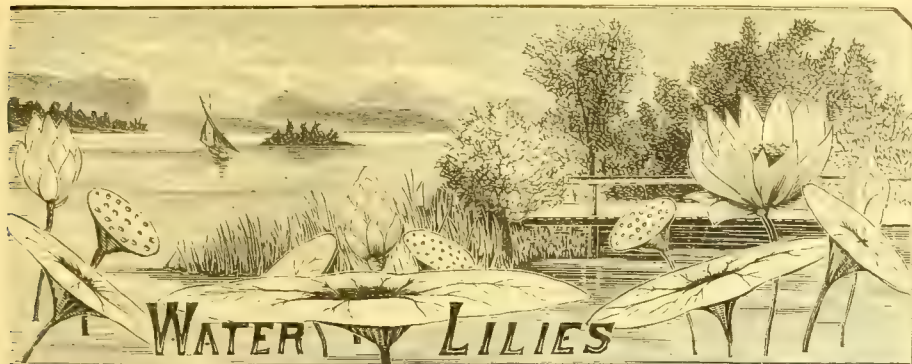
***Anemone Honorine Jobert*.**—Surely this plant cannot be a mere sport from *A. japonica*. *A. vitifolia* would, I think, be more correct. The very beautiful form known as *hybrida* is a counterpart of *alba*, but of a most delicate shade of pink.—E. H. EYLES.

**Stocks.**—We have two beds of the Intermediate and Brompton now in full flower. They are from seed sown in heat in February. Should the weather continue mild, they will to all appearance maintain their present display until Christmas or the new year.—S. K., *Anttrim*.

***Saxifraga hirculus* and *S. hieracifolia*.**—The making of these synonymous was an oversight on my part. I had no intention of doing so, seeing that they are, as Mr. Williams observes, most distinct.—E. JENKINS.

***Anemone sylvestris*.**—Mr. Poë informs us that this fine plant flowered rather freely with him in the autumn of this year.

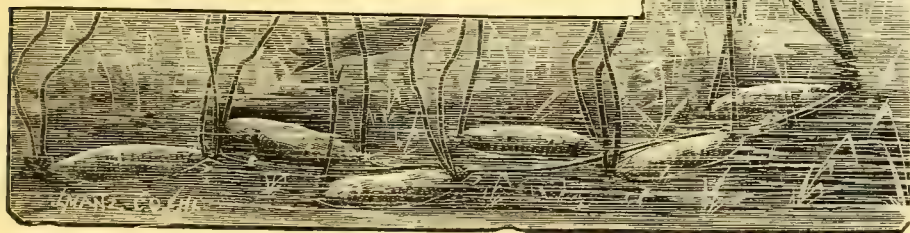




### THE YELLOW NELUMBUM. (*N. LUTEUM*.)

LATELY a good deal of interest has been centred in this beautiful water plant, which inhabits quiet lakes in many parts of North America, chiefly in the Southern and Western States. Its flowers are the largest of any that belong to the North American flora, except perhaps those of the Magnolias, and the fact that the plant is presumably quite hardy in England makes it all the more valuable. Through the kindness of Mr. L. B. Case, of Richmond, Indiana, we are enabled to furnish the accompanying illustrations of this plant, which, together with numerous interesting notes respecting it, have appeared in his "Botanical Index." The yellow *Nelumbium* is scarcely inferior in point of size to the Eastern species or Sacred Bean of India (*N. speciosum*), with which most of us are familiar. Its most conspicuous difference is the colour of the blooms, which in *luteum* is a pale yellow. It is by no means a novelty, for it first flowered in this country some fifty years ago, we believe; but, though it exists now in several gardens, it is far from being common, and but very few cultivators of the present day have any experience of it. There are several localities given for the plant by botanists, and correspondents of the "Botanical Index" have added others to the list, facts which show that the plant has a comparatively speaking wide geographical distribution. Mr. Case says: "I do not think there can be any doubt of its being perfectly hardy in any part of England, and most likely in Southern Scotland also, as it is perfectly hardy in Minnesota (U.S.A.), where the thermometer during winter often falls below zero. The tubers, however, must remain in deep water over winter, where no frost will reach them." Whether hardy or not remains to be proved; but it is certainly a desirable plant to become possessed of. The annexed illustrations, of course, represent the plant only in miniature. The description of it is: Root or tuber, resembling that of a Sweet Potato; leaves 1 ft. to 2 ft. in diameter, circular in outline, raised above the water on stalks some 4 ft. in length; flowers from 5 in. to 10 in. wide, produced from June to August; seeds enclosed in a singular obconical receptacle, with a flattened top.

W. G.



The yellow *Nelumbium* at home.

### PANSIES IN SUMMER.

MANY look upon the Pansy as a spring flower only, and apparently are not aware that it may also be had in perfection throughout the summer months. Some of the prettiest beds that I saw during the past summer were composed of fancy Pansies. When I saw them a long trying period of hot dry weather had been succeeded by drenching rains, and although such subjects as *Pelargoniums*, *Petunias*, *Lobelias*, &c., were looking far from happy, the beds of Pansies presented as gay, fresh, and cheerful an appearance as if the weather had been all that one could have wished it to be. The plants composing

these beds were, without exception, seedlings raised in spring in a greenhouse temperature, and afterwards treated in about the same manner as the summer bedders.

**Seedlings.**—But little expense attends the rearing of Pansies for summer bedding, a half-crown packet of seed of a good strain furnishing enough plants for a good sized garden. If sown in autumn, a cold frame is all they need to bring them safely through the winter; they do not indeed absolutely require that accommodation, as if pricked out in free soil in a sheltered situation they will suffer but little injury, being of such a hardy nature. Still, I would recom-

mend that they be placed under the shelter of a glass roof where practicable, as young seedlings of any kind are benefited thereby. There must not, however, be any coddling; the lights are merely to be run on in extremes of weather; at all other times leave them open night and day, the more complete the rest in winter the greater progress will be made when the growing time arrives. As the plants are not required to commence blooming before the middle of June, the seed should not be sown before the latter end of September. As long as the young plants get a couple of pair of leaves by winter they will be forward enough, unless they are to be wintered in the open, and then the seed must be sown about a month earlier. Where more than one bed has to be filled, or if a large quantity of plants is required, I would recommend that another sowing be made about March. Sow in gentle warmth, and immediately the young plants appear remove them to a cold frame, gradually inuring them to the open air. These will be ready to plant out with the summer bedders, and will be in full beauty during July and August—just the time when, as many pretend, there are no hardy flowers worth looking at. To do these spring-sown plants justice they should, when large enough to handle, be pricked out in a frame in good free soil, at a sufficient distance apart to obviate crowding; they will then come up with masses of fibrous roots and will grow away without check. Never be tempted to pot them off into small pots; if no cold frame is available prick them out into pans or boxes and set them out of doors by the middle of April or beginning of May at the latest. Where there is no command of heat in spring sow in a cool greenhouse or frame; the seed germinates at a low temperature, but the plants will not of course be so forward when the time arrives for planting them out.

**Named kinds.**—Some may wish to employ the best kinds for summer blooming. This may be done if propagation is effected in autumn; the cuttings should be taken off about the end of September and inserted in free sandy soil in a frame, so that they may be just sheltered in bad weather. By early spring nice little plants will be formed, well rooted, and in prime order for planting out in May. The propagation of Pansies from cuttings is simple enough, but the grower must exercise some discretion in the choice of the cuttings. Flowering shoots will not do; they never make free growth, and oftentimes they fail to root; it is the young growths that are continually springing from the crown of the plant and to which old stools owe their continued healthy existence that must be taken. To make sure of obtaining these in sufficient quantity a few old specimens should be cut over in July, giving them a top-dressing of some concentrated manure, and watering in dry weather. Young growths will then be thrown up from the base of the old stems, every one of which with ordinary care will make a nice young plant. I should add that plants that have bloomed all the summer cannot be relied on to yield cuttings, being often too much exhausted to furnish any quantity, so that a few stools for stock should be planted in some odd corner.

**Preparing the soil.**—Good food and moisture in abundance must be provided; there must be no lack of either all through the summer. Stir the soil, therefore, deeply, mellow it by exposure to the elements, and add, if you have it, some manure that has got into the consistency of mould. If you have not this, mix with the soil some concentrated manure and a goodly portion of scot, and remember that rank manure is no more nor less than poison to Pansies. If the natural staple is inclined to be clayey, lighten it a little by the addition of any ingredients that



may be best obtained; and if, on the contrary, it should be on the side of porousness a little loam or marl will be of good service. Bear in mind, however, that the true way to improve soils of a light burning nature is to deepen them; provide the roots with some 18 in. or 2 ft. of free soil, and they will quickly find their way into the cool moist bottom. A good mulch of rotten manure applied at the beginning of June, occasional soakings of water in dry weather, and picking off the seed pods as they form will ensure perfection and continuity of bloom through the hottest and driest months of the year.

*Bugfleet.* J. CORNHILL.

#### HARDY PLANTS IN NOVEMBER.

THE night of the 29th of October, on which we had many degrees of frost, destroyed my hopes of sending for the "Editor's Table" a handsome November nosegay of flowers from the open ground. Two nights after that we had a heavy snow-storm with a gale from the east, the snow lying all day 3 in. or 4 in. deep. This broke down many tall plants before their flowers were over, but even now, after all they have gone through, there remains a good gleaming. The fact is that where gardens in the southern counties are already gay with *Chrysanthemums*, *Asters* are in their prime here, and a very beautiful bouquet may be made of them; but it is not only those which have the best and largest flowers which are ornamental in the garden. I know at least twenty distinct kinds well worth growing, and am always looking out for more. One or two which I take to be mere varieties of *A. Novi-Belgii*, are so superior to the type of that species, owing to their clear colour and bright golden disc, that it makes me ask whether we have sufficient commerce in *Asters* with America, where they are more likely to be raised from seed and choice varieties obtained. Perhaps Mr. Hovey could tell us something about this. The frost of the 29th destroyed the flowers of *Senecio pulcher*, which were still beautiful, as well as those of *Rudbeckia speciosa* (Newmanni); but *Scabiosa caucasica* braved it, and still retains some flowers. So does *Pyrethrum uliginosum* where not broken down by the snow. *Geum coccineum*, seedlings of this year, is still flowering plentifully; and *Primula capitata* both flowers and makes seed, and seems determined to make the most of its one season, for it does not understand our climate, and cannot survive three months of a winter which catches it in full growth. It will, however, die in its glory, and I take care to have a growing stock under shelter for next year, and no plant is more easily raised.

Another Himalayan plant seems quite puzzled to know what to do in England—that is *Mecynopsis nepalensis*. Of those sown in the spring of last year only one flowered last spring; the others, ten or a dozen in number, grew on, and are now some of them nearly 3 ft. across, and showing a huge mass of buds. I have potted one in a very large pot, and it is flowering badly in the greenhouse, but the others must perish in winter. I cannot make out whether these plants intended to be biennial or triennial, but they certainly have mistaken their season. *Helleborus niger maximus* is already in full flower and very beautiful, and seems more easy to satisfy than the common Christmas Rose. On the peat beds those persistent flowerers the *Menziezias* are still gay, especially the variety bicolor, a most useful plant. *Polygala Chamæbuxus*, which ought not to flower till spring, is in full flower already, and I fear will suffer for it. One of the *Doronicums*, I have it as *Clusii*, has several grand flowers. It is the only garden Composite quite equal in colour to the Corn Marigold

(*Chrysanthemum segetum*), so much grown for the Paris flower markets. Two *Sunflowers* have just reached flowering, but of course will not do much. One I raised from seed last year bought as that of *Helianthus angustifolius*. It is of good dwarf habit, but has a decided biennial look, though called perennial. The other is that endless grower *H. orgyalis*, which has stood through all the gales and snow, though I have not given it a support of half its height, for it is nearly 10 ft. high.

One of the most useful plants for show is *Hele-nium autumnale*, which has been in flower for fully three months, and has hardly yet yielded to the severity of the season, which has rivalled last year in giving us winter before its time. The *Hypericums* commonly called *patulum* and *uralum* are cut off in the midst of their beauty, but a charming little shrub which I grow in abundance in vacant corners of my rockeries is still full of flower. It is sometimes sold as *Veronica salicifolia*, but is not the true *salicifolia*, and I believe is *V. parviflora*. It is not quite hardy here, but cuttings strike very easily, and I keep it through winter in store pots. It flowers all summer and autumn; it is very pretty both when growing and when cut, and it is difficult to praise it too much. The scarlet-flowered *Lobelias* disappeared this year from the scene earlier than usual. I grow many varieties of them, both the natural form with green leaves and the varieties of cultivation with purple leaves, but though I have tried it in bog borders, dry borders, and under various conditions, I can never persuade it to live out through a winter. It is strange that almost every gardener believes in its hardiness, but though I enquire everywhere, the places where it lives out all the year are few and far between, and certainly not in all cases remarkable for their genial climate. One is near Weedon, in Northamptonshire, in the garden of Mr. Loder, where it thrives and grows to a great size in a wet, bog border.

*Edge Hall, Malpas.* C. WOLLEY DOD.

#### PHYGELIUS CAPENSIS.

THIS is one of the most ornamental hardy plants in cultivation, yet, strange to say, it is but little known, and only met with in botanical collections, though nearly a quarter of a century has elapsed since it was first introduced from the Wittebergen, a mountain in Caffreland. It appears to be nearly related to the *Chelone* and *Pentstemon*, and it is uncommonly like *P. Torreyi* with regard to the flowers, which are brilliant scarlet. It grows some 3 ft. or 4 ft. high, and has numerous semi-herbaceous stems, each terminated by a long branching raceme of flowers. When first introduced it was thought that it would not prove hardy, but it is so at least in the neighbourhood of London, though it does not flourish so well in the open border as it does under the shelter of a wall. In such a position it attains large proportions, and thrives vigorously, as is shown by the large plant of it that may be seen at the foot of the Orchid house wall at Kew, from which our drawing was made some short time ago. It is a most persistent flowerer, beginning in May or June, and producing blooms till far on in the autumn. The soil which it prefers is that of a bright, rich character, but no doubt in Ireland and warm sea-shore districts it is not at all fastidious in this respect. It may be readily increased by portions of the root-stock, the bases of the stems being invariably furnished with a few rootlets.

W. G.

Alpine plants at home.—Permit me to say a word or two respecting the culture of alpine plants. Mr. Whitehead (p. 341) having directed attention to my mode of growing them.

As regards soil, they may be divided into three sections: 1, chalk-loving plants; 2, plants to which chalk is poison; 3, plants that will succeed in any soil or situation—a very numerous class. Plants found at from 4000 ft. to 5000 ft. above sea level, or northwards less elevated, such as *Circæa alpina*, *Atragene alpina*, *Arabis alpina*, *Cyclamen europæum*, and many others succeed under common culture, but these can scarcely be called alpine plants. The latter live higher up the mountains, generally from 5000 ft. to 7000 ft. or more, where the snow melts only for a few weeks or months during the season; these, therefore, require special culture. *Leontopodium alpinum* (the Edelweiss) of the Alps and similar rock inhabitants must be planted in grit, while meadow plants of shrubby habit need *Sphagnum* mixed with the soil; others like clay or loam, or they will not thrive, and many succeed under very ordinary conditions. As a rule, the highest mountain plants are the most difficult to manage. Amongst the worst are *Eritrichium nanum*, *Primula glutinosa*, and *Phyteuma pauciflorum*. These and others of the same class must be planted in black turfy soil, mixed naturally with sharp grit or sand. River or sea sand or grit is of no value, because all nourishment has been washed out of it. From time to time fine sand or grit must be scattered upon the plants and the soil, so that by watering it may settle down amongst the roots, to which it is always welcome. To show what plants need, chalk, sand, or grit, or *vice versa*, a list would be necessary, but that would occupy too much room. Some plants can only be grown in shade. They like the morning and evening sun, but the noon-day sun in the hot season scorches them. The highest mountains experience no hot season, otherwise snow would not lie on them all the year round. During the few months the sun does shine the melting snow keeps the plants cool.—HERMANN GUSMUS, *Botanic Garden, Villach*.

**Sunflowers.**—Rarely do we see these now. At one time they were common, and there appears to be some chance of their being so again. I saw at Tredegar Park the other day quantities of *Sunflowers* growing here and there in the herbaceous borders. Some of the great full yellow flowers were almost 3 ft. round, and they were so striking that I am sure all who may have seen them will have decided to grow a few next year.—CAMBRIAN.

#### DANESBURY.

IT was a great pleasure to read Mr. Bailey's article on Danesbury, and thus to refresh pleasant memories. Danesbury, admirably built, admirably situated, and furnished with admirable gardens, cared for by three generations of born artists, masters of form and colour, is the *beau idéal* of what the place of an English gentleman of large, but not enormous, income should be. The view over the famous Great Northern Viaduct, reminding one of the Roman aqueducts over the Campagna, is superb, and on a fine day must, I think, extend to Hertford. The day must be dismal and darksome in the extreme on which, through the trees on the north-east, the village of Codicote, no more than a mile distant as the crow flies, cannot be seen. The fernery is admirably contrived. The principle *ars est celare artem* is carried out to perfection; nothing could be more natural; the Ferns, Saxifrages, and other plants seem to be quite at home. Probably the success of this Fern dell is due to the superintendence—in its formation and in the arrangement of the artificial rock—of the late Miss Blake, an amateur artist, of whom it was said by a great professional painter that it was a thousand pities she was born in affluence. Had she been poor she might soon have realised a large fortune by her brush, and the public would not have lost a pleasure now denied them. Mr. Parsons, who died at a good age last Christmas Day, was the presiding genius of the garden, a man thoroughly practical, a lover of his flowers, and a successful raiser of many varieties of *Achimenes* and Ferns. His *Pelargoniums*, grown like standard Roses and sunk in the turf, still excite my wonder; also a



peculiarly well-grown and most floriferous plant of the double Pomegranate which used to decorate (does it now?) a south wall near the conservatory. Mr. Parsons, like most true men, had his "fads"—a great dislike to croquet, probably from damage done by the now extinct game to his plants—a singular contempt for most bedding plants. "I call all this rubbish, but still I grow it. I should like to grow this and that, but it has always been my rule not to study my own, but my employer's tastes"—an admiration for the constitution and "last" of a flower, more even than for its formation, and with him H. P. Felix Genero was the type of what a Rose should be in all save colour.

NORMAN.

#### MANUFACTURE OF CHARCOAL AT PENRHYN CASTLE.

Two different methods are employed in the preparation of charcoal—one that of piling the wood in a heap, covering with turf and setting on fire, the other by placing the wood in an iron cylinder set in brickwork and surrounded with fire. As the first method is that generally adopted, and also carried out here, I purpose giving a description of the mode of operation. A piece of ground sheltered from the prevailing winds, and in a position to which easy access with wood can be obtained is, set apart for the charcoal making. The wood is carted in at any time when obtainable, and convenient to spare horse labour from other parts of the forest work, and consists of all kinds of hard-woods (Poplar and Willow excepted); in size not under 2 in. diameter; principally the larger pieces of firewood, or any unsaleable timber which may be come across in the regular course of thinning, are used for this purpose. Among our timber trees Oak, Ash, and Beech produce the largest quantity of charcoal, and of superior quality to most others, though that produced from some shrubs, especially the *Rhamnus frangula*, is much in request for gunpowder making. The wood is sawn into pieces 2 ft. in length, and these again split, if required, to about 4 in. square, and when a sufficient quantity has been cut up for two pits, the building of these is then proceeded with. Here it may be necessary to state that it is much better to burn two pits at the same time, as both can be attended to during the charring process as conveniently as one, and do not necessitate the men sitting up at night for each separately.

The pits are usually made of a conical shape, 21 ft. in diameter, and about 9 ft. in height, the mode of construction being as follows: A strong stake is driven into the ground, and left protruding about 12 in.; around this are placed small pieces of dry Ash of a similar length and standing as close to the upright stake as possible, around this being placed another layer in the same manner, and so on until a circle 4 ft. in diameter is obtained. A circle 1 ft. in diameter, and having the top of the stake firmly driven into the ground as a centre, is next made by placing the wood horizontally on the upright pieces and side by side, repeating the same by laying others on these in a similar manner until the pit is of the required height, the wood used here being dry pieces of Ash 24 in. in length, but split rather smaller than the ordinary pieces. This forms a sort of chimney by means of which the pits are fired. Outside this the wood is placed on end and reclining inwards, this being continued until the pits are of the required size.

This being completed the pits are then covered with newly-cut turf, the Grassy side being placed innermost, beginning at the base and working towards the top, each line of turf overlapping by

a few inches the previous one, the circular hole or chimney being left open for firing. The turves are cut about 1 ft. in width and any length convenient, the quantity required for two pits being seven loads. Before turning the top half of each pit they are carefully examined, and any crevices between the pieces of wood packed full of small pieces of turf

day and night during the period of burning, and especially so should the weather be stormy, as the wind striking constantly on a particular part of the pit causes that side to burn very rapidly and fall into a hole; should this occur, the hole must at once be filled with rough logs, which had been set aside for the purpose when splitting the wood, and re-covered with turf. When the weather is mild the pits burn uniformly all over, require but little attention, and produce the finest charcoal. The time required in burning varies from seven to nine days, according to the state of the weather, dry and mild requiring the longest period. As the



*Phygelius capensis*. (Drawn from Nature, Kew, September 1, 1881.)

and sawdust, to exclude the air. They are next fired by dropping a couple of shovelfuls of burning wood and some dry pieces of Pine or Ash into the opening left at the top; the top turf is then put on, which effectually shuts up the chimney, after which the process of charring commences. The smoke is first seen issuing from the lower half of each pit, where sawdust had not been used, and ultimately all over. Constant attention is required

charring proceeds the turf gradually disappears, until only a slight covering of burnt earth remains, after which, and having become cool, the pits are ready for being opened, when it is found they are reduced to about half their original size. The charcoal is extracted by means of a rake resembling a light drag, but having much finer teeth, and after becoming quite cold is stored in the shed until required for use. Before being sent in for consumption the charcoal is riddled, and any inferior or half-burnt pieces picked out.

By the mode just described the very finest charcoal is produced, far superior in quality to what is generally sold. Having run short, quantities were procured from London and Chester, but these were found inferior to the home production, and in one case the charcoal could not be used with any pleasure. The expenses connected with making



charcoal here are in advance of many places, especially where the retort is in use; but one advantage which can be claimed for pit burning is that charcoal can be made at any place where timber is being felled, and no extra expenses incurred, save the cartage of the charcoal, whereas in using the retort the wood must in most cases be conveyed to where this is erected. In summing up all expenses connected with making charcoal here, I find the cost to be about two shillings per bushel, which price, I have no doubt, would be considerably lessened were the retort in use, especially as a large quantity (about 1500 bushels) is required annually. A. D. WEBSTER, in *Journal of Forestry*.

### FARM FRUITS AND VEGETABLES.

A STRONG effort having been made to induce the council of the Royal Agricultural Society to offer some encouragement to the culture of fruit and vegetables for profit by farmers, that body has voted the sum of £136, to be given as prizes at the next great meeting of the society, to be held at Reading next July. Under the direction of Mr. Charles Whitehead, an earnest advocate of agricultural market gardening, a committee appointed by the council arranged a list of prizes to be allotted to some thirty classes—one half for fruits, the other half for vegetables, and, with the exception of a miscellaneous class in each division, open only to market gardeners; all the others are open only to bona-fide tenant farmers, no doubt in the hope that the competitions may induce that special body of agriculturists to turn their attention to the culture of fruits and vegetables. That all the ordinary section of horticultural exhibitors are rigidly excluded cannot be found fault with. These already get ample encouragement from established societies, and amongst gardeners fruit and vegetable culture now needs no special aid. Farmers, on the other hand, need not only much encouragement, but also considerable tuition, and both these things the competition is expected to give. The classes are not for such handfuls of articles as are commonly found at flower shows—bushels and half bushels of some things; dozens of others, such as Cabbages and Lettuces, and of Potatoes even hundredweights. It is not the produce of a specially cultivated plot that is looked for, but rather a sample of a big crop, the produce of acres, or of such an extent of soil as shall give a good market crop. To ensure that the exhibitors shall be farmers in reality, and not market gardeners, it is stipulated that each one shall have the major part of his holding under ordinary farm crops. From this it is doubtless safe to infer that the promoters of this competition do not wish to make market gardeners of farmers, but rather that they should be induced to attach gardening to their vocation in such a way that it may become a help and a profitable investment to them and a boon to the public. The effort, though well meant, cannot be largely successful. Fruits and vegetables can only be made to pay when near a good market, but if that be distant, the cost of carriage is so heavy, that profits are soon swallowed up. Now, unfortunately, farmers have very little practical knowledge of gardening in its rudest sense; still less have they of market gardening in a practical way for profit, and altogether lack that knowledge of sale and barter of garden produce, without which the most successful grower often finds himself at fault. Farmers who may grow Wheat and Barley, Tares and Grass, Mangold and Turnips well may find in the extensive culture of Apples, Pears, Cherries, Gooseberries, Strawberries, and similar fruits, or of Potatoes, Peas, Onions, Carrots, and many other vegetables, a trap to empty their pockets, but little calculated to fill them. It is a fact pretty well known that our

trade fruit growers are not making fortunes at present. They grow all the fruit and vegetables they can, they have at their disposal all possible facilities for sale and the making of the best market, yet they seldom find their returns inordinately profitable. It is not probable that farmers will be more successful. Still, the experiment about to be made will be watched with interest, and if little good be the result, at least no harm will be done. A. D.

### NOTES FROM NEW SOUTH WALES.

**Gleichenias at home.**—Amongst the most interesting Ferns in Australia the Gleichenias stand pre-eminent, and to see them in their native habitats is a thing to be remembered. As a rule, wherever the Gleichenias grow, one is almost sure to find good water, and also good scenery. They live amongst the rocks on the coast or in some deep ravine or bed of one of the inland rivers. As yet the finest plants I have seen are on the George River, a river which takes its rise about 45 miles from Sydney and flows into the sea at Botany Bay. Along the whole bed, from its rise to its fall, wherever the water has made a deep cutting, one is almost sure to come across large clumps of *Gleichenia dichotoma*, *G. rupestris*, or *G. Spelunca*, sending up their graceful fronds in the full blaze of an almost tropical sun. They, however, always have plenty of water; in fact, during high floods, they are submerged for several days at a time.

**Doryanthes excelsa.**—High up on the almost barren rocks, or deep down in some rich gully, this gigantic Amaryllid sends up its massive bright red flower-stalks. It is one of the brightest plants in the Australian bush. Go where one will on any part of the George River wherever there is any shade, we are sure to find large clumps of this noble plant with flower-spikes about 15 ft. in height. It is looked upon as a treasure by the Australian who has courage enough to penetrate a little way into the pathless bush.

**Orchids at Camden Park.**—As yet Orchids are scarcely known in this colony; the only place where a collection worth the name exists is at Camden Park, near Sydney, N.S.W., the residence of Sir W. McArthur. The Dendrobiums are all grown upon blocks of Tree Ferns, and at the present time are one mass of flower. Of *D. nobile* there are about fifty plants in bloom; of *D. Wardianum* about twenty, and smaller groups of *D. bigibbum*, *Cambridgeanum*, *Bensonae*, *Devonianum*, *Falconeri*, and *Farmeri*, also three or four fine plants of *McCarthyae*, and the Australian rock Lilies, *D. speciosum* and *D. speciosum Hillii*. In another house were some fine plants of *Vanda tricolor*, *V. suavis*, *V. teres*, *Saccolabium Blumei*, *giganteum*, *roseum*, and several good plants of *Angraecum eburneum* and *superbum*. A third house contained *Cypripediums*, *Cymbidium*s, *Calanthes*, and then came a house of *Phalaenopsis*, the finest in bloom being *P. amabilis*, *P. grandiflora*, and about a dozen plants of *P. Schilleriana*, some of the spikes bearing as many as sixty flowers. In a fourth house I noticed a good collection of South American *Oncidium*s and *Odontoglossum*s, but here the summer is too warm for them, at least under glass, and as yet they have not been tried in a bush house, in which I think they would do well, as they would get plenty of air and shade.

A. MOORE.

*State Nursery, Campbelltown, N.S.W.*

**Cattle poisoned by Hemlock.**—Could any one be so kind as to put me in the way of obtaining the particulars of the case referred to in THE GARDEN (p. 467) under this heading? I presume the plant meant is the *Cicuta virosa*, often called Cow-bane. This grows in abundance in the drinking ponds in many of my fields in Cheshire, always in the water. The cows eat it wherever they can reach it, and never suffer any harm in consequence. Both time and place make it more probable that the case mentioned in THE GARDEN refers to *Cicuta virosa* rather than to

*Conium maculatum*, which is much earlier in leaf, and does not usually grow in wet spots. — C. WOLLEY DOD, *Edge Hall*.

## THE GARDEN FLORA.

### PLATE CCXI. CIENKOWSKIA KIRKI.\*

DURING the past summer a considerable number of new and interesting Gingerworts have flowered at Kew, some of which have already been noted in these pages as plants possessing qualities that should recommend them for general cultivation, and several are of such extraordinary merit that we may safely predict for them much greater favour than that which is usually bestowed on plants of this class. Among such may be mentioned the beautifully variegated *Kaempferia Gilberti*, and another equally pretty species of *Kaempferia*, not unlike *K. Roscoeana*, but which does not yet appear to be named. Dr., now Sir John, Kirk, her Majesty's consul at Zanzibar, accompanied Dr. Livingstone in his second journey across the African continent, and it was during that expedition that a second species of *Cienkowskia* was discovered, along with many other plants of botanical interest. It was, however, from the African coast opposite Zanzibar that Dr. Kirk collected and sent home the species here figured, and to the same source we are indebted for the graceful and richly-coloured *Hibiscus schizopetalus* and the remarkable *Angraecum Kotschyi*.

The Gingerworts are many of them, as has just been stated, very ornamental. The flowers in many cases are so richly and delicately coloured, and in form so closely resemble those of some of our most popular Orchids, that it seems difficult to explain the neglect into which they have until recently fallen. The beautiful and sweetly-scented *Costuses* which have been so much admired at Glasnevin this year the handsome *Curcumas*, *Hedychiums*, &c., are only a few of the riches belonging to the Gingerworts; they are so easily procured, too, and grown, that no collection of stove plants ought to be without them.

*Cienkowskia Kirki* is a dwarf-growing plant, forming a stem about 4 in. high and leaves 8 in. long by about 3 in. wide, deep green, and graceful in appearance. The general aspect of the plant is very like that of a *Phaius*. The flower-stem springs from the base of the young growth, and is from 9 in. to 1 ft. long, erect, and bearing numerous blossoms on the upper half. The flowers, which open in pairs, commencing at the bottom, are, as will be seen, rose-coloured, with a golden blotch at the base of the large 3-lobed lip. The flowers of this plant have not inaptly been compared to those of *Odontoglossum vexillarium*. Each lasts about three days, so that a strong spike will continue to bear flowers for at least two months, and as the spikes are freely produced, plants may be had in bloom for about four months.

**CULTURE.**—The cultural requirements of this plant are very simple, the treatment usually given to *Gloxinias* suiting it exactly. During winter it should be placed on a dry shelf, or under the stage in a warm house, where it will require no water until spring, when the rhizomes should be shaken out of the old soil, potted in a light, rich compost, and started along with such plants as *Caladiums*, &c. It may be freely propagated by division. This *Cienkowskia*, which is not a new plant, but re-introduced last year, appears to have found its way into commerce, plants of it having been shown this year

\* Our drawing was made from a plant which flowered this year in the Royal Gardens, Kew.











at one of the summer exhibitions in Regent's Park, where it was awarded a first-class certificate, and it gained a like award when shown at South Kensington a short time ago. B.

#### LILIUM LONGIFLORUM FLORIBUNDUM.

UNDER this name Messrs. Kift & Sons, of West Chester, Pennsylvania, introduce a Lily of which the accompanying is their representation and description. "It is evidently a variety of longiflorum, and like it the flowers are trumpet-shaped, but rather larger than longiflorum; the petals, too, are more recurved, and in addition it is exceedingly fragrant, but its great merit is its free blooming habit. In the old variety, even in first-class bulbs, from two to three flowers are considered to be a good crop, and many do not bloom at all, but in this variety we are sure of a crop. The main stem will produce from four to eight flowers. At the same time it is common for it to send up new shoots which will bear from two to four flowers,



*Liliium longiflorum floribundum.*

thus continuing the season of blooming for months. Bulbs from the size of a Walnut will produce flowers in this manner; but still smaller bulbs will be sure to bloom. Another advantage this Lily possesses over the old variety is that it continues to increase in size and in ability to furnish more flowers, until (as shown in the engraving) it will produce an immense cluster. This engraving is from a photograph of a stalk of a bulb three years planted; it had on it at the time fifty-two well developed flowers. This is exceptional, but we have seen a number of stems bearing from twenty to thirty-five flowers. We have a stalk which has borne thirty-two flowers, and with generous cultivation this is quite common; at the same time it makes numerous offsets, which bloom readily the first year." Its great floriferousness arises apparently from some fasciation of the stems, and if this be permanent it will be an extremely valuable plant.

## TREES AND SHRUBS.

### THE PINE FOREST OF RAVENNA.

YOUR correspondent's reference to the Giusti Garden at Verona, and the injury the Cypresses there have sustained from the heavy snows of the winter 1879-80, reminds me of the appearance of the Pineta of Ravenna in the spring of 1880. This forest, venerable from its great age, and celebrated both in prose and rhyme, extends (as we know) for 25 miles along the coast, and is one of the most lovely and remarkable of Italian woodlands. Gibbon's description is very accurate. He says, "The gradual retreat of the sea has left the modern city at the distance of 4 miles from the Adriatic, and as early as the fifth or sixth century of the Christian era the port of Augustus was converted into pleasant orchards, and a lonely grove of Pines covered the ground where the Roman fleets once rode at anchor." Dante has rendered the Pineta immortal. During his exile from Florence, while he was the guest of the Polenta family (then lords of Ravenna), he often walked and meditated in the forest glades. There is a tradition that the "Divina Commedia" was composed at this period of his life. Boccaccio makes the wood the scene of a thrilling love story, and Byron declares that (among other attractions) he is drawn to Ravenna by the charms of Lantica Selva, in which he took his daily rides.

We first intended to enter the wood by the Rimini road, after visiting the ancient Basilica of S. Apollonaris in Classe. You approach this grand but mouldering church by a long and dreary path. It was in the month of April, and though the thinly scattered trees were green, the fields were partially flooded, and a few peasants knee-deep in water were mournfully tilling the ground. It was melancholy to enter a church rich indeed in costly mosaics still fresh and bright, though twelve centuries had rolled away since they were first placed there. The fine carved tombs which line the Basilica were green with damp, as was the marble floor. All seemed to be given up to neglect and decay. We afterwards decided to retrace our steps and reach the forest by another way, passing by the Rotonda, the tomb of Theodoric. On approaching the Pineta it was indeed a shock to see the magnificent Pines looking almost as if they were dead, like giants stricken with lightning from heaven. As we drove through the succession of lovely avenues and glades, the same sad spectacle met our eyes. The snow of the previous season had weighed down most of the trees, destroyed their symmetry, and left them brown and sere. Our guide said that it would be three or four years before they recovered their greenness and beauty, if indeed they ever did.

Thus did the cruel winter deal with

Ravenna's immemorial wood,  
Rooted where once the Adrian wave flowed o'er.

MARK NESFIELD.

### TRANSPLANTING MAGNOLIA GRANDIFLORA.

IT would be interesting to know at what period of the year the large trees of Magnolia mentioned in THE GARDEN (p. 443) were transplanted. I, in common with many others, have always been much impressed with the difficulty of removing this fine evergreen without injury when it has attained considerable dimensions. The danger does not so much lie in losing the tree altogether as in its liability to cast its foliage during the winter months, a fate that has overtaken many a fine handsome tree when transplanted late in life. Some of the largest growers of this Magnolia in France will only warrant success when the plants are removed in August, and they will guarantee every one, large or small, transplanted at that time

of the year to succeed. Even then, however, the greatest precautions are deemed necessary; so much so, that in some cases I have known the trees to be specially prepared for removal by growing them on in large baskets similar to the "rounds" employed by nurserymen for packing plants in. Only a slight check is then experienced when the tree is lifted, and large specimens can be sent a long distance with perfect safety. Some of our English nurserymen, too, deem it right to grow some portion of their stock of this plant in pots. Taking, therefore, into consideration the exceptional precautions that so many experienced planters believe to be indispensable in transplanting this evergreen, one cannot help feeling some surprise that the two large trees mentioned by "E. D." should have so triumphantly come out of the trying ordeal to which they were subjected.

In the case of one large tree covering 150 yds. of wall, the roots were hacked off near the main stem, so that, as your correspondent observes, it was removed "literally without roots," and yet it did well—a truly marvellous result. What I should like to know about these trees, as I have already stated, is at what time of the year they were transplanted, and whether any extra precautions were taken to screen them from vicissitudes of climate until fresh fibres were made.

Some two years ago, when the nursery stock of the late Mr. Fuller, at Addlestone, was brought to the hammer, there stood in the grounds a large Magnolia; it was the true Exmouth variety, but no one cared to buy it, owing to the risk of moving, it being then November. Ultimately a friend of mine bought it, but I felt sure at the time could not save it. It was planted well up to avoid superfluous moisture at the roots; the soil was mulched some 6 in. thick, every care being taken in lifting to secure and keep all the fibres intact, and yet by March the tree was as bare as an Oak in December. Young plants moved at the same time suffered equally. Had I large Magnolias to move I would dig round them in spring and lift them in August as soon as the wood was ripe, or if I could not do that, I would transplant them in June just before growth commences, but never in late autumn, winter, or early spring.

JOHN CORNHILL.

### DYNAMITE FOR SPLITTING TREE ROOTS.

IN clearing and grubbing up large roots of trees that have been blown down in the gale of the 14th ult. we find dynamite of great assistance in splitting the roots into pieces and making them portable. There are other ways and means of getting them out of sight, viz., digging a large hole and burying them where they lie, hauling them away with horses and a sledge to rot in the rubbish corner, or, if possible, cleaving them asunder with hammer and wedges, but any of the three ways just mentioned are more expensive and not so effectual as blowing the large roots into pieces with dynamite. In course of time buried roots rot and leave hollows in the ground, and it is next to an impossibility to cleave large fresh roots with wedges. I have seen half a dozen horses and as many men tugging and straining at an unyielding mass of root for the best part of a day, while 5s. worth of dynamite, including caps and fuse, would have blown the root to atoms in a very short time. There is some little difficulty in procuring dynamite in small quantities, as it is not kept in stock like gunpowder. Where, however, it can be had it is a more powerful explosive than powder, and much easier and safer to work with. The operation is simply putting the fuse into the cap or detonator, giving the upper part of the cap a squeeze to hold it upon the end of the fuse; then insert the end of the fuse with the cap attached to it into the middle of the dynamite cartridge, the full size being about 4 in. long and nearly 1 in. in diameter, the under size being half the length. After boring a hole in the centre or solid part of the root as deep as possible without going quite through the root, insert the dynamite with the fuse attached, so as not to make waste of the fuse it will



burn about 1 ft. a minute, which will enable the operator to get to a safe distance before the explosion takes place. In the course of practice it will soon be learnt how many cartridges are required for the different sized roots. I may state that for a large fresh root of 4 ft. or 5 ft. in diameter, from six to a dozen cartridges are sometimes required. In putting them into the bored hole, undo the paper of each end of the cartridge, ram them close up with a wooden rammer, and then insert the primer cartridge prepared as before mentioned. If there is any space or opening above the primer cartridge it may be filled up with sand, but even that is immaterial. In cold weather the dynamite is apt to get hard. If frozen it loses its pasty condition, but thaws and renews it when warmed, which can be safely done by keeping it in a warm room for some time or putting in an empty water-tight tin can, which should then be placed in a vessel of hot water till the cartridges have resumed their pasty condition and fit for using. J. MILLER.

*Chumber.*

**Coronilla glauca out-of-doors.**—Violent gales and sharp frosts in October have left gardens comparatively flowerless, but *Coronilla glauca* planted out in summer close under our terrace wall is still bearing bright yellow blossoms in profusion. When planted out it is not troubled with scale or other insect pests, and it grows much more freely than in pots. It is not hardy enough to withstand a very severe winter, but with the shelter of a wall and a little covering it may as a rule be considered safe. I have seen it stand out in quite open positions on the coast of Suffolk for several consecutive winters and to be quite gay with flowers at the duldest time of the year. Of course it makes its best display a little later out-of-doors than under glass, but when planted out with unlimited root room it appears to be nearly a continuous flowerer. No sooner does it make a little fresh wood than it is surmounted with buds and flowers. I would advise anyone wishing to try this plant out-of-doors to put it out in May or June in order that the young growth might get well matured before winter comes on. Soil of only moderate richness, too, is advisable, for being a strong rooting plant it is apt to get over-luxuriant in very rich soil.—J. G., *Linton.*

**Pruning Conifers.**—I read in THE GARDEN with great interest the occasional discussions which appear in it respecting the treatment of Conifers. In regard to pruning them especially it seems to me that English cultivators are far from having got at the whole truth. At any rate in the American climate there is only one rule for the sure production of symmetrical and beautiful coniferous trees. This rule is simple—always cut off the leader. By this means the force of the tree is thrown into the lower branches, and its growth becomes lateral and equal in all its parts. There is no danger that new leaders will not be formed when they are necessary. Nature is sure to attend to that matter. All that the operator needs to do is to take care that Nature is not allowed to produce deformities.—C. A. D., *New York.*

**The late storm.**—I regret to say the gale of the 14th ult. made sad havoc among the old Thorns in the Phoenix Park, Dublin, probably not less than 300 being prostrated. They are all of great age, and very many more or less decayed. This season they are or have been overloaded with fruit, which circumstance of course gave the wind additional power over them. Many tons of the leaves carpeted the ground immediately after the storm; they are gradually eaten by the deer and cattle, and yet there is abundance left for the flocks of redwings which will arrive as usual for the winter the first fine moonlight night when the wind is favourable for their flight across the North Sea. Some of the finest Elms in the park are also prostrated, several girdling from 12 ft. to 14 ft. As an instance of the force of the wind, one tree has uplifted probably about thirty tons of clay, the depth of the bole being about 4 ft. Three yards

of a drain which happened to be under one side of the bole was lifted bodily up, the line of drain pipes sticking intact to the ball in consequence of their being full of roots.—HIBERNIAN.

**Storm-broken trees.**—When large old trees are broken off by storm, leaving some 20 ft. or upwards standing, is it well to cut off the broken part, and put lead or zinc over it? or to cut it on a slope? or to leave it to heal itself? and generally is it well to leave the ends of boughs broken by storm or accident to heal themselves? —SUBSCRIBER. [The broken stems or large limbs of old trees should have the splintered parts cut off with a saw a little on the slope, and afterwards covered over with sheets of zinc. Young trees and the smaller limbs of old trees after having the broken ends sawn off may be left to heal of their own accord; the sawn parts or ends of the limbs should be painted over with notting or tar, to prevent wet from penetrating into the wood.—G. B.]

**Autumnal tinted foliage.**—Some specimens of trees and shrubs in their brilliant autumn garb come to us from Linton Park, Maidstone. The colours of some of the Sumachs are extremely fine, as are also those of some of the *Vacciniums*. From the vineries Mr. Groom sends us rosy crimson leaves of the Alnwick Seedling Grape Vine, which he thinks will be found useful for dinner table decoration. The bright hues of these trees and shrubs compensate in a great measure for the lack of out-door flowers, and therefore a selection of the most suitable should always be planted in shrubberies.

#### AUTUMNAL LEAF-TINTS.

Now that autumnal flowers are all but cleared off by the late gale and severe frosts, one turns with a rueful pleasure to such of the autumnal tints as are yet spared to us. With me but few shrubs or trees are grown, but I can testify that amongst the humbler forms of garden subjects there are many which are worth growing for the sake of their beautiful foliage at this season alone. It would be an interesting sight to see these changing and cheerful plants grown either on the massing or bedding out principle, using such as would conveniently come in as regards date, height, and colour. It would only be giving them equal chances with flowers, and they would linger after the flowers had passed away. Supposing a line or round bed to be so tried; if it failed with its tints, it could hardly fail in the case of such as the following subjects to be otherwise interesting if not satisfactory. I only speak of such as I see now in my small garden; they are mostly fairly coloured, and some are even bright. First and tallest, say a large leaved scarlet Oak; next, young purple or black Peach; then the old Cabbage Rose, with its persistent bronzed purple leaves; this to be alternated with Sweetbriars for the sake of their hips.

Next again, a little lower might be the hardy Azaleas, having almost scarlet leaves, or the silver Poplar in young twiggy specimens. This seems to hold its foliage longer than any other of the five Poplars I grow, and the leaves are white on the under side and at present nearly golden yellow on the upper. All these taller things might be carpeted with the dwarf North American Phloxes. Five or six species or varieties show their dissimilarities in nothing more than in their richly varied tints at the present time; their bristling forms and cosy habits, together with their warm colours, render them pleasing objects. It is well that some of the North American tint plants do not forsake their habit in this climate; moreover, gales and frosts do not seem to affect these.

Next to the young Poplars or Azaleas might come *Gaultheria procumbens*, a deep dull crimson; *Euphorbia Cyparissius*, 10 in. high, feathery, crimson, yellow, and Apple-green; then *Euphorbia Esula*; so very handsome is this British species just now, it is worth growing for its tints alone; its Box-like leaves are yellow, shading to vermilion at the tips. In front of this could come a mixed row of Saxifrages,

as *S. crassifolia*, chocolate; *S. purpurascens*, glorious bright scarlet; *S. Megasea rubra*, ruby. Many of the *S. Geum* section are now fine, and would come in. *Galax aphylla*, always rich, would be a pleasing contrast in this row of dwarf plants. The *Epimediums*, too, would be useful to relieve the heavy-looking Saxifrages of the *Megasea* section, and the forepart, which might be indefinitely extended, could be filled in with the hosts of *Alchemillas*, *Alpine Potentillas* (not to exceed 6 in. in height), *Heucheras*, *Tiarelles*, *Saxifrages*, *Sedums*, and *Sempervivums*. *Physalis Alkekengi*, though it grows tall, might be introduced anywhere in such a collection. At the present time it has no leaves, but the bare stalks hold suspended in a quaint manner its Chinese lantern-like calyx, which is a fine orange-yellow.

As all these a few days ago were in fine colour at one time, I venture to say that such a conglomerate bed would at least be pleasing at a corresponding date, and, according to my experience, there is not a subject in the lot which I have named that could not be grown in good light loam, the *Gaultheria* being perhaps the least accommodating. JOHN WOOD.

*Kirkstall.*

#### LABELS FOR PLANTS.

THE council of the Society of Arts, on the recommendation of the judges in the late competition of plant labels, are prepared to renew the offer of a Society's silver medal, together with a prize of £5, which has been placed at their disposal for the purpose by Mr. G. F. Wilson, for the best label for plants. The object of the offer is to obtain a label which may be cheap and durable, and may show legibly whatever is written or printed thereon; the label must be suitable for plants in open borders. Specimen labels, bearing a number or motto, and accompanied by a sealed envelope containing the name of the sender, must be sent to the secretary of the society not later than the 1st May, 1882.

Concerning the competition in July last, the committee are of opinion that none of the labels sent in are deserving of the Society's medal, but they have pleasure in expressing their opinion that the following possess many points of merit, and they therefore direct the attention of persons interested in the subject to them:—

E. J. Alment, 194, Ramford Road, Stratford.—Zinc labels, with galvanised iron wire stems.

J. Pinches, 27, Oxenden Street, S.W.—Zinc labels, with stems of zinc, iron, and oxidised iron.

Thomas Johnston, Saw Mills, Renfrew, Scotland.—Labels of teak wood.

J. Wolstenholme & Son, Grimes Street, Mill Hill, Ancoats, Manchester.—Holly-wood and Box-wood labels.

Rev. H. Ewbank, St. John's, Ryde, Isle of Wight.—Wood labels, with iron wire supports. These are painted white and a coat of black paint added, which, when wet is removed where the letters are required, in order to show the white ground beneath.

J. Wood, Woodville, The Spring, Kirkstall, Yorks.—Zinc labels, with galvanised iron wire supports.

Walter J. Todd, 32, Angell Road, Brixton, S.W.—Wood labels, with wire supports.

C. Yeats, Mortlake.—Zinc labels of various patterns; ink for writing on same.

S. Mount, Harbledon, Canterbury.—Painted iron labels.

J. C. Turner, Salisbury Road, Blandford.—Zinc labels.

J. Dowdney, 1, Montpelier Villas, West Street, Croydon.—Wood labels, with wire supports.

Rev. Wolley Dod.—Iron and wood labels.

There is also an iron label sent in by the Rev. H. N. Ellacombe, for the inspection of the committee, though not in competition, which is well deserving of notice, since it has been in use for more than sixty years in Mr. Ellacombe's garden, and is still in perfectly sound and good condition.

The following suggestions are offered for the guidance of future competitors:—

Wood is probably the cheapest and best material for cheap labels. It is at present liable to the ob-



jections that the part in the ground rots, and the writing on the label becomes illegible. If by some process, such as perfect kyanising or treatment with paraffin, these objections could be removed, an excellent cheap label would be the result. Such labels, however, would have to be tested in actual use against unprepared labels before any award upon them could be made. Slate labels, made thick enough not to break, might be useful. Cheap thick glass labels might be useful for the same purpose, if proper means of writing upon them were provided.

#### POPULAR ERRORS IN HORTICULTURE.\*

**Colours and watering.**—In nearly all matters of life, before accepting someone's say so, it is wisdom first to use our own judgement and common sense; and this is particularly true in many of the operations of horticulture, for in no profession is there greater need for the reasoning faculties, and, in the neglect of the use of these, the most absurd errors and delusions are held even by many practically engaged in the business. The breeder of fancy fowls or pigeons could not be told that the plumage of either would ever assume the scarlet of the flamingo, though he would likely be quite ready to believe that his next door neighbour, who is a flower fancier, may yet have a blue Rose or a blue Dahlia, phenomena just as unlikely as that his dorkings or his brahmas would have a plumage of scarlet. For, so far, we find that there is no such thing in Nature as plants having scarlet, yellow, and blue flowers, in varieties, of the same species; perhaps the nearest approach to it is in the Hyacinth, but in it, although we have yellow and blue, we have no true scarlet. Another very popular error is the belief that something mysterious is done, by the professional horticulturist, to produce new or fine varieties of fruits or flowers. There is no mystery or skill about it, other than to select the best or fittest and place them together; this done, man's work is done—Nature does the rest. It is laid down almost as an axiom by amateur horticulturists that the water with which plants are watered should be soft or rain water, and of the temperature of the room or greenhouse wherein the plants are. Commercial florists, who grow hundreds of thousands of plants, cannot do this, and yet, as a rule, their plants are in the very best possible health, far better than that of the amateur who goes to this unnecessary trouble, for the reason that the real conditions of success—the proper temperature and moisture—can be given in the greenhouse, but not in an ordinary sitting-room.

**Plants in rooms.**—The flower-loving amateur is also trammelled by another dogma, this time bearing the authority of quasi-science, for a great man, the family doctor, armed with a smattering of chemical lore, glibly describes that plants at night give out carbonic acid gas, which is poisonous to animal life, and consequently, if plants are kept in sleeping-rooms, sickness and even death may follow. No theory can be more destitute of truth; that plants give out carbonic acid gas at night may be, but that it is in quantity enough to endanger human life is utter nonsense; if it were so, we would have no insects attacking plants, for their low organisation would make them the first victims to a gas poisonous as carbonic acid. Besides, most gardeners, who have had the charge of greenhouse plants, know that on cold nights the most comfortable quarter is the greenhouse, and yet I think it would be difficult to find in any business a healthier class of men than professional gardeners. I have pleasure in believing that my de-

nunciation of this absurdity, begun over twenty years ago, has had something to do with checking its spread; but thousands yet of plants, particularly in the rural districts, are consigned to the coal cellar, at the dictum of some wiseacre, who is happy to be thought thus learned in the chemistry of plants.

**Market gardens.**—Another wide spreading delusion, of a very different kind, pervades a large class of men who have a taste for horticultural matters, but who have no practical knowledge of the business. They have land laying idle, adjacent to a town or city; they see growers of fruit, flowers, or vegetables alongside of them—rough, unlettered fellows, perhaps—but making the business a success; why should they, with their lands, not do likewise? They hire a manager, and plunge into the business of market gardener or florist, and in nineteen cases out of twenty lose all they invest. Nothing else need be expected. What chance would a blacksmith have if he hired a dry goods or a grocery clerk to work either of these businesses, if he were ignorant himself of the grocery or dry goods trade. There is no more true adage applied to horticulture as a business than that:

He who by the plough would thrive,  
Himself must either hold or drive;

for he who attempts any branch of it dependent upon the knowledge of others without taking a hold himself to attain that knowledge, is almost certain to come to grief.

**Fertilisers.**—A class of scientific men at the present time are greatly exercising the minds of a large portion of the professional farmers and gardeners, as well as amateurs, in the matter of fertilisers. These gentlemen have discovered that certain kinds of plants have their structure composed of different elements, and their aim is to put in the soil the elements that are found in the several families of plants. Some dealers advertise not less than thirty different kinds, which they claim are specially adapted for so many kinds of plants. Thus, the Orange grower of Florida is told that a special manure is to be found in the "Orange Fertiliser," manufactured in New York or Philadelphia, and, if he has faith in the claim, is induced to freight a material, which is no better, if as good, for the purpose wanted as what may be bought at less cost at his door. So, too, the Tobacco grower of Kentucky, the Potato grower of New York, or the Wheat growers of far-off Minnesota or California are told, by so-called science, that there are fertilisers specially adapted for these crops. I do not for a moment dispute that the special fertilisers, claimed for special crops, do not answer for these crops; but that these specialties are a necessity is the point questioned. There are a few practical agriculturists but believe that, if all the thirty specialties were mixed together and applied to the special crops, the result would be equally as good as if the hair-splitting distinction of a separate fertiliser for each crop was used. Some chemists tell us that phosphorus enters largely into the human brain, and that a fish diet is necessary for the best development of brains. Broad results is the best test of the dogmas of so-called science; and it scarcely can be shown that fish-eating nations or communities are specially noted for extraordinary brain development.

**Carnivorous plants.**—Charles Darwin has said, and he finds many believers, that certain plants, such as the Drosera or Sundew and our own Carolina Fly-trap (*Dionæa muscipula*), are fed by the insects that their wonderful structure enables them to catch. In conjunction with a friend, a few years ago, I made most extensive and careful experiments in our greenhouses,

covering a period of six months, with several hundred plants of the Carolina Fly-trap, and the result showed that in two lots, treated exactly in the same manner, that those fed with insects in no way differed from those that were not fed, which satisfied us that, if the plants digested the insects placed in the leaf trap, the food was in no way beneficial. While these experiments were going on, they were watched with great interest by hundreds, and nearly all were convinced that the belief that any plants feed on insects is a delusion, although Mr. Darwin has written a book of 400 pages in the attempt to prove it a fact.

**Graft hybrids.**—For hundreds of years the art of grafting and budding has been practised, the object being to perpetuate varieties that could not well be increased by cuttings or layers; and it had been almost universally believed, until a few years ago, by nurserymen and gardeners, that the stock in no manner affected the individuality of the variety budded or grafted upon it except to make it stronger or weaker, according to the nature of the stock budded or grafted upon. But when Mr. Darwin, in 1868, issued his famous work of "Animals and Plants under Domestication," he started the theory of what is called "graft hybrids," and gave a number of instances where seemingly there was amalgamation of the stock and graft. The most important case instanced is where a Mr. Adam inserted a bud of *Cytissus purpureus* into the *Cytissus Laburnum*, and the result was that the bud, when it developed, had yellow and purple racemes on different shoots; on others the purple and yellow were intermingled on the same raceme, and seemingly to partake of the nature of both varieties. Another case is instanced of the Bizzaria Orange, which originated 250 years ago in France, on which Oranges and Citrons are found on the same tree, distinct, and in some fruits blended. Again, he cites various instances where the bud or graft of a variegated plant has the effect of causing variegation in the green-leaved stock. Nearly every gardener is familiar with this; if he takes a green-leaved white-flowered Abutilon and graft the Abutilon Thompsoni on it, with its variegated leaves and orange flowers, the variegation will affect the leaves of the white variety, but no other change occurs, the flowers hold their same shape and colour, and in no respect are they changed. A variegated single white-flowered Oleander, grafted on a plain-leaved red variety, will, as in the Abutilon, blotch the leaves, but will in no way change the colour or condition of the double red flower. So, in the case of Buist's variegated red *Althæa*, when grafted on a double white; it in no way affects the colour or doubleness of the flower, but it again blotches the leaves white with the disease—variegation. I consider it was most unfortunate for Mr. Darwin to have advanced the peculiarity of variegated leaves as bearing on his theory of "graft hybrids," for almost in every instance where a variegated variety is grafted on a plain green-leaved stock, it taints the healthy plant with variegation, though it changes it in no other respect; just as a small-pox victim may be marked with that disease, but in no other way changed.

**Bud variation.**—Negative evidence is not usually good evidence, but when we know that countless millions of fruit and flowers have, in the past 100 years, been budded and grafted without the individuality of the variety being in any way affected by the stock, and that only a few instances, such as the *Cytissus purpureus* and the Bizzaria Orange, can be cited as exceptions, is it not fair to infer that these almost solitary cases are due to what Mr. Darwin calls "bud variation?" a condition by no means uncommon in scores of families of plants which

\* Read by Mr. Peter Henderson before the New York Horticultural Society, Nov. 1, 1881.



are never budded or grafted. Nearly all of us see every season scarlet and scarlet and white striped Carnations on the same plant. Dahlias are found crimson, crimson and white, and sometimes almost pure white on the same plant. Last spring we had plants of the double scarlet Hibiscus with scarlet, orange, and scarlet and orange—three distinct kinds of flowers on the same plant; and that wonderful freak of Nature, the striped Tea Rose, American Banner, was a "sport" from a plant of Bon Silene, and has no resemblance to it, either in flower or foliage. Scores of other instances could be cited if time would permit, but enough has been shown, I think, at least to throw doubt on the theory that the stock affects the individuality of the graft. In the past quarter of a century millions upon millions of Bartlett Pears and Baldwin Apples have been grafted upon millions of stocks; and yet to-day they are as true to their individuality as the Concord Grape or Wilson's Strawberry that are perpetuated by cuttings or runners, and none of them are in any way changed from when they first appeared, unless by the temporary accidents of soil or climate. I believe that the smallest or the greatest of the works of creation has a separate and distinct individuality, and that they cannot be blended except by generation, and that the product of generation, whether in the lowest microscopic germ or in the highest type man, has an individuality distinct and separate that it cannot attach to another.

#### BY THE RIVIERA SHORE.

THERE are many beautiful things by it, natives of the land and also exotics which find there a little of the warmth and sun of their hotter lands. The best things, perhaps, there are the plants of our old herb gardens, all of which are wild, or nearly all, while the Myrtle is in the small woods by the sea. Lavender and Rosemary everywhere on the brown sunny hills, which, arid as they look, are seamed with alpine flowers and rock plants on the top and the sides. Lower down in level places near the sea, the famous groves of Olives, Lemon orchards, and, wherever there is a garden well planted, such a display of tender greenhouse shrubs and like plants in the open air as one seldom sees—Palm and Gum trees, Wigandia, Acacia, Trumpet flower, and what we call hard-wooded greenhouse plants, all fresh in the open air, while the pretty little Ice plants swarm on the walls with their stars of liquid colour, and the Cape Pelargoniums make neat low bushes hardy on the banks and covered with many flowers early in the year. Among such a varied crowd our well-known old friend the American Aloe is at home; we show it on a bluff where its effect is singularly good, and where, no doubt, it gets warmth and dryness. It is curious how one or two degrees of heat may make a great difference to a plant; we believe that this great Agave, which we are obliged to protect in greenhouses, remains untouched in the Channel Islands and in the extreme south of England. About London we are obliged to take care of it; perhaps there is no place in which it would look bolder and more effective than that in which our engraving shows, prepared from a photograph, for which we are indebted to Canon Hole or some other good friend who has wintered in the region.

**Electric horticulture.**—Having seen several accounts lately respecting the electric light and the great expense of maintaining a sufficient motive power to produce satisfactory results, I venture to ask, could not the ordinary smokejack, as used in kitchen chimneys for cooking purposes, be brought into the service and used as a motive



American Aloe by the Riviera shore.

power for supplying horticultural buildings with the electric light? The smokejack could, I think, answer the double purpose of driving the wheel and maintaining the necessary temperature in the houses.—C. J. B. Invergordon. [It requires a six-



horse-power steam engine to work three dynamos; two of these burn a lamp each, and the third we use as an exciter to the magnets of the two. A smokejack is a machine of very limited power; it does its work with little speed, but in driving dynamo machines great speed is required. The large ones we use make 680 revolutions per minute; smaller ones go up to 1100. We greatly reduce the expense of steam power by using the escape steam for heating the houses. As a mouse to a dray horse would be a smokejack to a one-horse-power steam engine.—D. BUCHANAN, *Sherwood.*]

## THE FRUIT GARDEN.

### OUT-DOOR GRAPES.

THAT good Grapes may be grown out-of-doors in good situations in an average of seasons is, I think, certain, but it is the exception, and not the rule, to see a well-cared-for Vine on a cottage wall. Too often they look as if the house was to be let. This ought not to be, seeing how useful the crop is when the Vines are taken care of and well treated. Unlike other fruit-bearing trees, the Vine is sure to produce a crop every year, and it is seldom that the fruit does not ripen well enough for wine making, if not for eating. The Vine is, moreover, so accommodating, that it may be kept in almost as small a space as one likes, and yet be fruitful, as by cutting out the old wood, laying in young, and getting it well ripened, it will be sure to bear plenty of fruit. It may be planted at the foot of a low wall and trained horizontally, or at the foot of walls on which there is not room enough to train any other kind of tree, and trained upright, with one, two, or three shoots, such as behind chimney stacks, &c., and with every prospect of success.

Most people will, I think, admit that the main cause of Vines getting into disrepute is the bad management to which they are subjected—such as overcrowding the ripe wood, and not thinning the summer shoots, or tying them in to admit light and air, allowing all the bunches that show to remain, instead of thinning them out according to the strength of the Vine, which is another evil; the bunches themselves should be thinned, which would allow the berries left to expand better, instead of injuring each other by overcrowding. The statement is often made, "I should look to my Vine, but I do not know what to do to it." This is to be regretted, seeing that pruning a Vine is even easier than pruning a Rose, Apple, or Gooseberry tree. I am not quite sure that gardeners are not partly blamable for the neglect into which cottagers' Vines have fallen in many parishes; they should have taught them how to do better. There are but few villages far distant from someone who keeps a good gardener, and if one in a village were shown how to treat his Vine the example would soon spread. It has often occurred to me that it would be well to offer prizes at autumn shows for out-door Grapes. This would give a fresh impulse to this industry.

I well remember some ten or fourteen years ago prizes being offered at South Kensington for out-door Grapes; and if my memory serves me right, I think that in the year 1869 Black Hamburgs from Hedsor, near Maidenhead, secured the first prize in the class of black kinds, and the position was not one of the best where the Vine grew from which they were cut. It is to be regretted these prizes were not continued. J. C. F.

### MR. BUSHBY'S GRAPES.

IN THE GARDEN (p. 431) "W." states with perfect truth that Mr. Bushby's vineyard at Dalkeith has for many years produced excellent Muscat Grapes; but in connection therewith he makes statements which need some correction. Mr. Bushby's Vines, he says, were planted and grown in the natural soil of the garden without any special preparation; and again Mr. Bushby was the sole cultivator—at least no extraneous aid is referred to. The inferences many are sure to draw from such statements are that prepared borders for

Vines are a waste of means, and that badly-grown Muscats in common soil indicate want of skill on the part of the cultivator. The real facts of the case are not, however, fully represented. The date "W." mentions was before my day at Dalkeith, but I remember spending several days with others in mixing loam and artificial manure to apply to the roots of Mr. Bushby's Vines—facts which made me look and think, and think and look again, at "W.'s" statements. The way in which we added to Mr. Bushby's border was the same as I saw practised very extensively at the Tweed Vineyard, under Mr. Thomson. Every person there and about Dalkeith knew that Mr. Bushby's Vineyard was planted about 26 years or so ago in the natural soil of the garden, but the Vines made little progress in this, and when Mr. Thomson took charge of the gardens at Dalkeith, he raised the roots of Mr. Bushby's Vines and put a large quantity of good loam, bones, and other manure under them, when the Vines made good progress and produced excellent crops. Moreover, to state that they were cultivated by Mr. Bushby is, well, a mistake, as Mr. Thomson or one of his men always pruned them, the young men in Dalkeith Gardens thinned the Grapes, and one of the men from the same garden attended to the fire, as a rule. I will not dispute that Mr. Bushby has a good general knowledge of how Grapes should be grown, and may give air, and damp the floor of the vineyard, and attend to similar small matters; but at the time I speak of, and for years before that, Mr. Thomson or some of his men did all the important work; and I suppose Mr. Dunn gives Mr. Bushby the same aid as Mr. Thomson did. I may state that there was also an addition put to the length of the vineyard, and Mr. Thomson had all the natural soil excavated, and made the border up with the best loam and other necessary materials that could be got, and with his own hands planted the Vines. CAMBRIAN.

**Standard Gooseberries.**—In reference to the note of Mr. P. Neill Fraser (p. 471) about what stock should be used for standard Gooseberries to give clear stems of, say, 3 ft. or 4 ft., allow me to state that in gardens about Vienna Gooseberries are grafted on stems of *Ribes aureum* and *R. nigrum* for the purpose of forming standards. It is done during spring in a cool, closed house, Gooseberry grafts being rather adverse to the heat of the general propagating house.—LOUIS KROPATSCHEK, *Laxenburg.*

**Keeping Nuts.**—If "Hortulanus" will simply bottle them—Walnuts shelled, but Nuts put into the bottles in their husks, corking tightly, and sealing with wax or rosin—he will find when opened for use that they only require wiping to be as good as when first put in. I have eaten Nuts so kept in the following June or July perfectly good. In a dry cellar I have been told that thus treated they will keep sound for two years.—S. I.

**General Todleben Pear.**—This is a handsome Pear, but with us the flavour is only second rate. We have a young tree of it trained on a west wall, which gave us some grand fruit, but to my great disappointment at the end of October, on examining them, I found them all gone at the core while the outside looked quite green, and I was not able to keep one of them after November 5. It is said by some to keep till December and January. The rotting is most detrimental to it, if it is its usual character. I shall be glad to hear how it behaves with others who have grown it; in what situation it does best, and if ever first rate in flavour.—J. C., *Farnborough.*

**Sectional trellises for Peach trees.**—Some seem to be successful with fruit trees trained after this method. When calling at Sanderhurst Lodge, Wokingham, in the end of October, I observed some fine healthy trees, with well ripened wood, on sectional trellises, and in the fruit room I was shown some fruit of the Salway Peach, large and finely coloured. I asked Mr. Townshend, the gardener, to weigh one, which he did, and it turned the scales at 11 oz. This was an average

fruit from a tree on the sectional trellises. I was told that the crop last season was in all ways excellent. Although this Peach is not of the best flavour, still such fruit as that just alluded to is invaluable for making up a dish at this season.—J. C., *Farnborough.*

**Fruit of the Japan Quince.**—I shall be much obliged if some one of your correspondents will tell me if the fruit of *Pyrus japonica* is edible; and if so, if he could give me some recipe for turning it into preserve, or anything else. There is a wonderful crop of it this year, and it seems a pity to waste it if it is good for anything.—ENQUIRER.

**Material for plunging Vines.**—At this place—being in much the same condition as Mr. Muir (p. 471) with regard to procuring tanners' bark—some years ago now we gave up the attempt, and now use leaves almost wholly, the exception being when the leaves are very wet, and therefore not likely to heat satisfactorily of themselves; then a small quantity of long stable litter is intermixed with them, and as plunging material we use Cocoa-nut fibre refuse, a truck-load of which we got for 25s., and nothing can answer better or look neater.—W. WILDSMITH, *Heckfield.*

**Ribston Pippin Apple.**—Those who recommend the extensive planting of this Apple appear to forget that, if one of the finest, it is one of the most capricious kinds as to soil and situation in cultivation. In genial Kent it appears to thrive, but here and in many places it is a disappointing variety. In spite of all the care that can be bestowed upon it, it is sure sooner or later to fall a victim to canker. Looking through a plantation of fruit trees the other day, one of the finest I ever saw, the owner pointed out two Ribstons, both badly affected, they being the only trees in the whole orchard that had gone wrong.—J. C., *Surrey.*

**Select Cherries.**—I am thinking of cutting down an old Cherry tree, and wish to plant another in its place. I should be glad if you will tell me of a Cherry that will succeed planted as a standard; also will the Duchesse d'Angoulême Pear do as a standard here?—T. B., *Clapham.* [If you desire a kitchen Cherry, the most prolific and hardiest is the Morello, and it does well as a standard in the market gardens near London, and would doubtless succeed in your neighbourhood. The best dessert Cherry for growing as a standard is the May Duke. The Pear Duchesse d'Angoulême fruits freely as a standard, but is always gritty at the core when so grown. A better variety for your district would be the Swan's Egg, a hardy and sure bearer.—W. W.]

**Bird-pecked Pears.**—In gathering our fruit a few years ago we used to be greatly annoyed at finding the greater portion of the Pears pecked near the stalk, the hole being generally about the size that would hold a grain of white Mustard seed. No matter whether the fruit hung upon a standard or upon trees against walls, the holes were sure to be there. All sorts seemed to be served alike, and all so wounded went rotten before they were fully ripe, particularly the more tender and better varieties. In gathering our Pears this season we have not found a single fruit pecked, and I think that I may safely state that we have not seen a bluecap or tomtit about the garden—doubtless the depredators. The late severe winter must have killed them.—J. M. C.

**Blussard Blanc Grape.**—"Tuberoze" (p. 379) gives such a glowing description of this Grape that it quite makes one long to possess it, especially as there is no white Grape in this country of the same type which can be described in similar terms. Just such a Grape is much wanted, a worthy companion for Gros Colmar; in fact, I crossed Gros Colmar with the Duke of Buccleuch last season with the idea of obtaining a white seedling from it possessing the good constitution and large berries of the former. I trust "Tuberoze" will put us in the way of obtaining Blussard Blanc. I may add that we must have it free from Phylloxera, as I believe that pest where it existed in



Great Britain is completely exterminated, drowned, I expect, by the past wet season. Wm. ALLAN, *Gunton Park*.

**New Strawberries.** The *Bulletin d'Agriculture* figures five new varieties of Strawberries raised by Mr. G. Goeschke, of Cöthen, in Germany. Alexandre de Humboldt somewhat resembles the old Goldcomb; it is described as coming very large; colour, dark shining red, with a delicious perfume; habit, vigorous, very hardy, and prolific; a mid-season kind good for dessert. Comet has extra large fruit, juicy, melting, deliciously aromatic; habit, dwarf, but hardy, a prolific, but late variety. Roi des Zoulous, or rather Zulu König, somewhat resembles Sir C. Napier in shape, but it differs from that well known kind in the fruit becoming almost black when ripe. It is said to be a first class variety. Borussia bears a strong resemblance to the once much grown Imperatrice Eugénie; is a mid-season kind, fine in flavour, very vigorous, and prolific. Superintendent Oberdiek is in the way of Sir Harry, deep red when ripe, juicy, sugary, and with an agreeable odour; a mid-season kind, and said to be wonderfully prolific. — J. CORNHILL.

**Raspberries.** — Is it advantageous to cut down newly-planted canes, so as to give a better chance to next year's growth? The reason I ask is because I have too often found that the year after planting a portion does not throw up young suckers, and consequently dies. — S. K.

**Judging fruit.** What is the principal point to be considered in this matter? Is it only outward appearance? or is the quality taken into consideration? — W. LITTLE.

## SEASONABLE WORK.

WOODS AND PLANTATIONS.  
GEO. BERRY, LONGLEAT.

INDEPENDENT of the usual busy routine work at this time of the year, the terrific hurricane that swept through every quarter of Britain, on the 14th ult., and dealt such dire destruction in many of our fairest woodlands and parks, has caused a lamentable and unexpected amount of work to be done. On many estates the breakage was so considerable that months must pass before a clearance is made of all the windfalls, and the woods and lands, rides and hedges are put into good order again. Fortunately, at Longleat we escaped with less damage than many of our neighbours; indeed, the number of windfall trees is but few compared with what were blown down on the memorable gale on October 14, 1877, just four years ago, and by a strange coincidence on exactly the same day of the month as that on which the recent hurricane occurred. Then upwards of £450 of timber was uprooted, whereas the value of the timber blown down last month will not amount to £100. Doubtless the dry and firm condition of the land about here at the time the hurricane visited us saved many noble trees from destruction. Had the ground been saturated with rain, I believe as disastrous results to ornamental timber would have happened as in 1877.

**Park and other trees.** — The worst casualties that befel our park timber was a huge Lime tree, which stood in an open part of the park. It had a short thick butt and an immense spreading head, and the quantity of soil which turned up adhering to its wide-spreading roots was amazing. Another fine tree in the park was snapped through the butt at about 5 ft. above the ground; this was a long, clean grown, beautiful Abele Poplar, girthing about 12 ft. in circumference at the broken part. In the flower garden two fine old Elms that formed part of a noble clump succumbed, leaving a gap or inroad for future rough winds, and quite spoiling the effect of the clump, as other trees in and near this bold group were sadly disfigured by the falling ones. The greatest number of windfalls was in the hedgerows on farm lands, and mostly occurred to Elms. Minor losses and breakages of course happened to all kinds of trees, and no end of broken heads and arms are met with at almost every turn in roads, lanes, and rides. Conifers and other evergreens may be said to have stood the fury of the gale without any

serious disasters, and the young plantations, too, are little the worse for the passing tempest. I think Longleat may well be congratulated on escaping so lightly, considering the sad havoc said to have been committed on woodlands generally throughout the country.

**Forest tree planting.** — Every advantage should be taken of the present mild open weather to push forward all planting operations that are contemplated this season. The disturbing or removing of plants while withering east winds prevail, or during frosty weather, should be avoided as much as possible. Great care should be exercised when plants are lifted to guard against their tender roots being exposed to the air longer than is unavoidable. This cannot be too strongly impressed on planters. When conveyed to the planting ground they should be securely heeled in in trenches, covering their roots with plenty of soil, and it is also well to secure their tops from the attacks of hares and rabbits, in case of frost or snow setting in. Any light littery material, such as Bracken or rough Grass, spread thinly over all will suffice to secure them from harm, but where the planting is on an extensive scale the simplest and easiest plan is to fix wire netting temporarily round the plants when heeled in. One night's neglect in this matter may occasion the loss of many plants. It is surprising what effect a keen frost has on the appetites of hares and rabbits, and more particularly if they find out any fresh plants to attack; these they will devour in preference to all other vegetation. Pit planting is the best method for insuring success with transplanted trees of a few years' growth, and the holes are all the better for being opened some time before they are likely to be required. The soil thus exposed gets mellowed and tempered by the weather. As to the particular kind of plants to be used for profit and ornament, so much depends on soil, situation, and exposure, and even local circumstances, that only a general notion can be given of the most suitable trees to recommend for planting. Larch is still unsurpassed as the most profitable Conifer for hill-side planting, but on the tops of hills or in low-lying bottoms it is not likely to prove a success. Pinus Laricio takes well, and grows away at a rapid pace in thin, poor, exposed land. For such positions it is the best that I can recommend. In sheltered valleys and bottom land Abies Douglasi is well suited; it grows wonderfully fast in moist, open soils, but likes shelter from cutting and prevailing winds. Amongst hard woods, Ash and English Elm are best for heavy, deep soils on flattish lands. The former should be planted extensively wherever it is likely to succeed, as it is in greater request than any other kind of home-grown timber, and realises a high price as compared with other timber. On the tops of hills or on poor sandy slopes the Beech should be introduced freely. Wych Elm and Sycamore are also trees that ought not to be forgotten when planting exposed and poor sites. Oak, Lime, and Sweet Chestnut are best adapted for deep, heavy, rich soils, but are not likely to be so profitable a crop as Ash or Elm under similar conditions. In moist situations near rivers or other water-courses, the Abele and black Italian Poplar and the Huntingdon and Bedford Willows succeed best, and grow rapidly into profitable timber. Alder is in demand in some localities for charcoal. Where there is a local demand for this wood it might be profitably grown on the banks of streams or in marshy land.

## FLOWERS AND PLANTS IN THE HOUSE. G. J., SURREY.

A USEFUL thing is often close at hand and may be overlooked from its very familiarity. The Globe Artichoke is a plant of the highest order in decoration, but because its flower-buds are very good to eat we generally banish it to the kitchen garden and keep it there. If we could only forgive its usefulness for the sake of its beauty, we should find it one of the best plants for conservatory and house decoration. A group of five or six in a cool hall or well-lighted corridor, surrounding a few pots of palest pink Chrysanthemum, is a decoration that can hardly be improved upon.

The same combination is good for table glasses. 1, large table bouquet — Chrysanthemums, palest pink and white, cut 18 in. long, with leaves of Globe Artichokes, in a large trumpet-shaped glass; 2, twenty-five spikes of Mignonette (Miles's Hybrid Spiral) from the greenhouse in blue and white delft; 3, Jasminum grandiflorum, from the greenhouse, with sprays of Japan Privet; 4, nine or ten dark Daturas (Broomstick) in a large boldly-fluted bowl of white Italian ware, with leaves of Saxifraga crassifolia. The Daturas are sunk in the water to half the length of the trumpet, otherwise they do not last. The leaves of the Saxifrage are mostly those that grey facing the south and have turned red. This is a noble flower decoration, about 2 ft. across. Where the Saxifrage abounds, as it does in many old shrubberies, it is worth while to cut out whole crowns; the great leaves group better together in their natural way of growth, and will last through several shifts of Datura flowers, of course changing the water and cutting the ends. Pot plants: Bouvardia jasmiflora, Dieffenbachia Bausei, Pandanus Veitchi. In surfacing pots of the latter with fresh Moss it is well to keep it just away from the plant; damp Moss against the collar makes it rot right off.

## FLORAL DECORATIONS.

J. HUDSON, GUNNERSBURY HOUSE.

THE weather being extremely mild of late, Jasminum nudiflorum has opened freely. Sprays of this handsome winter-flowering climber associate well with the dark bronzy foliage of Berberis Aquifolium. A few stray blooms of Chinese Roses which continue to open, are very useful at this end of the season. Chrysanthemums of all colours and sizes can now be had in abundance, and therefore they should be largely employed in floral arrangements for the next few weeks. After they are cut they absorb a quantity of water, a circumstance to which attention should be paid. The vases should be emptied and refilled at least twice a week. When this is done the stems should have a trifle cut off them, and then re-arranged. Some of the very finest flowers look well placed singly in specimen glasses, and the Pompones make good coat flowers with the addition of a leaf or two of scented or Oak-leaf Geranium. Occasional stray blooms from Tea-scented Roses in pots, Niphetos, or Madame Falcot in particular, make beautiful button-hole flowers, more attractive, if possible, at this season of the year than at any other. Of Bouvardias, two of the best and most durable for this work are Vreelandi (white) and Hogarth or elegans (scarlet). About three flowers of Calanthe vestita rosea carefully wired will make a handsome button-hole; so will one small spray of Euphorbia jacinthiflora, with its own foliage, a small spike of white Roman Hyacinth being added thereto. Blossoms of Gardenia intermedia likewise make choice coat flowers, using its own foliage now instead of Fern fronds. For the drawing-room an effective arrangement may be made just now with the following subjects. Let us suppose the stand to be filled has one tall cornucopia, with three smaller ones as branches near the base. For the topmost glass use spikes of Salvia splendens and white Roman Hyacinth, with a fringe of Maiden-hair Fern and two or three rather long growths of Myrsiphyllum asparagoides trailing below. In the lower glasses place bunches of Violets or choice bits of Orchids, adding a few Fern fronds. Among plants that may be advantageously used just now in the house the following will be found serviceable, viz.: Pandanus Veitchi, small well-coloured plants of Crotons and Dracenas for the dinner table, and Ficus elastica, Curculigo recurvata, and Dracena rubra for the drawing-room or entrance hall. All these plants will stand well where gas is burned, taking ordinary precaution to change them every few days.

## FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Vines.** — Where new Grapes take precedence of old ones the first house may be closed at once, but fine heat, unless the weather becomes much



colder, need not be applied for more than two or three hours every morning, as the fermenting material will be almost sufficient to start the buds, particularly where the Vines are old and have been forced for a number of years. Young Vines which have not been forced early will require a higher temperature, combined with frequent syringing with warm water, and the bending of the roots to a horizontal position to insure an even break, but when the buds are once fairly on the move, the low temperature applicable to old Vines will be the safest if not the only way to success. Houses from which all the fruit has been cut may be left open night and day, as exposure to all weathers, including a few degrees of frost, does the Vines no harm, while their rest, if Vines do rest, is as effectual as it can be. Follow up pruning as the leaves fall, always bearing in mind that a long rest after pruning is in favour of strong compact shows. Remove all inert surface soil quite down to the roots, and replace it with fresh turf and bones immediately after the houses are cleansed. If inside borders have been allowed to get very dry they should be well watered before the top-dressing is applied, and old Vines from which heavy crops have been taken may have a little good rotten manure added to the compost, but young ones will be best without it until the fruit is set and beginning to swell.

**Late houses.**—The month of November, particularly when the weather is mild and damp, as it has been this season, is the worst in the whole year for ripe Grapes in general, and thin-skinned kinds like the Hamburgh in particular. Fortunately the foliage is now ripe, and in many cases cleared away, and with its removal the worst cause of damping has disappeared. In very late houses the main leaves may not be ripe enough to part from the Vines, but where this is the case a great deal of light and air may be let in by cutting away all laterals and shortening the fruit bearing shoots to within two or three joints beyond the bunch. A little fire heat will be required for keeping out damp, but great judgment will be needed in its application, as sudden changes are injurious to ripe Grapes either while hanging on the Vines or after they are removed to the Grape room.

**Pot Vines.**—Where these were shut up early in the month, and the rods have been suspended over fermenting material, the buds will soon show signs of vitality. When this stage has been reached the day temperature may be increased a few degrees with advantage, but nothing will be gained by hard forcing at this dead season, or by increasing the night heat unless the weather is unusually mild. Attend regularly to the fermenting material placed about the pots, and make timely additions from the reserve ground as soon as the bottom heat shows signs of declining. Oak leaves and short stable manure well worked and fermented make an excellent plunging medium, as the manure gives off ammonia and atmospheric moisture highly favourable to the swelling and breaking of the buds. Very little ventilation will be necessary for some time, but when air is admitted the top lights only should be opened.

**Cherries and Plums.**—The trees in this house will now be leafless and fit for the little pruning which judicious summer pinching may have left necessary. When this has been done the annual cleansing of the trees must be taken in hand, and carried out with the greatest care, as the growth of these fruits under glass with insects as opponents is a simple impossibility. The most troublesome of these are black fly and brown scale, but neither of them can long exist where strong soap water is used before the winter dressing, and the appearance of the first enemy in the spring is the signal for warfare. Another important matter is the thorough cleansing of the walls, paint, and trellis, the first with a wash of quicklime and sulphur, and the latter with good oil paint made up with turpentine. These matters disposed of, remove all old surface dressing, replace it with good virgin loam, bone dust, or rotten manure, water if very dry, and the house will be ready for starting. Ventilate freely, with nets

drawn over the openings if birds are numerous, and avoid the introduction of plants which may establish a new colony of insects.

**Figs.** The first batch of pot trees intended for starting at the end of the month will now require attention. Assuming that the house has been properly cleansed, let each tree be carefully washed with a strong solution of Gishurst compound, thin out weak shoots, and tie in neatly to new stakes. Examine the pots, and if the balls are very dry give them repeated waterings, at short intervals, with tepid water, until every part of the soil is properly moistened. Place the trees on brick pedestals or inverted pots, in a mild heat, from fermenting materials thrown loosely into the pit, and add fresh Oak leaves by degrees, until a bottom heat of 70° to 75° can be secured to the roots near the bottoms of the pots. Syringe two or three times a day, and keep a mean temperature of 60°, by warming the pipes every morning, when fire heat is needed, allowing the fermenting material to suffice for the night, until the terminal buds begin to swell.

**Late houses,** in which the trees are planted out, will require plenty of air in mild weather, but if they are not to be started before the end of the year, pruning and tying may be allowed to stand over for bad weather. It will, however, be well to get them loosened from the trellis and well washed, as insect pests in a dormant state can be dispensed with. If the houses require lime washing and painting inside, this should now be done preliminary to painting the trees with the usual winter dressing, which may be laid on pretty strong, say 8 oz. to the gallon. Care must be observed in its application to the young wood now thickly set with young Figs, otherwise the slightest scratch from a hard brush will mar the beauty of the fruit when ripe. Trees in late houses or wall cases should be untied and allowed to fall away from the glass where they can be protected in very severe weather.

#### FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

THE open weather which we are now experiencing has been exceedingly favourable for Chrysanthemums, which at one time appeared as if they would bloom late, but their blossoms are already fast expanding, and should we get no frost they will be fine and all the more welcome now that we have had to wait so long for them. As they are so showy and useful, every precaution should be taken to preserve them to as late a period as possible, and if they happen to be against walls or fences they may easily be protected by the aid of a few stakes to support rods tied to them on which to run mats or canvas screens by night, or to lay any old lights that can be spared, which will not only protect the flowers from frost, but rain as well, and place them in almost as good a position as if they were in a house. The winter was such last year and the early part of this that it carried death and destruction among Roses, which will have to be largely bought if gaps and vacancies are to be refilled, and as the demand will in any case be great, those who would have strong plants should not delay in giving growers their orders. There is a double advantage in this, as not only do the first comers get the best served, but by planting early, while there is still some warmth in the ground, fresh roots are formed quickly, and the Roses become re-established before sharp weather sets in.

**Soil and manure for Roses.**—As all Roses are fond of deep, rich soil, the beds or positions intended for them should be trenched or double dug, and have plenty of rotten manure worked in as the digging or trenching proceeds. In cases where the land is very stiff and heavy the best manure to use is that from horses, as this contains much vegetable matter, and is a great help in preventing the stiff soil from binding too closely and shutting out air, which has such a sweetening, beneficial influence on the character and texture of all soils. For light sandy ground, cow manure is the most suitable, on account of being cooler in its nature, and

when in a decomposed state highly congenial to the roots of most plants, and particularly so to those of the Rose. What improves light land more than anything else for growing the queen of flowers is clay; not the sticky stuff one so often sees, but the flaky material to be met with in layers in pits where brick earth is got, which, when exposed to the atmosphere, crumbles to pieces. These fine nodules mixed up and buried retain moisture for a very long time, and it is surprising the way in which roots thread their course along and through them, and with what avidity they find them out and feed upon them. Knowing this to be the case, and having witnessed the good effect of such clay as that mentioned in the culture of Roses in light land, I strongly recommend its use, but it should be applied in moderate quantity and kept well under the surface. In the planting of Roses all the preparation they require when received is just to trim the ends of any roots that may have become jagged or injured in the process of taking them up, as the tops are best left intact till the spring. As soon as the planting is finished and the soil made tolerably firm around the plants by treading, the next thing is to mulch the ground over with some light, half rotten manure, which is a most important matter to attend to, as it insures the safety of the plants against frost by protecting the most vital parts, viz., the collars, or, say, the junction of the Rose and the stock. Not only is mulching requisite for freshly planted Roses, but it is just as essential for those established, and if Teas are to be saved from injury by the severity of the weather, additional protection must be afforded. The best way to treat standards of these is to bind hay-bands round about the part where they were budded and at the base of the lower branches, which, with a mulching over the roots, will carry them safely through any ordinary winter. Teas in beds may be easily sheltered by working in among them some fresh, dry leaves or Bracken, which may be kept securely in their place by sticking some Gorse or other evergreen twigs thickly between the plants, and the twigs will also be a great help in warding off the sharp, cutting winds. To have Tea Roses in perfection and get flowers from them both late and early, there is no situation equal to a warm, sunny border, under a wall or fence, or other similarly sheltered position, but they should be far enough from trees to escape being robbed by their roots. To prolong the season of such sterling useful sorts as Maréchal Niel, Celine Forestier, Climbing Devoniensis and Gloire de Dijon, it is a good plan to plant on different aspects where they all have plenty of room to ramble, as it is only the long, free shoots that afford the fine flowers. To train these and other climbers on walls, strained wire is best, as by its use there is no occasion to nail and spoil or deface the bricks.

#### PROPAGATING.

**Heaths.**—The species so largely grown for winter flowering, such as *Erica gracilis*, *cafra*, *hyemalis*, and *melanthera*, are propagated from cuttings taken during the summer months, when the young side shoots are of sufficient length. For this purpose the cutting pots require very careful preparation, and above all good drainage must be secured. If but small quantities of cuttings are needed they are best put under a bell-glass, in which case the size of the pot used will depend upon the size of the glass, but where large numbers are needed, and they are put in a light separately, or a case or two in the propagating house is given up to them, then 6-in. pots will be found best. They must be perfectly clean; invert a small one over the hole in the bottom, and on this place rough crocks, then some smaller, and finally fill up to within 1 in. of the top with crocks broken very fine. This done, fill up to the level of the rim with peat and sand in the proportion of two-thirds of peat to one of sand, and let the whole be pressed down very firmly. For this purpose it is necessary to sift the soil through a  $\frac{1}{4}$ -in. meshed wire sieve. Whether the pot be surfaced with a layer of sand



or not depends upon individual opinion; some hold strongly to that method, and others again are opposed to it on the ground that it is more difficult to ascertain the state of the soil as regards moisture when there is a thin layer of sand above it than without it. For cuttings, the young side shoots so freely produced are taken, and it is better to simply strip them from the branch if by so doing they are not left longer than from 1 in. to 1½ in., but if of greater length they must then be cut, as only the top part is used. The leaves must be carefully removed from the lower half of the cutting. In some kinds this may be done by taking a firm, but gentle hold of the upper part with one hand, and with the other stripping off the leaves one by one, commencing at the bottom. If the leaves become readily detached without bringing away with them a strip of the bark, this process may be continued; but if the bark is injured in any way by it, then a sharp-pointed pair of scissors must be used, the leaves being cut off as near the stem as possible. For the insertion of such small cuttings an ivory dibble is far more suitable than one of wood, as it may be brought to a much finer point, and owing to its smoothness it enters the soil more readily. The pots should be lightly watered about an hour before they are required, and when such is the case, if bell-glasses are used press them down in their places sufficient to leave the mark of the glass as a guide for the insertion of the cuttings.

When putting them in commence about ½ in. within the mark and continue that all the way round; then the centre may be filled up. Each cutting must stand free from its neighbour, overcrowding being fatal to great numbers of them. The cuttings must be inserted firmly, and on this subject a word or two may be said, as the way in which this is often done is the following: The hole is made and the cutting put in; then the dibble is held in a slanting position when firming it, thereby securing the upper part, but leaving the base loose; whereas after the cutting is put in the dibble should be held as upright as at first, with the point about ¼ in. from the cutting; then with one downward thrust it will be fixed securely in its place. If the pots are placed in a close case without bell-glasses, then the outside row of cuttings may be put close to the edge of the pot. After being finished, give a good watering to settle to soil in its place, and leave the glasses off for a little time to dry the foliage. Then, placed in an ordinary greenhouse temperature, and well shaded, they will commence to root in about a couple of months, and just then a little additional heat will be of advantage to them. Attention must be paid during the whole of the time to wiping the glasses every morning, and if the leaves are wet with condensed moisture, leave the glasses off for a little while, and every particle of decaying matter must be removed, as it quickly spreads. When rooted, air must be given by degrees until thoroughly exposed, but before potting them off it is good practice to go over them and just pinch off the top of each, thereby securing short sturdy plants. Where this is done they must not be potted off until growth recommences.

**Eranthemum pulchellum.**—This plant, so welcome in winter on account of its bright blue flowers, is very easily struck from cuttings, which if taken early in summer and grown on freely make good blooming specimens in winter.—T.

#### INDOOR PLANTS.

T. BAINES, SOUTHGATE.

**Winter flowering Begonias.**—There are many species and varieties of Begonia that can, by suitable treatment, be had in flower more or less through the winter. Most of the tuberous-rooted kinds will go on blooming for a considerable time provided they are kept in a growing state, as they continue to form flowers so long as the shoots extend. For this reason it is necessary to keep them in moderate warmth, such as that of an intermediate house, placing them in the lightest position which the house affords, and if

the pots are very full of roots giving them liquid manure every other time water is required.

**Bouvardias and Epiphyllums.**—A plants of Bouvardias that have been flowering through the autumn begin to fall off, others should be placed in heat to continue the supply. To obtain from these the full complement of flowers which they are capable of yielding, the plants will now require warmer treatment than sufficed earlier in the season, for although the natural free flowering habit of Bouvardias is such that they will bloom to some extent under cool treatment, yet, where so managed, after the solar heat is low the flowers are poor, and there is little progress made with the successional bloom which should follow that first produced at the extremities of the shoots. Where a good stock of Epiphyllums of the truncatum section exists, and they have been so treated during the summer as to induce a disposition to bloom freely, a supply of their bright looking flowers can be kept up through a good part of the winter by introducing a few at a time to the stove or forcing pit. The flowers do not last very long in a fresh, presentable condition, consequently no more of the plants than is necessary ought to be brought on to bloom at a time.

**Heliotropes.**—Where sweet-scented flowers are in demand for cutting, these plants should be grown in considerable quantities, for so accommodating are they, that with an intermediate temperature they will keep on flowering the greater portion of the winter; but to have them at this season, the plants should be specially prepared. Small examples struck from cuttings in the spring and grown on in 6-in. or 8-in. pots, and well hardened up by exposure to the sun through the latter part of summer, will bloom freely now with a temperature of 55° in the night. Old plants grown in large pots and placed out-of-doors during the season will answer equally well and furnish flowers in such quantities as will well repay for the room they occupy, but in all cases they should have all the light it is possible to give them, with a little air on mild days, or the flowers when cut will be more liable to flag than many things. These and other plants that bloom from growth that is made during the winter are very different from those that make growth and set their flower-buds in summer; with the latter winter forcing simply causes the development of the bloom already formed without the shoot extension that goes on with the former description of plants, and which, from the diminished light and air which are present in winter, are necessarily softer and less able to bear the hard usage to which cut flowers are usually more or less exposed.

**Azaleas.**—Where plants of such varieties of these as will bear forcing early have been prepared by maturing growth and setting their buds early in the summer, they may at once be put in heat—a night temperature of 55° will be enough to commence with. The old white indica alba, and an improved variety of it known as Fielder's white, are better for early forcing than some of the newer kinds with better formed flowers, which latter can with advantage be used later on. The hardy purple-flowered A. amoena and the mollis varieties are excellent forcers, particularly the latter, which, from their natural disposition to bloom early, come into flower with little forcing. There is a great difference in the quality and endurance of these and all other flowers forced to come in during the dead of winter, consequent upon the treatment they are subjected to. One of the principal things to observe is not to keep more moisture in the atmosphere than is necessary to promote a healthy development of the bloom. Anything approaching the moist condition of the air that would be requisite in spring or summer is certain to rob the flowers of much of their useful properties.

**General stove plants.**—Maintain a drier condition of the atmosphere with the collection generally—particularly those that are deciduous or that require to be kept dor-

mant for a time—only giving as much water as may be required to keep each species from suffering through an over dry condition of the soil. In this it is necessary to act with judgment, for though some evergreen species will bear their roots whilst at rest being in an all but dry medium, others, for instance Ixoras, would be seriously injured if their roots were allowed to get so dry as Gardenias would bear. The last named plants will, if in sufficient heat, yet yield a few flowers, but however well set with bloom and matured the growth may be, the blooms open very slowly during the short sunless days of winter. To have these flowers of a pure white colour they should always be gathered within a few hours after they have opened; otherwise they soon begin to turn yellow.

**Perpetual Carnations.**—If these are grown in sufficient quantity, and they have been treated so as to give the requisite succession of bloom, there will be many of the old plants that flowered in the spring, or seedlings where these are grown, that will be furnished with flower-stems, the buds of which are well advanced in size; if these are placed in the temperature of an intermediate house they will go on opening slowly and be found very useful. See that the plants before being put in warmth are quite free from aphides, to which they are subject. These insects may be destroyed by dipping into Tobacco water or fumigating with Tobacco, but aphides that subsist on the sap of such hard-leaved plants as Carnations are proportionately more difficult to kill than when they live on more succulent foliage; consequently a second or a third application of whatever is used may be necessary.

**Lapagerias.**—These are amongst the best climbing plants that can be used for the roof of a conservatory or greenhouse, not growing so vigorously as to much injure whatever other things are grown under them; but to have them continue in a strong, healthy state they should be planted out where the roots and the sucker-like stems they make can have some room to spread; yet it is not advisable to turn the plants out of pots until they have attained a moderate size, otherwise from their slow growth and the moist condition the roots require keeping in, the soil gets sour before they take possession of it. For similar reasons it is not advisable even where good-sized examples are to be planted out to make the bed over large to begin with; in place of this it is better to follow the course adopted with a Vine border by adding to it as the roots extend. The best time I have found for planting out or in any way disturbing the roots of Lapagerias is about the present, when in most cases the flowering will be nearly over, for although there will not be much visible signs of growth for some time the young underground shoots produced from buds formed below the surface will soon begin to run, and any disturbance of the roots that is to take place ought to be carried out at once. A thorough cleaning should be given to all Lapagerias now when the shoots and leaves are in a hard, mature condition, as they will be better able to bear any dressing it may be necessary to apply with a view to free them from insects.

#### KITCHEN GARDEN.

R. GILBERT, BURGHELY.

We are busily engaged collecting leaves to fill the forcing pits with Rhubarb. I find clean leaves alone give the best results, both as regards flavour and quality. No variety of Rhubarb, to my knowledge, comes up to Hawke's Champagne; this is only known among the market growers, never having been, to my knowledge, sent out. Sea Kale will not, I think, be sufficiently ripened for lifting for ten days, or more. Before its leaves die off naturally, it is of little use trying to force it. Witloof we find useful, but this we force in the Mushroom house. Our Mushroom beds are now very productive without a particle of fire heat. From spawn supplied by two good houses, totally different Mushrooms appear—the produce of one being small and lean; while that of the other, on the same bed and spawned on the same day, is firm,



and of very much better quality. French Beans will require some attention in the way of keeping up successional sowings. Keep them near the glass, and gather the pods as soon as they are ready. We finish this day (Nov. 5) planting our latest break of Cabbage and west border of Lettuce—Black-seeded Brown Cos. The weather is so dreadfully wet, that very little can be done in the way of digging or trenching.

## THE KITCHEN GARDEN.

### THE POTATO HARVEST.

IN answer to Mr. Inglis's question (p. 458), "What is gained by leaving the tubers in the ground for a month after the haulm is removed," I have to say that I did not state any time during which the tubers should be left in the ground after cutting off the haulm. I would only leave them in the ground till time could be found to lift them. I think, however, that by leaving them in the ground they ripen a little, and consequently increase in market value; if lifted immediately after cutting off the haulm the skins of many sorts would be found to be insufficiently set, and would rub and look unsightly; while when under ground for a time the skins set, and when dug the tubers have a better appearance than they otherwise would have; but, independent of appearance, roots really mature after the tops have been removed. Do not Mangold Wurtzel and Swedes mature after being pulled and stored? Do not our fruits such as Apples and Pears mature after they are gathered? and in what medium would the Potato better mature than in that in which it grows, more especially after the ground is open to receive the beneficial influences of sun and air? Time also at that season is an important consideration, especially where large breadths have to be dug. Mr. Inglis says that if he were to advocate the other side of the question he would say that it would not be unreasonable to expect that while the haulm was green upon the crop the tubers would still be growing, and that I surely do not expect this to take place after the haulm is cut off. Certainly I do not, and Mr. Inglis would be quite reasonable in expecting the tubers to grow while the haulm remained green; but it is just here where the mischief lies, for when the growing tops are once attacked by the fungus the circulation of the poisoned sap is so rapid that all the best tubers are at once affected, so that while in theory you may seem to gain by leaving on the haulm you are actually losing, through the destructive nature of the poison upon the tubers which you are hoping will gain in weight; hence my advice to watch very closely for the least symptom of the fungus, and when detected to at once cut off the haulm and save what you have. The crop may not be quite so heavy or so mature as one would like to see it, but, as the saying goes, "better half a loaf than no bread." I have adopted the cutting plan myself on a good many sorts, and I have found that at the time when the disease attacks the tubers they have nearly reached their full size, and that on good ground from three to four bushels per rod can be dug, but I may say that I should not be in such a hurry in cutting the tops off such sorts as Magnum Bonum or Champion, or other strong growing, disease-resisting sorts like them as in the case of others. Mr. Inglis suggests that the disease may continue to do its work on the stems left in the ground after the tops are cut off, and thinks it would be better to pull the stems right up; but I submit that, provided the disease is stayed by cutting the tops off, it is better to do that than pull the haulm up, as when cut there is no danger of disturbing the roots, and I have not found that the disease continues its work on portions of stem left after cutting, which gradually die away. In fact, the circulation of poisoned sap is stopped, and consequently its effects. I should certainly adopt Mr. Inglis' plan if I found that the disease was not at once arrested by cutting off the tops.

Brookwood.

ROBERT LLOYD.

### THE WINTER QUEEN.

OF all flowers, the Chrysanthemum may fairly, I think, be so called. Originally introduced to Europe in 1764, it seems in the first place to have been cultivated by Miller in the Chelsea Botanic Garden, but was soon afterwards lost. Again introduced—this time by way of Marseilles—in 1789, it reached London in 1795. Phillips in "Flora Historica," published in 1824, tells us that the new plant was sold at a high price soon after its introduction, but that it was not until the beginning of the nineteenth century that it attracted attention as a florist's flower. "Then," says he, "like the Roses of China, Chrysanthemums soon escaped from the conservatories of the curious, and rapidly spread themselves over every part of this island, filling the windows of the cottagers and the parterres of the opulent with autumnal beauty, that now vies with that of the China Asters in variety of colour." Conservatories are now everywhere devoted to the Chrysanthemum, and most numerous and pleasing are the many races and varieties now known and cultivated.

The races are as follows: Quilled or tasselled; the incurved or Ranunculus-flowered; Pompones flowered; Anemone-flowered, large and small; Japanese; and, last but by no means least, the modern race of early or summer blooming kinds, which are the most valuable for out-door culture, seeing that they begin to produce their blossoms long before the frosts of late autumn occur, which not unfrequently destroy the beauty of the other or late flowering races when grown in the open air. In China and Japan this flower is so highly esteemed, that it may be said to hold a post of honour equal to that of the Rose itself with us, and in China the "Feast of Chrysanthemums" is a great occasion. Fortune tells us of the beauty of the Chrysanthemum in Oriental gardens, and how banks of the gorgeous blooms are illuminated at night with lanterns. "We once," says Mr. Burbidge, "went to see the late Consul Whampoa's garden at Singapore, the entrance to which is a long bower of the most gorgeous tropical flowers, waving, crimson-stemmed Palms, and climbing plants of great beauty. Here the 'Sacred Tree of Heaven' (*Amherstia nobilis*) bends under the weight of umbrageous leafage and pendent wreaths of the most gorgeous crimson and golden blossoms. Every pool and stream, of which there are many in the garden, are filled with the rarest of Water Lilies and Lotus flowers. After our host had shown us all this, all the tropical treasures of Kew or Glasnevin in the open air and sunshine, he led us triumphantly to a little sheltered spot and showed us with pleasure beaming from every wrinkle of his smoothly shaven face, not Orchids of curious structure, nor Water Lilies of a loveliness divine, neither Palm nor Fern of filmy beauty, nothing more nor less than a bed of Chrysanthemums—the one flower reminding him of home and country." That the artists and poets of China and Japan have lavished much of their finest and best thoughts and labour in representing this flower in its most pleasant aspects is attested by ceramic wares and textile fabrics of many kinds. The Japanese more especially possess voluminous illustrated works in which the Chrysanthemum in all its phases of race and colour is ably portrayed.

At the present time a fine display of Chrysanthemums may be seen in the botanical gardens of Trinity College, Dublin, amongst other varieties being the typical *Chrysanthemum indicum*, introduced in 1796. Between this and the finest of present-day varieties I need not say there are many gradations. Other interesting plants which may now be seen in the College Gardens are the Chinese Banana (*Musa Cavendishi*) in fruit; the Lace or Lattice-leaf plant of Madagascar (*Ouvrandra fenestralis*), and its ally the Cape Pondweed (*Aponogeton distachyon*), the ivory-white inflorescence of which has the fragrance of Hawthorn, and other useful aquatic plants. The Apple-shaped Guava (*P. pomiferum*) and the tropical Allspice tree are represented by remarkable specimens, while in one of the greenhouses may be seen the weird Elephant's-foot (*Testudinaria elephan-*

tipes), the Camphor tree of Formosa, unique specimens of the singular Grass trees of Australia; rare species of Orchids and Ferns, including the Alabama variety of the Killarney Fern from the United States (*Trichomanes radicans* var. *alabamensis*), and in one of the smaller hothouses several rare Pitcher plants all growing freely. Of these the Giant Pitcher plant of Kina Balu, in Borneo, and *N. bicalcarata*, the two-spurred variety from the Sawas River, in the same island, were introduced by the present curator, Mr. Burbidge, two or three years ago. The gardens are open to all visitors, who present orders from any Fellow of the College, or from the Professor of Botany. Strangers are admitted on presenting their card at the entrance gate of the gardens, situated in the Pembroke Road.

H.

### CHRYSANTHEMUMS IN MID-NOVEMBER.

IF there is any flower that can be made to yield fairly satisfactory results under the most adverse and different circumstances, it is the Chrysanthemum. I have seen it looking tolerably healthy in the south of London and in the sooty suburban atmosphere of Lancashire towns, as well as on a rich southern slope, where soot or smoke never reached it, and I have Chrysanthemums blooming finely now. Indoor or out, amateur or professional can hope to obtain fair success with them with or without glass. There are some varieties, especially those with a tendency to become bare of leaves, that might advantageously be grown as standards, as *Fleur de Marie*, possibly one of the best of the large Anemone flowering kinds, but I have given up growing it outside. Another class I have almost eliminated for outdoor purposes is the incurved. One of the reasons is that they retain any rain that falls in their globular cup-shaped flowers and rot prematurely. But there are some that only slightly incurve, such as *Nil Desperandum*, *Fingal*, and *odoratum purpureum*, and that are blooming fairly well outside now. That beautiful white, *Empress of India*, seems better unexposed to winds and rain. But of the reflexed flowers and Pompones, of 30 varieties inside and corresponding ones outside, on the whole several varieties are more floriferous and have larger blooms out-of-doors than under glass, as *Undine* and *Jewess* among the former, and *Astie*, *Fanny*, *James Forsyth*, *Little Beauty*, and *Bijou* among the Pompones. There are two Pompones particularly good, viz., *James Forsyth* and *Iris*. They are different in colour and habit of growth; the former is an orange yellow tipped with crimson, and curiously enough has one principal stem, up along which it flowers in a very peculiar and happy way. The latter is extremely floriferous, and should be generally grown either for cutting or effect. I am now engaged in counting fifty-five fully expanded blooms on a specimen in an 8-in. pot, several in a border having many more, and clothed with foliage to the base. And this brings me to speak briefly of how I manage them.

Like other things undertaken by amateurs, it has been only after years of failure or partial success I have attained so much satisfaction in results, which I may refer to for brevity: 1, selection and propagation; 2, general treatment; and 3, training and disbudding. As to the first, a few years must elapse before a satisfactory acquaintance can be attained with the varieties that suit best for outdoor growth. In many districts at this time of the year, often up to Christmas, bright Chrysanthemum blooms may be observed on cottage walls and in gardens where this flower gets a preference to light up the dull months. You will do wisely to secure these; and it is easy to find out from those who have them to dispose of the hardier kinds. When the selection has been made, cuttings inserted any time from this forward in any pit, frame, or even window where frost can be kept out, and the same treatment followed as in border Calceolarias, will give you rooted plants by January or February. The earlier the better, for your object is to have the flowering commence as I have had in October, and to be completed before any severe frost comes. We had 5° of frost here



on October 17, but as my plants had been thoroughly hardened and exposed it did them no harm. And this brings me to the second point, and in the general treatment a most material point is this thorough exposure to every ray of light, and consequent perfect ripening. No satisfactory flowering otherwise. The *Chrysanthemum*, too, is such a voracious feeder and rapid grower, that several shifts from pot to pot are altogether unnecessary. When I grow in pots for indoor or church decoration I plunge the pots, pinch back, and feed with manure water and soot during the summer, having previously put a piece of slate at the bottom to prevent worms and rooting through. I grow the taller kinds by the walls, and the Pompones at the back of the borders. Lastly, I rarely have time for systematic training, though a nicely tied down specimen or standard is very beautiful. I find to have large flowers as early as the middle of October a severe system of disbudding must be pursued. Up to the 1st of December I thus secure six weeks of bright flowers when little else is to be seen. W. J. M.

*Cannell.*

## THE INDOOR GARDEN.

### WASTE OF FORCE IN HEATING.

UNDER this heading a correspondent has endeavoured to show that it is a mistake to have large boilers, in which I differ greatly from him, as there is nothing like having plenty of power, even though one may rarely want to make use of it. If the boiler has 1000 ft. of pipe attached to it and only 500 are heated, it takes so much the less fuel. Waste of this takes place where there are small boilers, for to heat the water sufficiently to keep up the temperature in cold weather they often have to be driven much beyond their power, and much of the heat then goes into the brickwork and up the shaft. Of course a boiler may be so large as scarcely to feel the effect of a small fire; but that is not the point, as what Mr. Clarke endeavours to prove is that it is wasteful to have a boiler attached to pipes heating a stove, a cucumber house, and early vinery, and others to keep out frost. Such an arrangement I should consider the very best, and preferable to having other furnaces, as heat can always be turned on at a moment's notice and the lighting of fires saved. In the majority of cases boilers are too small for their work and not sufficiently powerful, at least that has always been my experience; most people flinch at the first outlay, but what I would recommend all to do who may be putting in heating apparatus if they have 1000 ft. of piping to work, to put in a boiler capable of driving at least a third more, and always to have plenty of pipes.—J. S.

—Mr. Warhurst has hardly caught my idea in this matter. I did not advocate the putting down of two boilers to heat a given quantity of piping. What I wrote was that in the case of having an auxiliary boiler it was wrong to put down two boilers of the same size, and I am of the same opinion still; and, more than that, I believe it would pay any owner of a garden such as I described, even if there was no necessity for a safety boiler, to put down one large and one small boiler. It is hardly to be expected that a horticultural builder would see the relevancy of all the evidence a gardener has to offer, because he cannot understand all the circumstances under which a gardener has to conduct his work. Mr. Warhurst very properly alludes to the waste of force in the arrangement of the pipes, a point on which I meant to express my views, but unknowingly Mr. Warhurst supports them.—J. C. CLARKE.

### THE PERSIAN CYCLAMEN.

THIS, one of our most valuable winter and spring-flowering plants, is now generally better treated than was formerly the case, when, in order to give the plants that rest which was supposed to be necessary, water was withheld as soon as they had ceased flowering, and this forced rest was no

doubt anything but beneficial to them, checking in a great measure that profusion of bloom which is now generally the result of improved culture. The bulbs or tubers were also retained for many years, a mode of management now considered undesirable, so much so, that some of the most successful growers of these plants prefer to raise a fresh stock from seed each succeeding season, in the same way as the Chinese Primrose, the Calceolaria, and the Cineraria are generally grown. To accomplish this, in the case of the Persian Cyclamen the seed should be sown about the middle of October, and under proper treatment the plants thus raised will be well established in pots some 5 in. or 6 in. in diameter, and will flower profusely during the following season, or in little more than twelve months from the time of sowing the seed. The seed, which germinates somewhat slowly, particularly if old, should be sown in soil composed of about two parts light loam and one part sifted leaf-mould, using well-drained pots. The latter should be filled with the prepared compost to within  $\frac{1}{2}$  in. of their rims, and the seed should be carefully sown upon the level surface and pressed gently into the soil. It should be slightly covered with finely-sifted mould and carefully watered with a fine-rosed watering-pot. It should never be allowed to become quite dry, and to secure this condition, as well as to accelerate the germination of the seed, the surface of each pot should be covered with a piece of glass, which should be allowed to remain until the seeds have fairly vegetated, as young plants of the Cyclamen, unlike those of some species of plants, are not apt to damp off, and a moist atmosphere is essential to their success. The pots containing the seedlings should be placed upon a shelf or in some situation pretty close to the glass, and may during bright sunshine be benefited by a slight shade, while a growing temperature should be maintained, say not much under 60°. As soon as the plants can be handled they should be pricked into seed-pans in soil similar to that recommended for the seed, and early in February the plants ought to be large enough to be potted singly into small pots, keeping them still near the glass in a moist growing atmosphere. If placed upon a wooden shelf it is advisable to cover it with sand, fine ashes, or Cocoa-nut fibre, which will to some extent retain moisture.

During June, or early in July, the plants should be repotted into their flowering pots, some 5 in. or not exceeding 6 in. in diameter. The pots should be well drained, and the compost used rich turfy loam, with about a third of leaf soil, and a portion of silver sand should the loam be at all stiff. They will now succeed best in a cold pit, or frames placed upon cinder ashes, near the glass, and slightly shaded during intense sunshine. Thus treated, the progress of the plants will be rapid, while the marbled or veined foliage of many of them will be found to be exceedingly ornamental. They may be allowed to remain in this situation until the end of October, or until they are in bloom, when they may be removed to the greenhouse, but should be allowed to occupy a position on the front shelf, where they cannot fail to produce a pleasing effect, as the flowers present great diversity in colour, from the most brilliant ruby red to the purest white, and in some cases large in size.

In order to improve as far as possible the strain of these fine spring-flowering plants when in bloom, a careful selection should each season be made of the finest varieties from which to save seed for the production of plants for the following season. These selected plants should be placed in a favourable situation by themselves; their blooms should be carefully fertilised, and if this operation is performed with due discrimination, the desired shade of colour, as well as improved form and size of blooms, may generally be reckoned upon with something approaching to a certainty. Even where artificial fertilisation is not practised the strain will necessary improve if the seed is from year to year selected from the finest varieties. Although it is advisable to raise a portion of these

plants from seed each season, it is nevertheless advisable in order to secure larger specimens to select also a portion of the finest plants and retain them in pots for the following year; or, what is perhaps still better, as soon as all danger from frost is past plant them out in the open air in suitable soil and position, and repot them early in the following October. These plants will generally be found to form fine flowering specimens for the second or even the third seasons. Although the Cyclamen forms a useful plant for the decoration of the conservatory or the greenhouse, it is nevertheless in a structure devoted for a time entirely to their accommodation that a collection of these plants produce the most beautiful and striking effect. P. GRIEVE.

### IMPROVED CHINESE PRIMROSES.

PERHAPS there is no more useful winter flowering plant for the greenhouse or conservatory than this, nor one more universally grown. Market gardeners, amateurs, florists, and others have all been endeavouring to improve it, and within the last few years both form and colour have been much better than formerly. The new red, or reddish crimson, flowers are the greatest acquisitions we have had for many years. Equally important are the flowers possessing a deep purple tint, and these, like the reddish crimson ones, are now large in size and good in form. Mr. Cannell, of Swanley, who has brought the above to a high state of perfection, also exhibited at South Kensington lately a dozen plants of an excellent pure white strain, in which the footstalks of the leaves are red and the habit good. Mr. Cannell sent me the other day a box containing some of the kinds named above, and with them what might be described as a mixed strain in which there were delicate flesh and deep pink, lilac; one deep salmon pink, suffused with lake; white spotted, and flaked with rosy red, and white edged with pink. These were all of good form and substance, and the flowers about 2 in. in diameter.

The culture of the Chinese Primula is very simple, but it is not often so well grown as it ought to be. The plants are often drawn up through the want of air, and the flower-spikes weakly. To have them good, successive sowings should be made between April and July in a light, moderately rich compost. The young plants, when large enough to handle, should be pricked out and potted on as they require it, and herein lies the secret. If they have all the attention they require from the time the plants appear above ground until they are grown up to the flowering stage, the result will be satisfactory; but it is during the hot summer and autumn months, when many things require doing at once, that these things are neglected. If they are not potted when they require it, or the plants are irregularly watered, they will not flower strongly and well. I place the plants in cold frames, the backs of which are turned to the north, and they are also kept rather close to the glass. Many pinch off the flower trusses, which I think a mistake; the first trusses that are thrown up are the best. Those that come after the main trusses are picked off can be but second-class. The plants are often seen to damp off close to the surface of the soil; this is caused by their being placed in a house that is too cold or damp for them, or both combined. If flowering plants are to do well in the greenhouse during the winter months, a genial temperature and dry atmosphere must be maintained.

**Cuttings.**—Although Chinese Primroses are usually raised from seeds, it ought to be known that there is not much difficulty in propagating them from cuttings, and plants obtained in this way form as good flowering examples as the seedlings. Then there is the different double varieties, which cannot be increased in any other way than from cuttings or division; they can be made to flower in the spring by pinching off all the flower trusses in autumn, but it is not desirable to do so, as they do not flower so well. Now is the best time for them, and they succeed best if they are placed in a warmer house even than a warm greenhouse;



a temperature of say 55° at night, with a rather dry, airy atmosphere, suits them admirably. The variety named *White Lady*, introduced by Mr. Gilbert, is the best of the white varieties, and Lord Beaconsfield is a good double red. Then there is a very distinct variety mottled or spotted with a white ground called *Marchioness of Exeter*, or *Mrs. Barron*; the flowers are perfectly double, and very freely produced. The main difficulty in propagating the double varieties is preventing them from damping off at the cut part, but with care this may be avoided. I put in each cutting separately in a small thumb-pot (thimbles as the nurserymen call them). The compost used is loam and leaf-mould in equal proportions with a liberal proportion of silver sand, and a pinch of silver sand should be placed on the surface of each pot before putting in the cuttings; press them in firmly with the fingers, and then place them under a hand-glass, which must be kept close until roots are formed. We do not give them any water for a week or ten days after they are put in. In the case of some plants, from which it is intended to take cuttings, it is best that they should be in vigorous growth and full of sap; not so Chinese Primulas. It is best to keep them rather dry for some time before the cuttings are taken off, in order to get the moisture out of them. The end of April or early in May is a good time to put in cuttings to flower at this season. They will not all form roots about the same time; some will take much longer than others, but those that are rooted must be removed to a more airy place and be potted soon afterwards. For these double Primulas a small proportion of broken bits of charcoal should be mixed with the soil.

J. DOUGLAS.

*Ilford.*

## BALSAMS FROM HOME-MADE SEED.

"A. D.'s" success (p. 462) in growing Balsams from home-saved seed for twelve years, each year the flowers being always of the best double form, is, no doubt, proof that the Balsam may be grown in this country for seed bearing; still, my experience is exactly opposite to that of "A. D.;" and, although I have not grown Balsams for twelve consecutive years from home-saved seed, I have (as stated p. 402) on many occasions saved seed from plants with perfectly double flowers, and found the following year that the greater portion of them produced single flowers. I, therefore, still maintain that Continental seed is more to be relied upon to produce plants with good double flowers than that saved at home. Seeing that "A. D." has been so successful in growing Balsams from home-saved seed, will he give an account of his mode of culture? "E. B.'s" mode of treatment (p. 414), by which single Balsams can be brought about to produce perfectly double flowers—so double that seed cannot be obtained from them—is doubtless a novelty in Balsam-growing. I wonder how many Balsams would be grown were we to follow up "E. B.'s" practice. Would it pay to grow Balsams until the plants are specimens or half-specimens, and then cut them down and again grow the plants, so as to secure double flowers? There are many other subjects which could be more profitably grown than the Balsam if the plants have to be subjected to the treatment "E. B." describes in order to secure double flowers.

Warwick.

R. GREENFIELD.

## WINTER-FLOWERING BEGONIAS.

MR. CORNHILL, in his remarks on these, only mentions one that is really worth growing for the winter, and that is the old *Ingrami*, a rather stiff poor habited variety, although there are several of sterling worth, foremost among which may be named *B. manicata*, *B. insignis*, *B. semperflorens*, *Saundersi*, and *B. nitida*, all of which are valuable for winter work. *B. manicata* is quite an ornamental plant without flowers, as it has large bold leaves of a peculiar shade of colour and very glossy, each leaf having a number of brownish coloured protuberances on the under-side. The flower-stems grow about 1 ft. or 18 in. high, and terminate in a loose spreading panicle of lovely pale pink blossoms,

which, from being so light and graceful, look well in a bouquet. *B. insignis* is of a different style of growth altogether, as it runs up with long, thin, erect stems, which branch but sparsely and have small foliage. What makes it so valuable is its being very floriferous and harder than most other sorts, as it will stand and bloom well in a small room or greenhouse. *B. semperflorens* *Saundersi* is, as its name implies, a perpetual bloomer. It was raised many years ago by a gardener at Leigh Court, near Bristol. When well grown it is especially useful for vases, baskets, or for placing in elevated positions, as, being naturally drooping, it then shows itself to advantage. Not only is it continuous blooming, but it flowers at every joint, and the blossoms, being of a bright coral red, are very showy. During summer it does well in a greenhouse or conservatory. *B. nitida* is a fine species, from which we are now cutting bloom, and shall continue to do so more or less the whole winter through. We grow all our plants of these several kinds of Begonia in pots or frames during the summer, where they have full exposure to the sun, and early in the autumn they are removed and placed in light, airy positions in the stoves. I have often thought that something might be done with the ornamental-leaved section by way of crossing them with such as *B. Frœbeli*, which resembles them in habit and character. If we could but get its brilliant flowers with their foliage, what a fine contrast the two would afford.

S. D.

**Trichinium Manglesi.** I grow this plant fairly well, but never use peat at all; fibry, sandy loam used in a very rough state with a little dry manure over the crocks is best. I had it this season with twenty flower-shoots in one pot, the tallest 18 in. high; terminal heads of flowers 4 in. long, and with three lateral heads in addition. Competent judges said it was much the best plant of *Trichinium* they had seen, but I fully expect to have it finer next season.—T. SMITH, *Norwy.*

**Utricularia montana.**—This worthy companion of the Orchid family should find a place in the smallest collection of stove plants. Growing in a suspended basket in the stove, its chaste white blossoms, with a bright orange spot on the lip, form a distinct feature amongst the more brilliant occupants of the stove now to be found in bloom, such as *Euphorbias*, *Poinsettias*, *Salvia splendens*, *Bruanti*, and the various *Tydas*. A medium-sized plant of this Bladder-wort, transferred to a larger basket in the summer, has since produced with me five spikes of bloom, so it cannot be said to be a shy bloomer when treated kindly.—J. T. POË, *Riverston.*

**Griffinia hyacinthina maxima.**—Some weeks since "E. H. W." described how he had treated this exquisite mauve-tinted *Amaryllid* during the summer, removing the bulbs to a cool house for some time. I write to say that I have been equally successful in blooming my bulbs, having grown them for the same period in a temperate stove, the main secret of success being, I consider, the fully developing and maintaining in cleanliness and health the foliage of such like evergreen stove and greenhouse bulbs. Just now they are pushing vigorous growth after developing their lovely delicately-coloured blooms last month.—J. T. POË, *Riverston.*

**Forcing Spiræas.**—Has anyone noticed the difference in the time of flowering between the two *Spiræas*, *japonica* and *palmaria*? Introduced into the same place at the same time, *palmaria* is always a week or two behind *japonica*. The common and double-flowered and variegated *Meadow Sweet* (*Spiræa Ulmaria*) and its varieties force readily, as does that elegant double variety of *Spiræa Filipendula*, whilst *Spiræa arifolia* and *callosa* are very difficult to move by artificial heat. This is unfortunate, as there can hardly be a doubt that *Spiræa arifolia* is at once the most chaste and elegant of the whole family.—D. T. FISH.

**Nægelia fulgida bicolor.**—Lovers of this beautiful class of stove plants who have not hitherto grown this very brilliantly coloured member of the family would do well to procure it next spring. Some years ago I grew it successfully from corms I procured from the late Mons. L. Van Houtte, but as it failed in each case to make any corms with me, and was not again offered in the catalogue of Van Houtte until this year, I had to exercise my patience looking in vain for my favourite *Nægelia*. Those who may be fortunate enough to procure it should not be disappointed at the very small size of the corms or their slowness in growth, as if carefully treated (and they are worth the care) they are capable of producing large branching spikes 9 in. or 10 in. in length. This handsome variety has been faithfully figured by Van Houtte in his "*Flore des Serres*."—J. T. POË, *Riverston.*

**The common Syringa for forcing.**—Has anyone succeeded in getting this to flower early, and under what treatment? I have tried it frequently, and the success has hardly justified further trials. Introduced at the same time and treated the same as *Deutzias* or *Lilacs*, it has generally been a month or six weeks later, and the amount of bloom has seldom equalled that produced out-of-doors. It is in a word as slow as the *Guelder Rose*, and by no means so floriferous. I presume it is so with others, as one seldom sees it in the florists' windows or in bouquets, and yet there seems little doubt that could this *Mock Orange*, as it is called, be easily forced in quantity, it would form an important addition to winter and early spring bouquets.—D. T. FISH.

**Begonia octopetala.**—This late blooming species is so seldom met with in a good state that I would wish to mention for the benefit of amateurs of the deciduous branch of this family a successful mode of culture which has resulted in the production of a good supply of its white blooms with a conspicuous tuft of golden stamens, several of which blooms measured 3 in. in diameter. Having found that it was not suited for growing in the open ground, this year I kept my plants in 7-in. and 8-in. pots, and after the growth was partly made in a cold frame, placed the pots in larger-sized pots, packing tightly between with moss, and then set them in an open spot on coal ashes. By this means the growth was fully developed, without the plants running the risk of drooping for want of water, which is so essential to these moisture-loving plants. The result has been more bloom than I ever before had from this autumn and winter flowering species.—J. T. POË, *Riverston.*

**The Moon flower.**—Amongst night flowering plants few are more attractive and certainly none more beautiful than the Moon flower (*Ipomœa Bona nox*). The plant, as may be readily supposed, from the fact of its belonging to the *Convolvulaceæ*, is of climbing or trailing habit, and is, moreover, a very rapid grower. It is a native of Jamaica, Trinidad, Cuba, and Mexico to Buenos Ayres, and is found also in the Pacific Islands, Tropical Asia, and Africa. It is described as covering sometimes many trees on the banks of rivers for many paces, winding itself around anything it comes near or creeping along the surface of the ground. The flowers are about 5 in. across, the tube of the corolla about 4 in. long; they are pure white, axillary, and are borne on peduncles about 1 in. long. The plant is not uncommon in tropical countries, covering the fronts of houses, and one has recently been described to us as growing in such a position in the Mauritius, where the house was nightly ornamented with hundreds of these blossoms. It is now flowering freely in one of the conservatories belonging to Mr. Christy, at Malvern House, Sydenham.—K.

**Hyacinth Homere.**—This is one of the most useful varieties that can be grown where flowers in winter are much wanted. It forces remarkably well, coming in before most of the pink-flowered kinds, yet may be had in perfect form early in January, or, even if so desired, by Christmas.—J. CORNHILL.



## SOCIETIES.

## ROYAL AQUARIUM CHRYSANTHEMUM SHOW.

ON Thursday and Friday last the borough of Hackney Chrysanthemum Society held its thirty-fifth annual exhibition here. The show was in every section larger than that of last year, especially in the open classes, which included nearly one hundred entries. A considerable improvement, too, was observable in the arrangement of the exhibits, particularly the groups arranged for general effect and the specimen plants in pots. These constituted one entire mass at the end of the building, and on the whole made an effective display, fine-foliaged plants occupying a raised centre, and the Chrysanthemums sloping to the sides.

The groups arranged for effect on a space of 100 square feet were four in number, but as regards the style of arrangement there was a dreary monotony discernible in all of them, as each formed a regular slope, the tall plants behind, the shorter in front, though these were a yard or more in height, and nothing was placed in front to hide the unsightly pots and naked stems. What a pity it is that framers of the schedule should not allow an admixture of Ferns, Palms, and other graceful foliage plants to add elegance to the group and tone down the colours a little. In the group to which the silver cup of the Aquarium Company was awarded there were some excellent blooms both of the large-flowered and Japanese varieties; in fact, perfect exhibition blooms grown on plants with stems terminated by a single bloom. The next best group included some fine blooms, and was but little inferior to the first. Among the specimen plants there were some remarkable examples of skilfully grown plants, particularly in the Borough class for ten plants in 12-in. pots. In this were grand plants of Prince of Wales, Christine, Monsieur Charles Hubert, Roseum pictum, Barbara, and George Glenn. These were all low-trained pyramid plants, and certainly do not have such a formal appearance as the umbrella-trained plants, though this mode of training was well exemplified by another exhibitor in the same class, the sorts being Mrs. G. Rundle, Mrs. Dixon, and Prince of Wales. The standard plants formed the best feature among the groups in the open classes, and there were certainly some exceptionally fine exceptions, particularly of George Glenn, Mrs. Rundle, Prince of Wales, which all seem to be favourite varieties for standards with the exhibitors.

The Pompones collectively were somewhat inferior to those exhibited on the last two or three occasions. The best were shown in the open classes, and one half-a-dozen were particularly good. Cedo Nulli, Prince Victor, Golden Cedo Nulli, Cendrillon, Mrs. Hunt, and Sœur Melanie, the latter one of the most useful pure white sorts in cultivation, and one that is as amenable to raising for exhibition purposes as it is for supplying cut blooms grown in the ordinary way.

**CUT FLOWERS.**—These formed the most important features in the exhibition, and they were far more numerous than on previous occasions, and the quality of the blooms, particularly in the Japanese varieties, was quite up to the average. Every year the Japanese varieties seem to become more and more popular, their shaggy aspect being in such striking contrast to the symmetrical appearance of the standard sorts. Strange to say that out of the many dozen collections of twenty-four blooms shown there was not one that was uniform in the high quality of the blooms. Two dozen is certainly a somewhat large number of varieties, seeing that there is not a very numerous supply of distinct sorts to choose from.

**JAPANESE SORTS.**—The finest shown were, among whites, Fair Maid of Guernsey, shown well in the collection; Meg Merriles, Elaine, Ethel, both good whites, but more globular than the others. Of pinks, Cry Kang, Baronne de Prailly, Magnum Bonum, The Daimio, Mad Audiquier, Bouquet Fait, Mons. Ardene, Grand Turk. Yellows were not nearly so numerous as pink, the best

being Golden Dragon, Thunberg, Peter the Great, Sultan, and grandiflorum, Peter the Great, Criterion. Of other colours there were fine blooms of Apollo, Day Gako, Mons. Lemoine, Red Dragon, Bronze Beauty, Red Gauntlet, and striatum, the latter a beautiful sort, white, spotted and streaked with purple.

**INCURVED SORTS.**—These formed, as usual, the greater bulk of the cut blooms, and among them there were some wonderfully fine blooms remarkable for large size, fine form, and in fact all the qualities that constitutes a perfect Chrysanthemum. But on the whole the blooms were much smaller, attributable doubtless to the season. Among the best blooms in the show were, of whites, Empress of India, Princess of Wales, Globe, Thurza, Mrs. Heale's Queen of England. Of yellows Jardin des Plantes, Guernsey Nugget, Mr. Bunn, Golden Bererley, Barbara, Golden Emperor, Mr. Dixon. Of reds and pinks, Hero of Stoke, Newington, Lady Talfourd, Venus, Prince Alfred, Pink Pearl, Princess of Wales, Lady Harding, St. Patrick, Princess Beatrice, Refulgens of other colours, Rev. J. Dix, John Salter, Nil Desperandum, Golden Eagle, Mr. Gladstone, Mrs. Shepman, General Slade, and Baron Beust. The foregoing kinds constitute a representative selection of all the finest kinds particularly for exhibition purposes, and are all distinct varieties. The Anemone flowered section was, on the whole, poorly shown.

**Fruit.**—There were some excellent Grapes shown, others very inferior for exhibition fruit. The finest examples were of Gros Colmar, Black Alicante. Among the black kinds, these were shown in perfection, and well showed the high qualities of these excellent Grapes. There were also some creditable bunches of Alexandrian Muscats. The collections of Apples, both dessert and culinary, were of exceptionally high quality and numerous, the culinary sorts being the best. In the three best collections were fine fruits of Blenheim Pippin, Lord Nelson, Waltham Abbey Seedling, Gloria Mundi, Stirling Castle, Alfriston, Reinette du Canada. Among leading collections of dessert kinds were King of Pippins, Besspool, Rymer, Cox's Orange Pippin, Court Pendu Plat, Cornish Aromatic, and Ribston and Blenheim Pippins.

There were eight collections of Pears shown, the best containing some fine fruits of Verulam, Spring Beurre, Duchesse d'Angoulême, Conseiller de la Cour, Beurre Diel, and an unknown sort. Among the others were excellent samples of Beurre Clairgeau, and the bright little Forelle or Trout Pear.

A fine collection of some 60 dishes of Apples was contributed by Mr. Skinner, of Maidstone, similar to that shown by him at South Kensington a week ago.

**VEGETABLES.**—There were a dozen collections of vegetables shown, some of which were excellent—indeed, as fine as we have seen this year. The best three collections contained some remarkable examples of Trophy, Acme, and Excelsior Tomato, excellent Mushrooms, Nutting's Beet, Turnip Snowball, Major Clarke's Celery, Improved Reading Onion (very fine from seed, sown March 16), Long Surrey Carrot, Osborn's Forcing Bean, Carrington and Musselburgh Leeks, Perfection Beet, Student Parsnip, Veitch's Self-protecting Cauliflower, Snowflake, Schoolmaster, and Myatt's Ashleaf Potatoes. Potatoes were particularly fine and somewhat numerous, there being ten dishes of twelve sorts and thirteen of six. Mr. R. Dean's first collection was very fine, the sorts being Bedford Prolific, Red Emperor, Advance, Early Rose, Pride of America, American Purple, Wiltshire Snowflake, Grampian, Vicar of Laleham, Bresee's Prolific, Matchless. The best among the collection of six included Fillbasket, Vicar of Laleham, Magnum Bonum, Beauty of Hebron, Schoolmaster, and Early Rose, all fine tubers. Messrs. Lee & Son, Hammersmith, exhibited an interesting collection of Potatoes, consisting of about seventy varieties, including their new Defiance.

A miscellaneous display of cut flowers and

plants from the Messrs. Cannell, Swanley Nurseries, contributed in no small degree to the attraction of the show, the brilliant colours of the Pelargoniums and Salvias, together with the collection of Chinese Primulas, creating a very showy display. Messrs. Sutton had a large collection of Potatoes and Kales.

A list of awards is given in our advertising columns.

**Richmond show.**—Among the kinds of Chrysanthemums but little known there were at the Richmond show fine examples of the Japanese Arlequin, a large bright golden flower slightly striped with crimson; Bouquet Fait, a light rose colour, the florets being long and partially quilled, but though not shown there as such it has few equals in the Japanese section as a pot plant, being of medium height and remarkably free flowering; Hiver Fleurie, a creamy rose-coloured flower, in which the ordinary petals are intermixed with shorter ones, which stand upright and give the flower a curious appearance—in two or three stands the flowers of this were very fine, but as far as my experience goes, it is one of the most liable of any to lose its foliage; M. Ardene, an immense rose-coloured flower, one of the largest of the whole Japanese section; La Nuit, a remarkably quaint and curious variety, in which the petals are of great length and quilled till within  $\frac{1}{2}$  in. of the point, when they open out, giving the flower a very distinct appearance—the colour is a dull brownish-crimson; Père Delaux, a deep crimson velvety flower, as shown here very attractive, and though rather regular in outline for a Japanese, is of such a good habit as to be one of the best for growing in pots. The above were all of the Japanese type. Among incurved—Inner Temple, an improved form of Refulgens, of a deep crimson colour, was well shown; Mr. C. Salter, Streatham, exhibited a stand of his new Chrysanthemum, Lady Selborne, a pure white sport from James Salter, and, like that variety flowers both profusely and also early in the season.—H. P.

**Mildness of the season.**—To-day (Nov. 14) I notice a few blooms bursting out on a young pyramidal Pear—Passe Colmar. This morning the thermometer registered 50°; higher than that we hardly had it all through September. All vegetation looks fresh, perhaps too much so, as in the autumn of 1879 sharp frost came without warning, and ruthlessly killed all our Broccoli, Kale, and Brussels Sprouts, &c., and for three years have we been so treated.—S. K. T., Antrim.

**Ginger.**—Could any reader of THE GARDEN advise me as to the best method of growing Ginger for preserve?—NORMANTON.

**Drying Everlastings.**—Is there any better way of drying the stalks of Everlasting flowers than hanging them up, head downwards, and for Pampas Grass to keep it open as it always closes up tightly instead of keeping open?—H.

**Names of plants.**—*Boycott.*—*Amaryllis Belladonna.*—*Beta.* *Taxis adpressa*; 1, apparently *Aster longifolius*; 2, *A. ericoides*.—*W. M.*—1, *Cypripedium longifolium*; 2, *C. insignis*; 3, *Cattleya Harrisoniae*; 4, *Calanthe vestita rubro-oculata*.—*B. D.*—*Boberis vulgaris*.

**Names of fruits.**—*L. M.*—Apparently the Chaumontel, but to make sure better developed specimens should be sent.—*Ann.*—1, Pitmaston Duchess; 2, Forelle or Trout Pear; 3, probably a large Beurre Diel, but too much decayed to be able to say with certainty.—*B. S.*—Black Pear of Worcester.

## COMMUNICATIONS RECEIVED.

J. D.—F. E. & Son, J. R. J., P. H. W. P., J. C. C., H. T. E., W. T. P., N. F. W., B. T. C., A. R. B., Gardener, I. T. G. B., J. G. P., G. H. A. E., I. S., W. T., W. B., C. M. O., B. T. H., A. H., W. E. L., J. H., 2, C. W., G. I., B. G. C., C. Mrs. C., J. S. T., W. T. B. T., G. D., R. J. L., J. C. F., W. B., F. W. B., W. J. M., J. M., J. C., D. T. F., R. L., S. K. T., R. D., G. I., A. M., J. I., W. J. M., W. J., R. G., W. M., B. D., E. J. K., G. O., G. S., A. M., A. C. B., R. G., J. S., P., N. F., J. H., R. I., R. D., T. S., W. L., T. S., W. E.



"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—Shakespeare.

## WILD GARDENS IN NATURE.

HAVING spent some short time lately in the Colorado Mountains, perhaps a few lines on some charming sights may find admittance to your columns. One of the first things to be noticed is the magnificence of the various kinds of *Helianthus*. I cannot give all the names, but *H. orgyalis*, *Maximilianus*, and *rigidus* were very conspicuous. The beauty of the *Helianthidæ* was set off by the numerous lovely *Asters* of various shades of rose and mauve, and by a carpet of a pale primrose flower the name of which I do not know. Numerous flowers of other colours sprang up out of the primrose carpet, and the effect was very fine. Higher up in the mountains a corner in the woods was lovely with two kinds of *Campanula*, one tall and with numerous bells of a pale violet on each stalk, while close to the ground grew a dwarf *Harebell*, with bells of deep rich purple. The two purples were divided by a cloud of golden *Daisies* growing about 14 in. high, and among which were many of all shades, from pale primrose up to deep orange. Another clear space in the woods was a mass of *Gentiana gelida*, and a very dwarf growing plant producing a crimson trumpet-shaped flower, while here and there sprang up masses of *Senecio pulcher*, growing with unusual strength and beauty. One simple and lovely bit was carpeted with a very dwarf plant covered with tiny white star-shaped flowers, with great masses of *Aquilegia cœrulea* shooting up in all directions, while here and there plants of a pale yellow *Daisy* added to the delicacy of the effect. A white *Aquilegia* appeared in clumps occasionally, and one very fine golden-yellow *Lily*, whose name I do not know. An *Iris*, also unknown to me, grew strongly here. Of most of the above mentioned I was fortunate enough to get seed. Passing home through New York, I paid visits to Mr. Woolson's nursery gardens at Passaic, where among other things (of which I may send you notes on another occasion) I was struck with a house covered with an unusually fine and densely-growing *Clematis graveolens*. It was then in seed (some of which Mr. W. kindly gave me, and of which I shall be happy, so far as it goes, to send to any one wishing to have some), and when in blossom it must have been a splendid sight. If I go on much longer I shall be taking up too much space, but may perhaps venture to run the risk of your waste paper basket on a future occasion.

H. STUART WORTLEY (Colonel).

Rosslyn House, Grove End Road, N.W.

## REPLANTING LARGE BLOWN-DOWN TREES.

AMONGST trees blown down by the hurricane on the 14th ult. were two large *Limes*, forming part of the fine avenue of those trees that exists in Highfield Park, an outlying portion of the Strathfieldsaye Estate. The break thus made in the hitherto perfect line was such an eyesore, that the idea of reinstating the fallen veterans in their original positions occurred to Mr. Bell, the Duke of Wellington's gardener, who at once took steps to uplift them, an operation in which he had the assistance of Mr. Davidson, the gardener at Highfield, and all his staff, these being supplemented by a number of hands from the gardens at Strathfieldsaye—some to hold ropes as stays,

others for blocking, working crab, screw-jacks, &c., work of which, it may readily be surmised, there was plenty, when it is stated that the trees in question are 130 years old, 90 ft. high, from 10 ft. to 12 ft. in girth, and that they had been blown over with at least  $2\frac{1}{2}$  tons of earth attached to their roots; indeed, it was this last condition that settled the determination to proceed with the lifting. The trees were first pollarded at a height of 30 ft. from the ground, and even after this had been done there could not have been a less weight than 2 tons of timber to be uplifted, but which was, nevertheless, done in a remarkably short time, and, comparatively speaking, in a very easy manner, by means of the following appliances, viz.: a common  $2\frac{1}{2}$ -ft. screw-jack and a crab capable of raising 5 tons, which had a  $\frac{1}{2}$ -in. rope attached, and common cart ropes for stays and guides. These being all placed in position, it was found that no pulleys and shears would be needed. And so, the holes being duly prepared by breaking up the "pan" on which the trees had grown, and which, by reason of the roots not being able to penetrate it, was the cause of their downfall, a start to raise them was made by two men at the screw-jack, and as each few inches was gained, props of varying length, each one held by a separate man, were placed as directed by the superintendent, and in this way was secured the height obtained by every move of the screw-jack. As soon as the end of the trunks had in this way been raised to a height of from 15 ft. to 18 ft., the crab was brought into play, and soon the trees were again in their upright positions, and, having been well attended to as regards good soil, well consolidated about the roots, there can be no reason to doubt but that they will not only live, but grow away as vigorously as ever they did. Should they do so, many besides myself will seriously consider whether or not it is worth while to be at all times in such a hurry to cut up noble trees that have had the misfortune to succumb to a storm.

Heckfield.

W. WILDSMITH.

## HARDINESS OF HIMALAYAN RHODODENDRONS.

I HAVE received several communications relating to the article on *Rhododendron Aucklandi*, published in THE GARDEN some weeks ago. Among others the Rev. H. Ewbank kindly invited me to inspect the *Rhododendrons* growing in the garden of Sir W. Hutt, near Ryde, Isle of Wight. A few lines on what I saw there may be interesting to your readers. On the Grass in front of the conservatory, and somewhat screened by it, stood, separately, three plants, each of a different *Rhododendron* species. *R. Falconeri* was 5 ft. or 6 ft. high, and I think had not flowered. There was nothing strange in finding this species perfectly hardy and healthy in the open ground, for during last summer I had seen, even in the Highlands, a much larger and finer specimen, and in various places it thrives and blossoms annually. The second plant was a bush of *R. Thomsoni* which had never bloomed, although of large size. Here again there was no marvel, for this often shy bloomer is quite hardy and often opens its wax-like crimson bells unharmed by spring frosts. The third plant was one of *R. Nuttalli*, cut to the ground last winter, but shooting strongly again. This did indeed astonish me, for I look upon the species, as a rule, as wholly tender, and once I lost hopelessly ten fine plants by turning them out of doors in sheltered positions.

In a windy spot among trees, a 6-ft. or 7-ft. specimen of *R. Aucklandi* was battling with the breeze. This had bloomed grandly where it stood in May last. From description it would appear to be one of the best types of the species, match-

ing perhaps Mr. Boscawen's plant in hardiness and loveliness. My friends in Scotland cannot credit the comparative hardiness of *R. Aucklandi* in spite of all I have seen and written, but I was not at all astonished to find it thriving well in the Isle of Wight. Lower down the slope, which faced north and overlooked the sea, two beds of Himalayan *Rhododendrons* had been planted. The spots were partially sheltered by Pines and shrubs. In the centre of one bed stood a fine standard of some type of *R. arboreum*, said to be brilliantly scarlet, and certainly presenting the foliar features of the best and tenderest form. Round it were bushes of *R. calophyllum*, *Maddenii*, *Edgeworthii*, *formosum*, *ciliatum*, and such hybrids as *Sesterianum*, *Princess Alice*, *Macnabianum*, &c. I was told that these plants had occupied the bed for some years without any protection.

The condition of some of them, considering the character of last winter, was truly wonderful to me. *R. arboreum* was covered with bloom buds, and the foliage fine and healthy. *R. calophyllum* was also covered with bloom buds, and upon it and upon *R. Maddenii* were half ripened capsules from the bloom of last summer. These two last are not to be considered as one species, but in point of hardiness at least there is a great difference. With me the former survives, though with injury, most winters, and Mr. Chas. Smith, jun., sent me last summer from Guernsey fine blossoms from the open ground, but *R. Maddenii*, with me at least, invariably and speedily succumbs. In Sir W. Hutt's garden, however, both had braved the fearful weather of last season—I will not say with equal impunity, for *R. Maddenii* had clearly lost some of its shoots, but both had bloomed, and had perfumed the garden, I was told, with the scent of their large white blossoms. The second bed suggests no further remark than that it contained, among others, a plant of *R. triflorum*, which is an interesting and rare, but hardy species. Next spring I hope to see all the plants again and to confirm my present report.

I must not close without noticing the striking paper of "H. H." which appeared in THE GARDEN of October 16 last. It would give me much pleasure some day to visit his very excellent collection of *Rhododendrons*, if agreeable to him. Some of his experiences a little puzzle me; for instance, the severe injury sustained by *R. Thomsoni*. Two large plants of that species (now in my possession), one of which is 8 ft. high, suffered not at all last winter in Edinburgh, and smaller plants with me were wholly uninjured. Is it perhaps *R. Hookeri*, which sometimes changes names with the other, and is far more tender?

J. H. MANGLES.

Valewood, Haslemere.

## NOTES FROM BROMSGROVE.

EVERYTHING here is now ready for what Bishop Pearson so beautifully calls the "Annual Resurrection." Thousands of *Snowdrops*, some facing the sunny south, some the gloomy north, thousands of *Crocuses*, are in their places, and are even now pushing like infants. John Kidd says in "Lorna Doone," through the soil. We have also hundreds of winter *Aconites*, *Scilla bifolia* and *sibirica*, *Narcissi* of many kinds, including *Horsfieldii*, *Anemone apennina*, *fulgens*, and the sweet guileless-looking *nemorosa fl.-pl.*, and more than 100 *Iris reticulata*, some already 1 in. high, so that, aided by *Tulips* and *Hyacinths*, there should be a brave show of flowers to greet the spring. Not an empty border is to be seen. *Violas*, *Daisies*, *Arabises*, *Alyssums*, *Ajugas*, *Aubrietias*, *Alpine Wallflowers*, and *Forget-me-nots* carpet all the lawn beds, which are never without tenants for more than two days



in the year. We get the summer bedding plants up early, dig, manure, and renew with fresh soil the beds, quickly but carefully plant the spring occupants, and surface the soil with a neat covering of Cocoa fibre; consequently we have always floral beauty or its promise.

Among novelties I have procured *Rosa rugosa* in three varieties, *Rubus deliciosus*, and a few bulbs of *Chionodoxa Lucilæ*. We have also made a new bed which promises to be always interesting, and sometimes beautiful. It is a round bed 9 ft. in diameter, planted at proper intervals with named sorts of hardy Azaleas and *Kalmia latifolia*. Its margin is edged with *Pernettya angustifolia*, which is always cheery and really beautiful when studded with its bright coral berries. Between the shrubs are inserted good clumps of *Lilium longiflorum* towards the margin, and *Lilium auratum* towards the centre. If suitable soil will make Lilies grow, I think we have spared no pains in manufacturing that. After all, there is no pleasure in gardening like the pleasures of preparation, and this lovely November has enabled us to enjoy these to the full this year.

It is worth while to observe that all these floral jewels lie scattered about profusely in the presence of what are popularly supposed to be the most destructive animals in creation—English schoolboys, and that the flowers and the boys get on admirably together. If by any accident an intruding football has smashed a favourite I have always swallowed carefully my vexation. My object has been to make the garden as dear to the boys as it is to me, and the growing popularity of horticulture is proved by the increasing demands for spare flower roots, and the many bright beds which fringe the playground in spring and summer. Gardening attracts the interest of precisely those boys who, being physically too weak for the robustest games, are always a source of anxiety to a schoolmaster, whose business it is to keep all his boys always interested and occupied. Indeed, gardening is a great moral engine, and as such it deserves to be vigorously plied. H. M.

## THE FLOWER GARDEN.

### TUBEROUS-ROOTED BEGONIAS.

ACCORDING to the remarks made in THE GARDEN, it seems to me that for bedding purposes cultivators generally coddle their Begonias too much. Nothing is easier than getting up a stock of them, and few plants are more easily managed. We had over 500 of them bedded out last season, and not one of them was potted. Opinions differ with respect to the merits of these Begonias as bedding plants, and I find that those who put out small plants are the first to find fault with them. They are generally put out too far apart, and for this reason do not make a satisfactory display. Moreover, there are two distinct types even in the best strains. The tall varieties which produce the largest flowers are not suitable for bedding which requires plants of short, sturdy growth, more branching and compact. Those who have seen this section bedded out at the Stanstead Nursery, Forest Hill, will have no difficulty in deciding on the merits of the two sections. There is probably a long future before this plant as a bedder, because, like Potatoes, the bulbs can be stored away in any place where they are safe from frost, and by means of the shelter of a few cold frames and a little careful management any number of plants can be raised and planted out every year. In winter they want no fire heat, no light, and no water.

**Seed sowing.**—I secure the first seeds that are ripe on plants in the borders, which is generally about the middle of August. The seeds

are then sown in deep pans well drained, and the soil used is made rich and fine, and well watered before the seeds are sown. The seeds are then covered lightly with some fine silver sand, and over the pan we place a square of glass, and on the glass some Moss or a piece of shading material to keep the seeds in darkness; the pans are then placed in a close, warm house. In a week's time the shading material is removed, and as soon as the young plants show themselves the glass is taken off. Water is now given very carefully through a fine-rosed watering-pot, but this extra care is not necessary after the first few weeks, for the plants grow fast and will soon cover the surface of the soil with leaves. They are allowed to remain in a warm temperature until December, when they go to rest of their own accord, and the pans are set on the floor of a cool greenhouse where they remain until April. They are then lifted on to the stage, and if the seeds have come up well the pan will be well stocked with bulbs—some the size of large Peas, others smaller. In June when there are generally some vacant frames, three or four lights are prepared, and the young plants are put out in a bed of soil 6 in. apart each way. For the first two months they have the shelter of the lights, and are watered when they want it. After that the lights are removed, and when the growth dies down in the autumn, bulbs from 1 in. to 2 in. in diameter will be found. The winter storage is a simple matter: when the bulbs are lifted from the soil we lay them on the floor of a cool house where fire heat is only used to keep out frost. I have also wintered them in a heap in a shed secure from frost. They will bear a moderate amount of drought or moisture when resting, but extremes in either case is fatal to sound keeping.

**Bedding out.**—In preparing plants for this purpose I place a two-light frame on a firm bottom, and put in it about 8 in. of fairly good soil. Early in April, or as soon after as the bulbs show signs of starting into growth, they are brought from the store and planted out in the soil in this frame, the largest 8 in. and the smallest 6 in. apart. While in the frame they will want some attention in the way of air giving and watering. By the end of May they should be well hardened off, when they may be safely bedded out in all but the coldest districts. We simply lift them with a trowel, put them on a hand-barrow, and convey them to the beds. I have, however, been fairly successful with plants raised from seed and planted out the first season for flowering in beds, but such plants bear no comparison to those that have had one season's growth in frames. After the bulbs have done duty two seasons in the flower garden they are thrown away, as bulbs more than three years old invariably start weakly, and many not at all. Those who do not sow the seed in August may do so in February, but this will necessitate the seedlings being grown in a warm temperature for four or five months, and then they ought not to be used for bedding the same season, but should be planted out in a frame to complete their growth for the year, and stored in the winter in the way I have recommended.

**In frames.**—Those who have not the convenience of a house may, I believe, do fairly well with a frame. In this case the seed should not be sown until the beginning of May, and most likely a little more care and patience in watering will be required, but as the temperature increases the young plants will grow fast, and by the end of July they will be large enough to prick off into a bed of soil in the frame, where, if they are carefully attended to all the summer, and have the shelter of the lights both night and day, with a moderate amount of air during the daytime and shut up at night, they will grow vigorously till the end of October and produce some good bulbs for the next season, but of course they must not be expected to be so large as those raised from seed six months earlier. Those who wish to succeed with Begonias as bedding plants must keep a young stock of bulbs on hand to replace those worn out. J. C. CLARKE.

### HARDINESS OF LOBELIA FULGENS.

THE hardness of this plant has been questioned, but I think without reason, for I have known it not only to live, but thrive in a climate much more severe than our own. Passing once through Baron Rothschild's garden near Paris, I was attracted by the unusually flourishing appearance of a large plantation of this *Lobelia*. Having had considerable experience of this perennial, and knowing the difficulty that many find in preserving it in anything like good condition through the winter, I at once inquired if the plants before me remained all the year in the open ground. "They have been there for years," was the reply, "and we never lose a plant;" and I could well believe the assertion, for some of the plants were large stools capable of throwing up nearly a dozen good flower-spikes. I am told that in a natural state this *Lobelia* likes swampy situations, and yet actual experience has convinced me that excess of humidity rather than severe cold is the one thing to be dreaded in this country as well as on the Continent. If from the time that the plants go to rest the roots could be guarded against stagnant moisture, our difficulty in its culture would cease; and instead, as is often the case, of finding but few plants alive in spring, we should have the pleasure of seeing this handsome perennial increase in vigour from year to year. My reasons for entertaining this belief are as follows:—

**Cankered roots.**—Wherever this *Lobelia* is found not to do well, if the roots are examined towards the latter end of November they will in nine cases out of ten be found to be attacked by a disease, which, if unchecked, ultimately eats them away, so that generally before the very hard frosts arrive the underground portion of the plant is ruined beyond redemption. There is, according to my experience, but one sure method of combating this canker, rust, or whatever it may be. The plants must one and all be taken up about the end of October and the old soil shaken away; the roots, which are, as is well known, fleshy, must be washed clean. Then the slightest appearance of decay will be easily discerned, and the affected part may be eaten out away with a sharp knife. Put each offshoot or crown into a pot just large enough to contain the roots, using a light, free, sandy soil, and store them away in a frame where protection against heavy or continued rains can be afforded them. In the course of a fortnight freshly made fibres will be touching the sides of the pots, and all through the winter if the plants are plunged in ashes or some such light material, so that the soil does not get hard frozen, new roots will be made. The difference between plants thus cared for and those which have to pass the winter under unfavourable circumstances in the open is very great; on the one hand, we have a mass of healthy roots, foliage fresh and vigorous, and on the other a debilitated constitution, the vitality of the plant being impaired to such an extent as to render it of but little value as a decorative subject for the open air.

**French mode of culture.**—I never knew what *Lobelia fulgens* really was until I saw it in a garden in the north-west of France. Large beds of it, the plants with broad leathery foliage, the flower-stems 4 ft. high at least, and as thick as the top of a fishing-rod, were masses of dazzling brilliancy in the beginning of August. The owner, an amateur, was noted for his *Lobelias*, and was commonly supposed to possess the secret of some special compost, but the secret laid in treating the plants in autumn in the above-mentioned manner, with this rather important difference, that they were plunged when potted and during November in a mild hotbed, leaving the lights off day and night in fine dry weather. They were wintered in a cold frame, and were shifted early in March into 4½-in. pots, or even a size larger; were thoroughly hardened, though protected well through the early spring months against vicissitudes of climate, and were planted out in rich, free ground in May, by which time they had formed large rosettes of sturdy, healthy foliage. The after-attention consisted in heavily mulching and watering copiously in dry weather. Let those who



want to find a worthy rival to the Zonal Pelargonium take *Lobelia fulgens* in hand, for, depend upon it, there is no Pelargonium grown that can surpass it in brilliancy. JOHN CORNHILL.

### ALPINE PLANTS IN WINTER.

THERE are many of the smaller alpine plants which bloom at a season when we have but little enjoyment of them out-of-doors in our damp climate, and which are so beautiful that they would amply repay the cost and trouble of a special provision for them in the winter months. They are usually grown in cold frames, not alone to protect them from frosts, because they can withstand intense cold, as it comes to them in their native habitats, where the snow covers them up warmly and the clear dry air does them no harm. It is our damp, foggy atmosphere which proves fatal, and therefore we cover them during winter with glass in some way or other. A number of these, including such lovely flowers as the *Androsace Lageri*, *carmea*, *coronopifolia*, &c., *Saxifraga Burseriana*, some of the *Polygalas*, *Drabas*, *Gentiana verna*, *Hellebores*, *Hepaticas*, and many of the *Primulaceae* bloom in our winter or very early spring, and if we leave them either in the frames or open garden we cannot really enjoy their beauty or give the flowers their full chance of development. To meet this some plan should be thought out, so that the plants shall not be forced, but protected from damp merely, and where at the same time they can be readily seen and enjoyed. Our friend Thomas Williams, of Ormskirk, suggested a simple form of alpine house, and this was a good idea worth carrying out, but I have my doubts as to whether alpine plants would live if planted permanently in such a structure. The plan we have adopted here is to utilise two coolferneries, which do duty during their season for British Ferns, but which in winter are idle, the Ferns being mostly dormant. Into these ferneries we introduced large flat slabs of sandstone to form picturesque benches, and upon these the alpine plants are placed in their pots as they come into flower. This plan answered admirably during last winter, as the notes sent to this journal from time to time would show to your readers. The evergreen Ferns were placed so as to form a background for the alpine, and all the ventilators were kept open in fine weather, so as to give as much air as possible. With some of them, such as the *Cardamines* and *Anemones*, we were not very successful, but the *Androsaces* especially flourished and were greatly enjoyed. In the same houses we bloomed large numbers of *Narcissi* and *Daffodils* in pots, and other bulbs, *Scillas*, *Roman Hyacinths*, *Trilliums*, and *Cypripediums*, so that there was always a most interesting display of bloom even in the depth of winter. For the present season we have grown alpine plants in pots in cold frames especially for these houses, and on looking over them within this day or two I find *Saxifraga Burseriana* thickly covered with flower-buds, so that we shall have it in flower at Christmas. *Polygala Chamæbuxus purpurea* is already in bloom, and some of the *Scilla sibirica* and the *Hepaticas* already show colour in their buds, owing to the mildness of the season. Of the *Primulaceae* there are several already opening, and there will thus be quite an interesting display of flowers through the winter. We have also a dozen large pots of Christmas Roses now blooming in these houses, which suit them admirably, flowers being of very large size and of exquisite purity. It will thus be seen that by a very simple arrangement alpine flowers can be bloomed throughout the winter, and a most useful house for various purposes obtained at the same time. BROCKHURST.

### THE PAMPAS GRASS.

Now that indoor decoration is so much followed, those who grow the Pampas Grass should not allow the silvery plumes to be spoiled by autumn winds and rains, but should cut them before the weather disfigures them, and use them for the decoration of halls, &c. In this way they can be turned to excellent account, and the produce of the summer does good service when the land lies locked in winter's fetters. Our practice is to cut the stalks as soon as fully developed, tie the stems together in small bunches, and allow them to hang in a dry cool place till quite rigid, and then they are ready for any position in which they can be effective. From Germany we are now obtaining, during the winter, splendid plumes of the Pampas Grass that are of large size, close texture, and which are bleached by a process peculiar to that country. These are in large demand for indoor decoration, for they are very handsome, and last a long time.

The Pampas Grass, handsome as it is, is not planted so much as it was soon after its first introduction to this country. Probably the fact that the plant has a somewhat shabby appearance till quite late in the spring, until the new growth appears and the old growth of the previous year can be cut away, has to some extent checked the ardour of those to whom order in a garden is the chief consideration. At one time it was the custom to isolate the plants on lawns and similar places; now it is found best to surround them with some low-growing plant. In such association strong plants are very effective. The Pampas Grass is particularly fitted for planting by the margins of ponds, lakes, &c., where its graceful plumes can be reflected in the water; but here the plant itself should not be fully exposed to view, but only the upper portion of the foliage, the stems, and plumes. To grow the Pampas Grass well a deep moist loam is required, and at the time of planting this should be freely enriched with rotten manure and leaf-mould. In the case of established plants that have somewhat exhausted the soil some good mulching should be applied in spring, and from the end of May till the end of September supplies of weak liquid manure should be administered occasionally.

Those who plant the Pampas Grass on mounds, and also form a little hillock of the soil about it when planted, commit a mistake, as the soil about the plant should on no account be elevated above the surrounding surface, the object being to retain as much as possible of the heavy summer rains.

At Gunnersbury Park, in the new ornamental ground near the margin of the lake, are groups of the Pampas Grass margined with *Arundo conspicua*. This combination is a good one; the *Arundo* first throws up its inflorescence, and afterwards the Pampas Grass. There is thus a succession of plumes during a good portion of the summer and autumn. R. D.

### WALLFLOWERS IN BLOSSOM.

JUST now we are cutting every day a good supply of Wallflowers from plants some eighteen months old. We sow yearly on a warm border in May, and the young plants as soon as large enough to handle are either planted finally where they are to bloom or put in nursery beds—mostly the former. In the course of the season they will make nice bushy plants, and bloom early the following spring. But it is from those that bloomed last spring that we are now cutting. Should the winter be again severe, we will in all probability lose most of the plants now in flower, but if that happens we have the young plants to fall back upon; they generally stand the rigour of our winters with impunity. Wallflower bloom stands longer at this season in a cut state than in spring. At that season I often pull a plant up by the roots, washing the latter in water, and then put it into whatever receptacle it is intended for. Under such conditions the flowers will continue to open for days. To keep up a succession of Wallflowers, seed must be sown yearly. The sorts we grow are the double Blood-red, Belvoir Castle, and Harbinger; we generally plant a bed of this last on a warm, sheltered border, where it comes in for

use early in spring. I may mention that I got a slip of a yellow-flowered double variety called *Victoria* last autumn. It has now grown into a fine plant, and for appearance and general contour it more resembles the single sorts than the double kinds, being very bushy in habit and narrow in the leaf. It is now coming into bloom, and on each shoot there are some two dozen flowers forming a good spike. I intend to put in all the cuttings I can get off it, for I find that it will make a useful border plant. As I have not seen this variety spoken of, can it be a local sort? It was under somewhat local circumstances I came by it, viz., from a lady who is a great enthusiast as regards flowers, and who possesses not a few really good old-fashioned border plants. S. K. T.

Antrim.

**Herniaria glabra.**—"J. C. T." (p. 480) may rest assured that this plant is perfectly hardy in any situation, and it requires no lifting or potting to preserve it. It is also readily increased, as it roots at almost every joint along its under surface. Planted out, it soon forms a dense carpet of green, and is well adapted for the groundwork of a carpet bed. It is in fact largely used in the London parks and other places for that purpose. Has any reader of THE GARDEN ever tried *Arenaria multicaulis* for carpet work? It covers a mound beautifully, and when smothered in spring with its snow-white blossoms has a fine appearance.—E. JENKINS.

**Violet Marie Louise.**—Mr. Warden, I think, will find that there is nothing peculiar in the true Marie Louise Violet blooming early. From a north border here, on which it is planted, flowers were produced in abundance, even by the middle of August, and they have been gathered ever since in large quantities. The Marie Louise is quite an acquisition, being such a grand winter bloomer. When planted in frames a constant supply can be secured with but little trouble throughout the winter. There has hitherto been some difficulty in procuring this Violet true; I have had the Neapolitan, which it greatly resembles, sometimes sent for it.—S. WESTLAND, *Witley Court*.

**Seed vessels of Tropæolum speciosum.**—Like "Norman" (p. 482), I have been struck with the beauty of the seed vessels of this plant, which in most seasons it bears freely, but last year they did not ripen with us; neither did the plants do so well as in former seasons. This I think was owing to the excessive heat we had for a fortnight or so, which caused the foliage to become infested with red spider, an insect to which it is particularly subject, and that is the reason why this *Tropæolum* will only succeed on a cool north aspect. As regards propagation, I find it makes many fresh tubers, which may be dug up at any time during the early spring and be replanted elsewhere, but the removal should be effected before the young shoots begin to grow, as they are liable to injury on account of being so tender.—S. D.

**Gold-laced Polyanthuses.**—Mr. Brockbank, I see, retreats from the position which he had taken up (p. 399), but not without firing a shot at Sunrise. The three Polyanthus growers mentioned by him could only have had the same opportunity of seeing Sunrise as he had, and could not possibly have seen it in "the freshly-opened state," or "when the flowers are old," but, strengthened by their opinion, he "feels certain" that Sunrise is behind George IV. and Prince Regent. The character which I gave Sunrise in THE GARDEN of November 5 (p. 474) was based upon an intimate knowledge of George IV., Prince Regent, and every good Polyanthus that has been exhibited during the last thirty years, most of which I have grown. I grew George IV. over thirty years ago, George IV. and Prince Regent bloomed with me side by side with Sunrise in the same frame this year, and the superiority of the latter was evident to all who saw them. What I wrote of it is only a repetition of what every Polyanthus grower who saw them said. I know that Sunrise is much better than



George IV. and Prince Regent: it is the best of its class since we have lost Kingfisher. Any seedling Polyanthus which are at all behind George IV. and Prince Regent ought never to have a first-class certificate. I am glad to know that Mr. Brockbank "intended to give Sunrise a very high character, and thought he had done so," but I cannot congratulate him on having carried out his intentions successfully. —SAM. BARLOW, *Stakehill House, Castleton, near Manchester.*

**Helianthus multiflorus major.**—I fully agree with all that has been said in favour of this (p. 481); unquestionably it is one of the finest and most showy herbaceous plants we have, and from its size and stature specially adapted for the backs of borders immediately in front of evergreens. This, like the other perennial Helianthi, increases very readily by division, which may be effected at any time during the winter or spring, and it also seeds freely, but as it spreads quickly there is no occasion to resort to this slower process of propagating the plant. —S. D.

**St. John's-wort for dry ground.**—I find *Hypericum calycinum* an invaluable plant for thriving where Grass will not grow; consequently most useful for covering ugly bare ground. In my own garden in the shade under full-grown Cedars of Lebanon I have found *Hypericum calycinum* to thrive, and if trimmed in June it makes a beautiful green carpet, studded with star-like golden blossoms. —L. J., *Lago di Como.*

**Hardy plant lists.**—In reply to "A. C. B." (p. 500), I think he will find that 2000 will be the outside number of hardy plants he will ever be likely to acquire, and that if he arranges his bulky volume for this number he will have sufficient space. I find on going through my list that the following are about the number of pages occupied for each letter of the alphabet. He might, therefore, get his book alphabetically indexed in these proportions as a commencement, viz: Q, V, W, X, Y, Z, 1 page each. B, F, K, O, 2 pages each. E, I, G, H, M, R, T, U, 3 pages each. D, 4 pages. L, N, 6 pages each. A, C, P, 12 pages each. S, 18 pages. It will be seen at once that some of the letters require a good deal of space, especially S, which covers the Saxifrages, Sedums, and Sempervivums, which are numbered by the hundred. —BROCKHURST, *Didsbury.*

**Aperula cynanchica.**—This plant emits a most disagreeable and strong fox-like scent; on some mornings, and in certain states of the atmosphere, it is sufficient to make a rock garden uninhabitable. As it is a plant not unfrequently used about rockwork and borders, we advise that it be raised on a fork and thrust over the nearest hedge, or into a heap of burning rubbish. It has no great beauty of colour or habit, and we have so many plants, that we need not grow those that are from any cause objectionable. Foul or sickly-smelling plants should not be grown.

**Christmas Roses.**—To preserve the blooms from frost and to keep them purely white, it is well to cover the plants at this season with cloches or glass shades. My gardeners have hit upon an excellent way of fixing these, so as to keep them well off the ground, in order to admit plenty of fresh air to the plants. Three stout sticks, each about 2 ft. long, and driven in triangular form into the ground around the plant; in each stick a stout nail is inserted about 6 in. from the top, and projecting an inch or so. The cloche is rested upon these nails, and kept firmly in position by the sticks, so that the wind cannot upset it. —BROCKHURST.

**Soils for alpine plants.**—I see my friend Mr. Gusmus is writing in THE GARDEN on this subject (p. 502). He uses the word chalk when he means lime, because "kalk" means lime in German, and he thinks it is rendered by chalk in English, owing to the similarity of the word. In writing to me he always says chalk for lime. —E. HARVEY.

**Aster grandiflorus in the south midlands.**—This Aster is, as it deserves to be, highly spoken of by several of your correspondents. In this

part of the country it thrives and flowers most profusely when planted at the foot of a wall facing the south, where it gets a good roasting during the summer. Near where I am writing is a large established plant of it so situated which now (November 22) is quite a mass of blossom. In the open border it does not do so well. —J. M.

**Funkia subcordata grandiflora.** How should this be treated during the winter. I have no greenhouse, and can only protect it from frost either in the house or plunged in ashes in a cold frame. The leaves are now dying down. Must I keep it dry or water it? Y. N. E.

**Tritoma nobilis.**—M. Godefroy-Lebeuf, of Argenteuil, writes to us in praise of this plant, which is now in flower with him.

## EDITOR'S TABLE.

**FINE FORMS OF THE BLUE VANDA.**—From Mr. E. Fowler, Ashgrove, Pontypool, come a most interesting series of blooms of this Orchid, that show strikingly the wide variation there is between what is termed a poor and the finest variety. The poorest are beautiful, the soft porcelain blue being extremely delicate. The finest form has unusually large flowers, with broad sepals of a pale blue, flushed here and there with blotches of deeper colour, and the whole surface of the flower chequered with white flakes. At certain points of view in a room the flowers remind one of a blue sky flecked with delicate little snowy clouds. We hope to figure this fine variety.

**GOOD NEAPOLITAN VIOLETS** come from Hazelbourne, near Dorking, nestled, no doubt, under the hills. Mr. H. Cooke, writing from the gardens there, says: "Enclosed are two bunches of Violets, one Marie Louise, the other a new variety that my master bought in France two years ago. You will see it is a trifle darker than the old Neapolitan, and I think of the two it is even a more prolific bloomer than Marie Louise, and such a dwarf grower with beautiful dark glossy green foliage! I grow thirteen lights of the two together, and have been picking abundance of fine blooms from both since the third week in August. They are both still covered with fine healthy buds and bloom. I was thinking of sending a pot each of Marie Louise, Neapolitan, and the new sort to Kensington, but should be thankful for your opinion about it." Excellent, but sweet as it is and good, it must have a name if others are to enjoy it. Only let no one place his own name before the Violet's, for though long suffering has trained us all to endure much from the needless synonymy and long-winded names of Peas and Broccoli, we trust one pretty name may suffice for each Violet.

**THE VERNAL GENTIAN.**—The fair weather is naturally deceiving *Gentiana verna* of the high hills and meadows so often covered with snow for months together. Mr. Kingsmill, in sending a few blossoms, says he has tufts with a dozen flowers open. It must be a welcome sight so near winter. This pretty plant has begun to be better understood as regards its culture; hundreds were sacrificed on the old dry-as-dust "rockery." If the new notions that the soil for alpine plants can only be determined after chemical, microscopical, and geological observation do not do much harm, we shall probably see many good colonies of it. Give it a moist, deep loamy soil, and let no coarse plants shade it or rob it, and it may be enjoyed and grown without any of the serious considerations we refer to.

**PANSIES YET.**—Even in the cold north of London in Mr. Kingsmill's garden these are

still bravely flowering on. After their long service of eight months in different parts of the country we thought they had taken a rest of a few months. Still the winter sleep is desirable, if only that these well tried jewels of our garden flora may re-appear with greater freshness in the warm spring days, when they bloom in earnest.

**PRIMULA WHITE LADY.**—This pretty double Primrose, from Mr. R. Gilbert, who is great at Primroses, but it is necessary to say Chinese Primroses, for this gentleman has lately taken to pay attention to our true British Primrose, which is a curious circumstance in the case of a man one is apt to contemplate across piles of Tomatoes or Lettuces or under the shade of large Vines and Peach trees! We are, however, satisfied with our native Primrose, and hope he does not join us with too many "evolutionary" ideas.

**FROM WATERFORD.**—Like Wexford, this county appears to be genial to flowers, and Mrs. W. Perceval Maxwell's Rhododendrons from Moore Hill in that county prove it, though no doubt the mild weather sees them flower in many places. The Czar Violets from the same garden, part of a very large crop abundant since the end of September, are fine, but this Violet has always struck us as somewhat needlessly coarse. The best advance in Violets of late seems to be the Marie Louise. I saw a pale purplish form of the single Sweet Violet the other day in Surrey, which seemed as desirable as any of the new and large forms.

**ZYGOPETALUM MACKAYI.**—This curious old Orchid, that used to be common enough, comes from Mr. Peacock. Although a kind of pariah among Orchids, it is nevertheless very beautiful and well worth growing for its blooms at this season. Mr. Burbidge tells me that the prevalence of inferior varieties rather leads to the neglect of the true plant, which he has in some abundance and in a good state in the College Garden.

**POLYANTHUSES AND OXSLIPS.**—It is not only in the milder districts that these are showing blooms, for Mr. W. Elliot sends them strong and showy from Deepcar, near Sheffield. He says "They grow amazingly in this cold region, and are nearly always more or less in bloom. Notice the leaves sent, which are from average plants sown last year; the plants are 1 ft. 6 in. or 2 ft. in diameter."

**FROM FARNBOROUGH GRANGE** come dwarf alpine Phloxes in good bloom; also Hepaticas, Limnanthes, Wallflowers, Pansies, Neapolitan and other Violets; all showing how the flowers respond to the genial days. The little mossy Phloxes are rarely seen in such good bloom at this season.

**DOUBLE WALLFLOWERS.**—We believe Mr. Richard Gilbert has taken seriously to hardy flowers lately, for he sends us from Burghley some double Wallflowers "wired." There is a slight inconvenience in wire (apart from its other difficulties), as by its aid one cannot give the flowers a drink. We presume he has taken to force the double Wallflower, or that the cool house plan for the gentle forcing and protection of very early hardy flowers has an advocate in one who could use the same house so effectively for other work at other seasons. From Burghley also come some very large yellow Primroses, with each flower nearly 2 in. across, and looking, owing to some artful kindness, as if one gathered them on some morning in May. We believe some of our readers object to this winter protection



and gentle forcing of some of our native and hardy exotic flowers, but on the whole it is a good practice. We have not thought less, but more, of the Lilac since feeling its delicious fragrance filling the hall of M. Carrière's house, and tracing it to a bush that had been placed in the window. There, without more heat than that of a cool passage, it had opened many flowers. The world indoors must ever be so small in comparison to woodland, wild, and garden, that we can only gain by those winter glimpses at flowers that belong by the right to spring.

TEA ROSES FROM DONNYBROOK.—Large and beautiful blooms of Madame Lambard, a noble Tea Rose, fit associate for large buds of Niphetos which came with them, from Mr. Garnett, of Ilney, near that once famous village. Mr. Garnett says they have been grown "in a cool house, one indeed (unheated) which contains 157 Teas. The house at present is in full bloom, and Mr. Burbidge, of the College Botanical Gardens, can tell you something about it. After years of Rose culture outdoors and in I find Catherine Mermet, Madame Lambard, Madame Falcot, and Niphetos the best for all seasons. Innocenti Pirola has hardly had time to prove its reputed good qualities."

## ORCHIDS.

### ORCHIDS IN NOVEMBER.

THE Orchid houses in the Royal Exotic Nursery, Chelsea, are now beginning to assume a gay appearance. Autumn flowering Cattleyas and Lælias are extremely gay, and just now constitute the chief attraction. Among those in full beauty may be mentioned *C. fausta*, a very beautiful hybrid between *C. Loddigesi* and *C. exoniensis*, the latter itself a hybrid. A striking peculiarity about *C. fausta* is the fact that not two out of the numerous seedlings raised from the seed resulting from the cross are alike with regard to colour and form. For instance, there are now in flower two totally distinct varieties—one named *aurea*, the other *crispa*. The former has a large amount of golden yellow in the lip and rosy pink sepals; in *crispa* the lip is beautifully crisped at the edges, and the yellow is not nearly so conspicuous. The flowers of *C. fausta* are intermediate, in size between those of the two parents as well as in form, and the shallow shell-like lip partakes strongly of that of *C. exoniensis*. It is a lovely Orchid, and one that must be popular. Another beautiful species is *C. Dormaniana*, which is remarkably distinct from other cultivated kinds. It possesses a beauty peculiar to itself. The flowers are below the average size of those of Cattleyas, the narrow sepals are a kind of greenish brown, and the lip, which projects horizontally from the sepals, is of a lovely rich amethyst, which forms the chief beauty of the flower. The growth resembles that of *C. Loddigesi* and *Harisoniae*, and the plant appears to be a fairly vigorous grower and a free flowerer. It was named in compliment to Mr. Dorman, of Sydenham, whose collection is particularly rich in Cattleyas and Lælias. *C. gigas*, with its gorgeous blooms, as well as those of the true autumn flowering form of *C. labiata*, make in themselves an exhibition, so fine are they this year. As regards the true *C. labiata*, which every year appears to get scarcer, it is surprising that amongst the vast quantities of Orchids consigned to this country from South America, so little of this superb Cattleya reaches us. In the Cattleya house a mass of that charming little Mexican Orchid, *Barkeria Lindleyana*, makes a fine display, its elegant spikes of rosy crimson

blossoms making such a striking contrast with the big flowers of the Cattleyas.

Numerous Lady's Slippers are in bloom, but all inferior to the new and rare *Spicerianum*, undoubtedly the finest among the Old World *Cypripedia* yet introduced. It has beautiful flowers, produced in profusion, and the plant itself is what cultivators term a "good doer"; indeed, we should say that it is as easy to grow as the old and well-known *C. insigne*. What renders this Lady's Slipper so distinct from all others is the beautiful dorsal sepal, which is pure white, and stands up so prominently that it is seen to the best advantage. There is, too, an elegant curl in this sepal that adds much to the beauty of the flower, which looks more like chiselled marble than soft vegetable tissue. There are several plants of this Lady's Slipper in flower, the largest bearing eleven blossoms. *Mormodes Wendlandi*, a rare species recently introduced, is worthy of consideration, as the lemon-yellow waxy blooms, so curiously shaped and so deliciously perfumed, are different from those of any other Orchid with which we are acquainted. It remains in flower an astonishing length of time, even in the fog-laden atmosphere that now and then envelops Chelsea. *Ceologyne Peltastes* is both a graceful and beautiful species, and different in habit from most of its congeners, inasmuch as it has a climbing mode of growth, like that of some of the *Bolbophyllums*. The *Calanthes*, as usual in November, constitute in themselves a fine display, but their flowers, opened under the dull weather which we have lately experienced, are not so brilliant as those produced in the pure air of the country.

Among cool Orchids the *Odontoglossums* are the most showy, and a few amongst them are particularly noteworthy. The charming little *O. blandum* is admired by everyone for its neat little spikes of prettily spotted blossoms that strongly remind one of those of *O. naevium*, though there is a conspicuous difference in the lip, which in *blandum* is broad, pure white, and marked with rosy purple.

W. G.

### NOTES ON ORCHIDS IN FLOWER.

THE *Phalænopsis* season.—The beauty of the Moth Orchids, as the *Phalænopsis* are called, is now about at its height, and there are few places where they can be seen in such large numbers as in the Clapton Nursery where they now form the chief attraction. Two spacious houses are filled to overflowing with plants of every variety, and flower-spikes may be counted by hundreds or indeed by thousands. The chief bulk of this huge collection is made up of the lovely *Schilleriana*, *amabilis*, and *grandiflora*, all of which are in full flower, while the other rarer kinds are represented less numerous. Among the latter we noticed *P. leucorrhoda* and *P. casta*, two very beautiful kinds considered to be natural hybrids between those first mentioned. The former has leaves possessing the dark mottlings of *Schilleriana*, but the flowers are more like those of *amabilis*, there being a good deal of white in them, but washed with rosy purple, while the lip is marked like that of *amabilis*. *P. casta*, on the contrary, has leaves scarcely mottled at all, the markings quite disappearing in old leaves. The flowers are as large as those of *amabilis*, and have a delicate purplish blush tint just sufficient to render it distinct from *Schilleriana*, though at any time the leaf character is sufficient distinction. These two stand out conspicuously among the less rare kinds; nor must the lovely *P. intermedia Portei* be omitted. This is the most distinct, and to our mind more beautiful than any in flower; the blossoms are only of medium size, but they are pure white, with the exception of the lip, which is a beautiful rosy purple. A fine plant bearing a branching flower-spike has been a great attraction for some time in this nursery. Other species now in full beauty are

the little *P. rosea* and *P. Luddemanniana*, both of which seem to be perpetual flowerers and should be included in every collection. Among the *Schillerianas* is an extremely fine form with broad firm sepals and a rich rosy pink colour, but what is more it is deliciously perfumed, a rare quality in a *Phalænopsis*. Most of the plants are grown in small baskets, in which imported plants seem to quickly establish themselves. There is one huge imported plant in particular of *P. amabilis* which bears the remains of numerous branching spikes and is developing others.

COOL ORCHIDS.—In Mr. Bockett's rich collection of Orchids at Stamford Hill this section above all others is exceptionally fine; indeed we have rarely met with a private collection so numerous and representative, and in such uniformly good health and vigour. Though the present is not by any means the most favourable season in which to see the houses at their best, there is a fair sprinkling of bloom, including some not commonly seen. The bulk of the cool Orchids is grown in a long narrow house with a north aspect, and having a low pitched roof. In it are now beautifully in flower among *Odontoglossums* the lovely *O. nebulosum* and a variety called *roseum* which we have not hitherto seen. The flower is characterised by large size, unusual breadth of sepals, and scarcely any spots, but the flower, and especially the margins of the sepals, is flushed with a delicate pink, rendering it very charming and distinct. Of *O. Rossi majus* there are some fine masses in full bloom that show what a lovely Orchid it is when grown finely, and when the finest forms are selected. Among the *Masdevallias* of the more showy type are *Veitchii*, *Lindeni*, *Davisi*, and *igneæ*; the latter is particularly noticeable, as there are numbers of plants all profusely in flower. It is certainly one of the most useful of cool Orchids for winter, as it not only bears a good crop, but blooms continuously, and the bright orange red colour of the flowers suits the taste of everyone. The pure white *M. tovarensis*, uncommonly well grown, is represented by dozens of moderate-sized plants, copiously furnished with flower-spikes, which later on will make a beautiful display. This species appears to be grown here in a rather warmer temperature than that afforded the rest of the species, and which evidently seems to suit its requirements.

*Mesospinidium vulcanicum*.—This charming Orchid is one of the most valuable of all that flower in early winter, and the pleasing rosy purple colour of the long graceful spikes of flowers makes it a favourite with everyone. It is also a remarkably distinct Orchid if we except *Odontoglossum roseum*, which it strikingly resembles, though in every respect much superior. It is a native of the Andes of Peru, and succeeds well in a cool house with *Odontoglossums* and similar Orchids. It is now beautifully in flower in the Clapton Nurseries, and at Mr. Bockett's, Stamford Hill, it is grown particularly well, as many as twenty-two flowers being borne on one spike.

*Oncidium cheiroporum* is sweetly pretty and a very desirable Orchid to cultivate, as it never fails to produce a satisfactory crop of bloom, extending over a long time in winter and spring; indeed it seems to be almost a perpetual flowerer. It is of dwarf growth, and the foliage is of an unusually deep green, thus setting off to advantage the dense clusters of small waxy clear yellow flowers suspended on elegant thread-like stems. Some hundreds of plants of this *Oncidium* in the Clapton Nursery are just coming into flower.

*Cypripedium Spicerianum*.—This handsome and rare Lady's-slipper appears now to be becoming a little better distributed; we have met with it in various collections lately, and the other day beautifully in flower in Mr. Bockett's collection at Stamford Hill. Though only a small plant it has borne a fine flower, the exquisite form of which and the pure white waxy dorsal sepal attracting particular attention. Other *Cypripedia* in bloom are *C. selligerum*, a handsome and



strong growing hybrid; *C. Dayanum*, Argos, Harrisianum, the chaste little *C. niveum*, and the favourite old *C. insignis*, all represented as they should be.

**Lælia harpophylla.** As this Orchid has only existed in the choicest collections hitherto, we are very pleased to see such a large importation of it as that in the Clapton Nursery which Messrs. Low have recently acquired. The plants are in excellent condition, and in many instances have become nearly established. The beauty of this Orchid is almost unique, the colour being an orange-vermilion, far finer than that of *L. cinnabarina*.—W. G.

**Calanthes failing to bloom.**—In reply to your correspondent who complains (p. 495) that his *Calanthes* and *Gesneras* fail to open their blooms, I would recommend him to gradually reduce his minimum temperature to 55°, allowing the maximum to reach 70° with sun-heat. The atmospheric humidity should range from 65 to 95 per cent. To maintain or ensure these conditions he will find very little artificial heat necessary if the weather continues as mild as it has been lately, nor is it necessary to damp the paths or stages during the day, but rather increase the dryness in the daytime by wholesome ventilation. The moisture resulting from the necessary watering in the afternoon which any plants may require, or even a light sprinkling of paths at the close of the day (taking especial care not to allow any water to fall on the blooms), will then do no harm, but be rather advantageous in preventing exhaustion, from which cause I should suppose the plants have suffered, or else from an atmosphere too heavily charged with moisture during the day. If your correspondent will cover the house with mats or canvas at night, and give no artificial heat then, unless the temperature sinks below 60°, at the same time securing a dryer atmosphere during the day by moderate ventilation rather than by fire-heat, I think the results will not be disappointing, and if, after a fortnight's trial, he will kindly give the results in THE GARDEN, I shall esteem it a favour.—T. C. W.

**Orchids failing to bloom.**—The *Calanthes* referred to by "Anxious Enquirer" (p. 495) would certainly fail to bloom in such a position as an orchard house. This section, until the spikes are well advanced and several flowers opened, should not be subjected to a lower temperature than 70°. It will be found that the buds, even on strong well-grown plants, will turn yellow and fall if the temperature descends to 60° on a cold night, and it is highly probable that "Anxious Enquirer's" orchard house would be much colder than this during the few cold nights we had two or three weeks ago. His only chance to save the yet unopened buds is to return the plants to the stove at once. The smoke due from the boiler passing through his houses is a highly probable cause of his failure with his other plants.—T. L. C., *Birkenhead*.

**Vanda Boxalli.**—This new Orchid promises to become a far finer plant than was at first anticipated. The finest flowering example we have yet seen of it is now in the Clapton Nursery. It has two spikes, one bearing 17, the other 15 flowers of large size and unusually rich in colour.

**Pilumna fragrans.**—One of the houses in the Clapton Nursery is perfumed with the flowers of this lovely Orchid, which is represented by some scores of flowering plants. There are both forms, the nobilis and the type, the former having the finest flowers, though it does not appear to be so floriferous.

**Aerides Leeanum.**—This rare species, said to be very beautiful, is showing flower in Messrs. Low's Nursery, Clapton, where there is a large and fine importation, which will probably yield a large amount of bloom this season.

**Vanda cristata.**—In Mr. Bockett's collection this rare Orchid promises to flower finely this season; four spikes are developing on a plant a foot or so in height.

**Angræcum Ellisi.**—This remarkable and, till lately, extremely rare Madagascar Orchid is developing flower-spikes in the Clapton Nursery.

## NOTES OF THE WEEK.

**AN AFRICAN IRIS IN WINTER.** At a season when all our plants, even the hardiest, fade and are cut away, it is surprising and delightful to see a hardy Iris (*I. stylosa*) beautiful, as it now is in the garden at Munstead on a little border facing the south-west, sheltered by the wall of a glass house. The buds are like very large purplish Crocuses, and the flowers large. It is a native of Algeria, flowering in winter, and wishes, it seems, to keep its time here in like manner. No doubt the recent warm weather has helped it, but it is a constant winter-flowering plant in some of our gardens, though we did not think it would do so well on the Surrey hills. The leaves are long and graceful. The plant requires to be established a good while before it flowers freely; therefore, those getting young plants must wait for their beauty.

**THE WINTER JASMINE.**—We noticed lately a singularly good effect from a plant of this against a wooden shed, painted black, in the garden at Munstead. The main branches only were fixed to the wall, and the shoots hung gracefully, laden with large flowers. A deep eave saved the flowers from rain. The exposure was a south-west wall, protected from the north and east. Mr. Balding, writing from Clapham respecting this shrub, says, "It is a great pity people about London do not plant it more than they do, as it seems to stand London smoke, and does very well. It has been very fine here for the last fortnight or more, but it is going off a little now."

**CALLIPHURIA SUBEDENTATA.**—Along with flowers of the charming *Eucharis candida*, Mr. Hans Niemand sends us this beautiful bulbous plant, introduced some years ago from New Granada. Its foliage so much resembles that of the *Eucharis*, that before it produced flowers in this country it was erroneously called *E. candida*. The flowers are small, pure white, and not so open as those of a *Eucharis*.

**ABUTILON YELLOW PRINCE.**—The brightest yellow Abutilon we have seen comes from Mr. Hans Niemand's nursery, Edgbaston. He says it is one of the most useful winter-blooming varieties grown. The blossoms, which are large, are bell like, and have their petals beautifully crimped.

**POINSETTIA PULCHERRIMA.**—We have often seen this well grown, but never better than the specimens of it which were exhibited by Mr. Charlton at Tunbridge Wells on Thursday last. The large numbers of finely developed bracts, often from eighteen to twenty on plants not more than 1 ft. high, were most effective.

**SALVIA SCHIMPERI.**—Judging by the specimen of this species sent us from the Royal Nurseries, Edgbaston, it is not worth growing except for the sake of variety, but *S. Camertonii*, the Pine-apple-scented species, is pretty enough to be cultivated in a general way.

**EUPHARIS AMAZONICA.**—Plants of this charming *Eucharis* flowered in great perfection this autumn at Lochbrae, near Glasgow. They are exceptionally well grown in 14-in. pots, and each plant has produced as many as twenty spikes, most of them carrying from six to eight flowers, all open at one time. It is not uncommon to see this plant well grown in very large pots or tubs, but so abundant a display of fine blooms in pots of a moderate size is unusual.

**TWO NEW POMPONES.**—Two pretty dwarf Chrysanthemums, Miss Lavina Hutchings, resembling small nobby buttons, palest of lilac with crimson centre, and Mrs. C. Langlois, of a deeper pinkish lilac, with somewhat larger and fuller flowers. Dried up so much by the use of cotton wool, that we cannot judge of their merits fairly. Respecting the persistent use of this to flowers injurious material, one is sometimes obliged to ask if those whose lives are passed among flowers treat them so unkindly in packing, what can we hope from the outer barbarians?

**WINTER SALVIAS.**—Mr. Cannell, of Swanley, again showed some of these valuable plants on the occasion of the Chrysanthemum exhibition at

the Royal Aquarium. We thought the plants of the blue *S. Pitcheri*, shown by Mr. Barron at the last Royal Horticultural meeting, were as fine as could be grown, but the cut blooms of Mr. Cannell were much larger, and being exhibited some dozens together made a most attractive mass. *S. Branti*, the brilliant vermilion Hoveyi, the deep purple Mons. Issanchou, the Striped Scarlet and White, were shown splendidly too, as was also *S. Bethelli*, which is the most serviceable of all. At one time it was doubted if there existed any real distinction between *Bethelli* and the typical species, *S. involucrata*, but Mr. Cannell possesses proof that *Bethelli* is unmistakably distinct, being finer in colour and with larger flowers, and this fact is corroborated by Mr. Sage, of Ashridge, who grew both, but has discarded *involucrata* as worthless compared with *Bethelli*.

**HARDY FLOWERS IN WINTER.**—The following are now in flower in Mr. Stevens' garden at Grasmere, Ryefleet, viz.:—

Polyanthuses	Heaths
Stocks	<i>Gemista multiflora lutea</i>
<i>Hepatica angulosa</i>	<i>Albiflora</i> (scarlet)
<i>Vincas</i>	<i>Spiræas</i>
<i>Auriculas</i>	<i>Lonicera tatarica alba</i>
<i>Menziesias</i>	<i>Mononette</i>
<i>Houstonia alba</i>	<i>Pansies</i>
<i>Dianthus</i>	<i>Violas</i>
<i>Aster Reevesi</i>	<i>Daisies</i>
<i>Lychnis</i>	<i>Roses</i>
<i>Carnations</i>	<i>Berberis Darwini</i>
<i>Trollius</i>	<i>Potentilla alba</i>
<i>Achillea biserrata</i>	<i>Geraniums</i>
<i>Achillea dentifera</i>	<i>Aubrietias</i>
<i>Aster turbinella</i>	<i>Coronillas</i>
<i>Chrysanthemums</i>	<i>Erigeron acris serotinus</i>
<i>Jasminum nudiflorum</i>	<i>Polygala Chamæbuxus</i>
<i>Daphne Mezereum grandiflora</i>	<i>Alyssum orientale</i>
<i>Daphne Fioniana</i>	<i>Corydalis capnoides</i>
	<i>Phloxes</i>

OUR valued correspondent, Dr. Paterson, of the Bridge of Allan, well known for his love of Orchids and success in their culture, was recently introduced to Her Majesty the Queen, and had the honour of presenting her with a basket of his beautiful Orchids, comprising, we believe, 200 or 300 spikes from many different species, which Her Majesty gracefully accepted.

THE PRESENTATION previously alluded to in our columns to Mr. Bruce Findlay was, we understand, made in the Town Hall, Manchester, on Wednesday last, under the presidency of the Mayor. It amounted to upwards of £1000.

**POLYANTHUSES AND OXLDIS.** It is not only in the milder districts that these are showing blooms, for Mr. W. Elliot sends them strong and showy from Deepcar, near Sheffield. He says "They grow amazingly in this cold region, and are nearly always more or less in bloom. Notice the leaves sent, which are from average plants sown last year, and which are 1 ft. 6 in. or 2 ft. in diameter."

**MILDNESS OF THE SEASON.**—Strawberries forced last spring, and afterwards planted on a south border, are now both in flower and fruit. Wallflowers, Polyanthuses, Daisies, Myosotis, and Aubrietia purpurea are flowering freely. During the last fortnight the thermometer has frequently stood at from 60° to 65° in the shade.—Wm. Nield, *Wythenshawe, Northwich*.

**CHINESE PRIMROSES.** Always popular in the winter greenhouse, these flowers are now deserving greater favour than ever, owing to their bright and varied colours. A fine selection, in three or four shades of colour, comes from Mr. Crook, at Farnboro' Grange.

**CELOSIA PYRAMIDALIS.**—We noticed at Tunbridge Wells, the other day, charmingly distinct, well grown, and useful varieties of this *Celosia* exhibited by Mr. Allen, of Ashurst, proving how useful plants of this must be for autumn indoor decoration.

**ROYAL ARBORETUM, EDINBURGH.**—We learn that Mr. John Sadler, curator of the Royal Botanic Garden, Edinburgh, has also been appointed curator of the Royal Arboretum there.

**SPECIAL PRIZES.**—At the next meeting of the Royal Horticultural Society (December 13) Messrs. J. Carter & Co. offer some £12, in six prizes, for twelve dishes of vegetables (without restriction to varieties), to be competed for by gentlemen's gardeners, institutions, and amateurs.

**MUSHROOM CULTURE OUT OF DOORS.**—We wish to call attention to the valuable article on Mushroom growing, in another column, by Mr. Barter, who has large experience as a spawn manufacturer and Mushroom grower.



## RHODOTYPOS KERRIODES.

THERE is such a striking resemblance between this and the old Japanese *Kerria* (*K. japonica*) that it is difficult at first sight to distinguish the one from the other when not in flower. The *Rhodotypos* is a handsome shrub of slender growth, having opposite leaves with much wrinkled surfaces and large pure white flowers. It appears as yet to be very little known in cultivation, but it is a shrub that certainly deserves a place in every garden, as it is a beautiful object in summer when in flower. In Mr. Stevens' garden at Byfleet it grows about 4 ft. or 5 ft. high and is perfectly hardy, having been fully exposed to the rigour of the last two winters. From this rich shrub collection our drawing was made last August. This *Rhodotypos* is a common object in culture in Japan, but it does not appear to have been found in a wild state. Siebold, who first brought it into notice, believes it to be a native of the island of Kiusiu.—W. G.

**Abies Alco-**

**quiana.**—This is a Spruce which for ornamental purposes is not surpassed by any of its congeners. Its habit of growth is free, and its colour a silvery glaucous hue, which in the case of the young shoots is very conspicuous; the plant, too, is thoroughly hardy, and not fastidious as to soil or situation. Where planted in company with some of the darker-leaved species, such, for instance, as the Norway Spruce (*Abies excelsa*), the contrast is very striking.

This Fir is a native of the mountainous parts of Japan, whence it was first introduced by the late Mr. John Gould Veitch.—ALPHA.

**Hardiness of Dacrydium Franklini.**

—Although the last two winters have severely tried all plants of doubtful hardiness, yet some small specimens of this among the collection of *Taxaceæ* at Kew have passed through the ordeal unscathed, a fact which would seem to warrant the conclusion that some New Zealand plants will withstand even the most rigorous of our winters. In another part of the gardens *Olearia Haasti* is also unharmed, and flowered as well as ever during the summer.—H. P.

## HOLLIES AT DUBLIN.

FOR the folly of planting tender and expensive evergreens and Conifers all over this garden land, we shall reap a poor reward in the shape of dead, or half-dead, or ugly "specimens." There are but few who follow the better way of paying attention to plants suited to their climate and soil, and not liable to be killed every winter a little more severe than we are used to. One of the most interesting examples of the true course is that now shown by the Hollies in the fine old garden of Trinity College, near Dublin. There fine specimens abound,

trees easily injured by smoke have little chance, but he knows he could depend on the Holly, and therefore gave it the place of honour. Growing many good kinds, and giving them careful attention year by year, nothing we know of could have given a better return; no known evergreen so good a one under the circumstances. In all probability they will be as beautiful during the next twenty-five years as they have for the past; unless, indeed, the smoke and strong sulphurous vapour which pervades Dublin should do the work similar influences have done elsewhere. Several series, generations, or plantations of the

"very rare and beautiful Conifer" type would, in the ordinary way of planting with materials of this description, have passed out of sight, or the remains of them be an eyesore.

There is another point suggested by the matter which is not unworthy of attention, and that is the good result of developing in such cases vegetation likely to be interesting or suggestive in the locality. The tendency is too common to value a thing in proportion to its exotic character, and to undervalue things native of or fitted to adorn our clime. When the world has been ransacked, and vast sums spent on strange Conifers, it will be found that not half-a-dozen of them surpass the common Yew. Therefore, we say it were wise and better where the opportunity exists in any large garden or pleasure ground, to grow well and fittingly place the various strange and valuable forms of the Yew as well as the fine old form itself. There are many places in which are to be found expensive and unproved Conifers from many finer cli-



*Rhodotypos kerrioides.* (Drawn from Nature, August, 1881.)

mates than ours, such as that of the California or Spanish hills, where one may look in vain for a well-developed specimen of the yellow-berried Yew—one of the most precious hardy trees we have. So it is in many similar cases. The usual way is to regard things difficult or foreign as worth much more attention than old and tried friends. No doubt it is desirable that every evergreen tree likely to prove hardy and beautiful in the country should be tried in various districts; but such trials should be made without spoiling our gardens with avenues and lines of trees of no proved value in this country, as has been done so often. The trees we refer

to are those which are planted in great numbers, and which are not worth the trouble and expense of planting. The trees we refer



to do well when young and in the nursery stage, and thus an enormous number have been sold and planted which will never succeed. The reason of their thriving while young and perishing when not half grown, as in the case of the mountain Pines, is that the mounds of good soil in which they are placed are generally moist and rich, and the young trees grow as if on their native hills, until they begin to get into the natural soil, and there find wholly different conditions. Apart from these, we have to consider the many things which are too tender for our winters, no matter how suitable the soil. No trial is now needed for the many things that have failed of recent years. Let them be grown only in districts where they thrive. Where they perish they should be replaced with trees or shrubs of known endurance and beauty. Experiments must be made with new things, but the garden landscapes or tree pictures in our parks or pleasure grounds cannot be formed with untried or useless trees or shrubs.—*Field*.

**The Oriental Plane tree** (*Platanus orientalis*), a native of the Levant, has possibly been less grown in this country than it deserves to be, as it is certainly one of the most majestic of park trees. Its foliage is exceedingly ornamental; it is of rapid development, and is found to thrive in even the smoky atmosphere of large towns. Like the Beech, it appears to have suffered less from the effects of the late gale than most other kinds of trees have done. It casts a portion of its old bark from its stem and branches during the early part of the winter, but here this bark shedding has occurred somewhat earlier and to a greater extent than usual this year. At Hawstead Place, some two miles from Bury St. Edmunds, and formerly the residence of the Cullum family, are to be seen three remarkably fine examples of this beautiful tree. They are very old, and are possibly the finest in the country; their planting is supposed to be coeval with a visit paid by Queen Elizabeth to this place some 300 years ago.—*P. G.*

**Retinospora tetragona aurea.**—This little Conifer is at the present time very bright and cheerful looking. Its colour is a clear golden yellow, and its habit so dense and compact, that it is well adapted for planting on the sunny parts of rockwork, where it may be associated with the choicest of plants without in any way overgrowing them, as it takes many years to reach even a few inches in height. For winter bedding also it is very suitable, and, like the other dwarf *Retinosporas*, it may be moved at almost any time without injury.—*ALPHA*.

**The Sea Buckthorn** (*Hippophaë rhamnoides*).—If this will produce its bright orange-coloured berries, resembling somewhat those of a miniature *Solanum*, as freely in this country as it does in Switzerland, where I found it in great abundance, both in the Rhone valley and also in the Prättiqua, I should say it would be a good addition to our shrubberies. Small seedlings of it which I received by post from the Tyrol have grown with great rapidity, but as the tree is dioecious, as is the *Aucuba*, it remains yet to be proved whether I shall have any berries on those sent to me or not.—*J. T. P.*

**Dahlia imperialis.**—The culture of this plant is so easy, and it is so strikingly handsome at the present time when in flower, as to suggest that it might with advantage be more extensively grown than it is, for though to enjoy the blossoms protection is necessary, yet we often find many things jealously protected that never make one half the show which this *Dahlia* does. There are now half a dozen plants of it in the temperate house at Kew that have been grown freely during the summer and that are now in large pots; the blossoms are just commencing to expand, and they will continue in beauty for a long time. They may be seen in one of the octagons, in which the little additional heat used there is of great benefit to them.—*H. P.*

## THE KITCHEN GARDEN.

### MUSHROOMS FROM SEPTEMBER TO JULY OUT-OF-DOORS.

THE space to be spared for the growth of Mushrooms having been ascertained, it is easy to calculate how much manure will be required. By having the ridges made of the following sizes, viz., 2 ft. 6 in. in width at the bottom, 2 ft. 6 in. in height, and about 6 in. in width at the top; the sides slope in such a manner that the mould or casing sticks well to them. One cart-load of manure will make 1½ yds. of bed of the above dimensions, and besides, sufficient litter may be shaken out of it to cover it. For a continuous supply, beds should be made the first week in August, and one every month afterwards until April. After that it is useless to make any beds out of doors until August again, the heat being generally too great for Mushrooms to grow from the latter end of July until the end of September. Beds made in August will come into bearing in six weeks. If made after that time they will take from eight to ten weeks, until March, when they will again produce Mushrooms fit for use in the six weeks.

**The best materials** with which to make Mushroom beds is good stable manure from well and hard fed horses. Never use it if the horses are fed on Grass or other green food. When you have enough to make a bed of the size required, shake out the longest litter, only leaving say about one half litter and one half droppings. Mix all well together and throw it into a heap of such a shape that it will not get very wet. There let it remain for about four days, then turn it as it were thoroughly inside out. After the first turning it should not remain longer than two days without turning, except it should be raining, when it would be better to let it alone, water making it sour. I find that to get it into good condition about six turnings are needed. Thus, on a fine day it should be made into a bed or ridge. If the bed is a short one, it should be made all at once. If long, make it in about 2-yard lengths. The manure should be well shaken, and when the bed is say about 18 in. high, it should be well trodden down, and the sides well beaten into the shape and width required. The treading will bring it down to 1 ft., then another 18 in. of manure should be shaken on it, to be again trodden down, and the sides beaten and shaped with a fork. That will bring the bed to 2 ft. Another 6 in. should then be added and well beaten down, the sides being swept downwards with the fork in order to throw rain water off. Two days after the bed is made up some holes should be bored from the top to nearly the bottom with a small iron bar, to let the heat off and prevent the inside of the bed from becoming too dry. Make them about 9 in. apart all along the centre of the bed; a stick should then be inserted in the bed to test its heat, and when it has subsided to about 80° it may be spawned with safety.

**Spawning** requires more care than is usually bestowed on it: lift a little of the manure with one hand and insert the spawn with the other. A dibber should not be used on any account, as that makes a round hole which the spawn seldom fills, steam generates around the sides, and the spawn rots before it can get hold of the manure in which it is to grow. This I am certain has caused more failures than anything else, though the blame is generally laid on the spawn. If the spawn is put in tightly with the hand and the manure well pressed down on it no steam is generated, and the spawn "runs" off at once. It should be put in level with the face of the bed, so that the mould may just touch it when the bed is cased, for if the manure gets

too hot the spawn will often run in the mould and again catch hold of the manure. When it has become cool enough spawn should be broken into pieces not less than 2 in. square—larger rather than smaller. The pieces thus broken should be inserted in the bed about 9 in. apart. But if limited as to quantity of spawn put them further apart rather than reduce them in size.

**The casing or landing**, as it is called, should consist of good heavy mould if procurable. Get it if possible from ground to which manure has not been applied for some time, as mould that has been well manured often breeds mildew. The mould should be made wet enough to stick to the sides of the bed the day before it is used for that purpose, and neither bed nor mould should be watered, except both are exceedingly dry or the weather very hot. The mould should be applied about 2 in. thick on the bottom of the bed, reducing it to 1 in. on the top, and it should be beaten down with a spade until no impression can be made on it. Then cover all up with well dried and sweetened litter, the thickness of which must be regulated by the time of year—say from 6 in. to 18 in. thick, and over all a mat should be laid to assist in keeping out wind and water, and to give the bed a neat appearance. Let the beds remain for at least a month untouched; then, on a mild, damp, or foggy day remove the litter and shake it well up; should there be any froth or sour fermentation working out of the mould, rub it off with a handful of straw, and should the bed be very cold, a little waste hay might be put next the mould, as that creates heat much quicker than straw. If hay be not obtainable, then put a little fresh straw next the bed, and over that the old litter.

**Gathering.**—In a fortnight from this time the spawn should begin to show, and when the Mushrooms are fit to gather care must be taken never to open the bed, if not absolutely necessary, when the wind is strong, as in that case the litter cannot possibly be put on as tightly as before. If the weather is very cold, gather in the middle of the day, but only open a very small space at any time. Always pull the straw carefully downwards from the top of the bed and roll it towards you. If you lift the straw upwards, the litter on the other side of the bed will be sure to slide down, and if ever so little will break quantities of the small Mushrooms, and thus thin the crop. When gathering always pull the Mushrooms so as to get the roots, and should it break, with an old knife lift out the old roots at once, when the spawn will immediately begin to repair the loss. Mushrooms should not be allowed to remain on the beds too long, for if very large or old, the bed soon becomes exhausted. *JOHN F. BARTER.*

*Portland House, Lancaster Street,  
Harrow Road.*

### CAULIFLOWER AND LETTUCE PLANTS.

WHERE these have been sown thickly either on open borders or under glass, they should now be pricked out 3 in. apart in cold frames or under hand-glasses. Thus treated, they make better plants than if left in seed beds. They must be kept as hardy as possible by full exposure on all favourable occasions, but cover them up securely in case of severe frosts, for although they may not be injured by frosts under glass without any external covering, I believe that in the case of Cauliflowers severe checks are the forerunner of premature heading, or what is called "buttoning." Amongst Cauliflowers few excel the Early London for a main crop; Veitch's New Early Forcing is a good kind for growing in pits or under cloches for the very earliest supply; and Stadtholder comes in well after Early London. Lettuces may be wintered under the same conditions as Cauli-



flowers. After trying all the latest improvements I am convinced that there is nothing equal to the Black-seeded Brown Cos either for hardness, crispness, or flavour. After they are planted in frames or other winter quarters a good dusting of wood ashes will prove of great service to them. If the soil is moderately moist they will not require any water for some time, and a dusting of any dry powder keeps slugs at bay. If kept well ventilated, both Lettuces and Cauliflowers may be transplanted to shallow trenches in March, when a few evergreen branches should be placed around them. The soil for their reception should now be well manured and dug up roughly. It will thus be in good condition when required, and both Cauliflowers and Lettuces like a good depth of well-enriched and deeply-cultivated soil.

J. G. L.

#### FORCING VEGETABLES.

MANY are expected to produce all kinds of forced vegetables with very inadequate appliances. It is, however, best for all concerned where proper forcing houses are provided. The money invested in such structures is not ill applied, as it is not in winter alone that forcing houses are useful; fine Strawberries may be had from them in spring, and Melons and Cucumbers in summer. A well-built and thoroughly heated Melon and Cucumber pit is an excellent place in which to force vegetables at this season, and a Mushroom house or some such place suits material which requires to be grown in the dark. Plenty of top and bottom heat is necessary in both, and with this and well developed and matured roots to work with the produce should be abundant and good. Asparagus, Sea Kale, and Rhubarb are the main roots forced at this season.

**Kidney Beans** are also highly valued, but if the plants are not well advanced in growth by this time it will be a difficult matter to get them to bear pods until the days begin to lengthen. When spring is far advanced Beans may be had readily in boxes, but now they will only succeed in pots, and 6-in. ones are large enough at this season. Where the seed was sown in them in September or early in October, growth will now be strong and healthy, and as the plants come into flower the atmosphere about them should be kept very dry to insure the pods forming well and swelling freely. Stimulants at the roots will do much good now. Those contemplating sowing seed now would do as well to defer it for some time, as little progress will be made until after the new year, unless the forcing accommodation is good, and under all circumstances the crop would be a light one. Damp and cold must be avoided in Kidney Bean forcing in winter. About Christmas or the new year is a good time to start the spring crops. Six or eight seeds sown in a 6-in. or 8-in. pot in some good loam and half decayed manure will grow quickly and do well in any structure in which there is a temperature of 60° or so. Most growers know now that Kidney Beans do not produce roots from the stems, and the plan of filling the pots only half full of soil for the seed, and completing the filling up after the plants are advanced in growth, has been almost wholly discontinued, as nothing is gained by it, and it requires extra labour. Mushroom manure not too much decayed is better in the bottom of Kidney Bean pots than any kind of hard drainage, and until the pots are rather full of roots water must be applied with caution.

**Asparagus** is one of the most acceptable vegetables any one can force; roots of this over four years old may be lifted at once and placed in heat; a good manure and leaf hot-bed with a frame over it will bring it forward rapidly if the roots are placed on the surface and nearly covered with soil. In a new bed a good deal of steam rises at first; therefore a little ventilation may have to be left on night and day to allow it to escape, but further than this not much fresh air is wanted. A bottom heat of 80° will cause it to sprout rapidly, but the top heat may be 10° or

20° lower than that, thus inducing the produce to be less spindly. This kind of treatment will also answer for Asparagus in a pit as well as in a manure frame. Sometimes the smallest growths come up first, but as they are good for nothing except perhaps for cutting up as a substitute for Peas or for soups, which are not always wanted, the best plan as a rule is to cut the small growths away as they appear; this will cause the best crowns to start into growth more freely, and also stronger. With well matured roots good Asparagus may be cut in a fortnight or three weeks after having been placed in heat, and from that time they will continue to bear for some weeks. Out of doors one is afraid to cut too long or too much, but it is different under glass; there every particle of it should be cut as it becomes ready for use, and from 100 roots many dishes may be had. Some may require to start this number at one time, while others may make two plantings of 50 each; but if a quantity of roots be put into heat every three weeks or so, a constant supply will be kept up as long as Asparagus is wanted.

**Seakale roots** for forcing need not be so old as those of Asparagus. In good soil they grow fast and fine. Roots for forcing may be had two years after the seed is sown. As Seakale is only good when tender and white, it must be forced in the dark, as, for instance, in a Mushroom house. Here it is an advantage to have some hot manure and leaves in which to plunge the roots. As sometimes growth does not begin so readily as could be desired, a little bottom heat soon forces it. The roots may either be planted amongst soil placed over the manure, or they may be put in pots with a little soil about them, plunging the pots. This is a convenient way, and where there is no more suitable place, the pots can be placed on the hot-water pipes with another pot turned upside down over the Kale. In this way good Kale may be produced. Lifting the roots and forcing them in some such ways as these is surer and quicker at this season than trying to get the crop in by covering it over in the open ground. As spring advances pots or boxes and hot manure will produce it in the open quarters.

**Rhubarb** should also be lifted at this season and treated in much the same way as Seakale. The roots should not be disturbed much; on the contrary, the whole clump should be lifted and placed entire in the forcing quarters. I have seen some fine Rhubarb cut all winter from a number of roots placed over a fire in the dark corner of a shed, and it is a good plan to utilise places of the kind in this way. Bottom heat and plenty of water are needed to start it into growth, and those who have the means of using these need not fail to have Rhubarb from Christmas and onwards. This year we intend forcing our Seakale and Rhubarb under a plant stage in a pit, and as there is a good deal of heat here and not much light, there is a little chance of failure. A few roots of each will, however, also be put into the Mushroom house, and this will be something to fall back upon.

Our first batches of all the roots mentioned have just been lifted and placed in their forcing quarters, and no time should now be lost in doing this generally.

CAMBRIAN.

#### MULCHING ASPARAGUS.

By this time all the tops of Asparagus will be withered and should be removed, cutting 1 in. or 2 in. above the level of the soil. Immediately this is done, a good top-dressing of manure should be applied. Where the roots are a number of feet apart two or three forkfuls of manure may be put on and around each, the remainder of the ground being left bare, but where the roots are close together the whole surface should be covered. Where the ground is poor or the roots weak, they will be greatly helped by a handful of salt or guano being sprinkled over each crown before the manure is put on. Seaweed is an excellent winter covering for Asparagus, and where it can be had salt will not be needed, but it is only in a few

places that the right weed can be had, and those who have to do without it must resort to salt, which forms a good substitute. Asparagus roots are thick, fleshy, and greedy feeders, and nourishment seems to be stored up by them almost as much in winter as in summer. It is surprising how much Asparagus may be benefited by proper surface feeding; even old beds or exhausted plants may be improved as much by it as by any other means, such as forking manure between the rows or about the roots; in fact, it seems to me that Asparagus dislikes forking and cutting about its roots. Therefore, the more surface dressing is practised the better; and the manure put on now, although it may be decayed by the spring or summer, will benefit the plants then to a certain extent by the free open mould that will be formed on the surface. Good strong manure should always be used for Asparagus beds. Light straw or leaves are of little or no use; a mixture of half decayed cow and horse manure is better, and either may be used separately. Apart from the feeding properties of the top-dressing, it also affords good protection to the crowns, and although severe weather may not kill Asparagus outright, such winters as we have lately had can do it no good if unprotected, but probably much harm.

Margam.

J. MUIR.

**Exhibition Brussels Sprouts.**—The finest and most compact strain of Brussels Sprouts I have yet seen is one known as the Exhibition strain; whether such an appellation is well chosen or not, the variety is good; at least as a garden kind it is remarkably true, and produces large Sprouts of the best and most solid kind. I have seen it growing in several gardens about Reading, but in none is it in finer form than in that at Heckfield, where its massive stems covered with heads are greatly admired. The average height of strong plants is 20 in., and the head is of a more solid kind than usual, bearing a close resemblance to that of a good curled Savoy. Under high cultivation and early planting, the Sprouts are unusually large, but with ordinary cultivation they are just of that size which suits growers for market. It will in time become very popular.—A. D.

**A word about Potatoes.**—I have tried a few of the new varieties this season, the best of which I find to be Sutton's Reading Hero. I planted 7 lb. of this variety and the produce was 262 lb. of good sound tubers grown without manure. I left them in the ground until the middle of October, when they were lifted, and they were allowed to remain on the ground another fortnight before they were weighed. I am of opinion that no Potato will retain a robust constitution and good quality more than ten years. Many varieties good in their day, but now defunct, will occur to all of us. The Lapstone Kidney is an especial favourite of mine, but it now shows signs of debility. Paterson's Victoria this year is worthless with me, and many others are going the same way. On the other hand, what a mainstay the Champion was two years ago; nothing withstood the wet, cold, unless season like it. Of course Sutton's Magnum Bonum was in its infancy at that time, at all events with me. But last season and this there has been nothing to equal it here for a general crop.—C. A. PEARSE, *Grey's Court, Henley-on-Thames.*

**Peas for early cropping.**—On November 29 last year I obtained 4 quarts of William the First, also some Early Prolific, and sowed them on an early border. William the First came up strongly and stood the winter best, and although I was able to gather the pods from both sorts on May 29, William the First produced fully double the quantity the other did, and of fine green colour and good flavour. This Pea is undoubtedly a very great acquisition for early crops.—J. H.

**Celery.**—Whilst the Dwarf White Incomparable gives the best dwarf Celery we have, there is found in the Grove White a solid massive kind, that is, if not an improvement upon the Incomparable, at



least an intermediate sort, very even, of medium height, stalks solid and hard, and closely compressed together to make one massive stem. I saw this growing the other day at Maiden Erlegh, Reading, with several other kinds, and it was the best and the most even of all. This kind should make a good market variety. This and Sulham Prize Pink are said to be the two best sorts. —A. D.

## THE GARDEN FLORA.

### PLATE CXXII.—THE PANTHER LILY AND ITS VARIETIES.

ONE of the handsomest of all the North American Lilies is *Lilium pardalinum*, and it is one of the most valuable for English gardens, as it makes itself so thoroughly at home in them, growing with a vigour surpassing even that which it acquires in its native habitat—the Sierras of California. It is one of the most variable of all Lilies, a circumstance that has led to much confusion as regards nomenclature. Our plate represents four varieties sufficiently distinct for horticultural purposes, though not botanically. As to the type, the following is Mr. Sereno Watson's description of it, as given in the last volume of the "Botany of California":—

++ Flowers nodding, large, with revolute segments.  
++ Bulbs rhizomatous.

6. *L. pardalinum*, Kellogg.—Rhizomes thick and branching, forming mat-like masses of roundish oblate bulbs, the scales jointed near the base; stems 3 ft. to 7 ft. high; leaves usually in three or four whorls of 9 to 15, scattered above and below, narrowly lanceolate and sharply acu-

many, racemose or the lower in whorls, or long spreading pedicels; segments 2 in. or 3 in. long and 6 to 9 lines wide, lanceolate, strongly revolute, bright orange-red with a lighter orange-

producing from twenty to thirty flowers on a stem 5 ft. to 8 ft. high, but the flowers are individually smaller and paler than in the other varieties.



Bulb of *Lilium pardalinum*.

centre and large purple spots on the lower half; stamens and style a third shorter; anthers red, 4 or 5 lines long; ovary, 12 to 14 lines long; capsule narrowly oblong with acutish angles,  $1\frac{1}{2}$  in. long or more, umbilicate at the summit.—Proc. Calif. Acad. ii. 12; Baker, l. c. 242. *L. Californicum*, Lindl.; Florist, 1873, t. 33, *L. superbum*, var. *pardalinum*, Baker, Journ. Hort. Soc. 1873, 45. *L. Canadense*, vars. *pardalinum* and *Californicum*, Bolander, l. c.

From Central California probably to Oregon, in the coast ranges and foothills of the Sierra Nevada to an altitude of 4000 ft., on stream-banks and in wet localities; the variety on moist slopes in the lower foothills. Roel's reported locality for the variety (mountains of Utah) was doubtless a mistake. It has also been found in the Santa Cruz Mountains (Hartweg) and in Humboldt County, Kellogg.

Thus it will be seen that the variety *californicum* of Lindley is considered to be synonymous with *pardalinum*, which, however, English horticulturists dispute. The classification of the varieties given in Elwes' monograph of the genus quite accords with our own observations with the exception of the form *Robinsoni*, which Mr. Elwes considers synonymous with the type; whereas, wherever we have met with it it has been much more robust in growth than the type, the flowers finer and the colours deeper.

The varieties here mentioned are:—

1, *ANGUSTIFOLIUM*, distinguished by numerous flowers, lanceolate leaves about 5 in. long by 1 in. broad, usually whorls of eight or twelve; but the whorls are often broken and the leaves scattered. Perhaps the commonest form in gardens.

2, *OCCIDENTALE*.—Near the last, but with narrower, more pointed leaves, twelve to fifteen in a whorl, the perianth divisions wider, longer, and more open than in the last.

3, *ELLACOMBEI*.—This resembles the last two more than the type, and is distinguished by the whorls of leaves being almost invariably double. Each whorl contains about twelve to twenty-four leaves in two series. Flowers fifteen to twenty days later than the others. Known also in gardens as the variety *Michauxi*.

4, *PALLIDIFOLIUM*, called also *puberulum*. This is distinguished by its short, blunt, spatulate leaves, which are of a paler green than those of the other varieties. It is very floriferous,

All these forms are sufficiently distinct to merit varietal names, and *Robinsoni* should be added, as it is the strongest grower of all having, when grown in good soil, stems from 7 ft. to 9 ft. high, and possesses a noble habit of growth. This variety is represented on the plate by the topmost flower; the lowermost is typical *pardalinum*, that with the small spots is *pallidifolium*; while the small flower opposite is *Ellacombei* or *Michauxi*.

**CULTURE.**—The Panther Lily is one of the most satisfactory of all Lilies to grow; it has a strong constitution, increases rapidly, soon becomes established, and rarely pines away as many other kinds do. It likes a deep, light, peaty soil enriched with plenty of decayed manure and leaf soil, and seems to thrive best in partial shade, where the roots can receive ample moisture, conditions satisfactorily carried out in the Hale Farm Nurseries, Tottenham, where the sketch from which our plate was prepared was drawn last August. Dr. Bolander, of San Francisco, thus describes the natural conditions under which this Lily grows: "Proceeding eastward," he says, "along a stream into the interior, to a point where the coast climate changes gradually into that of the inland-coast valleys, and where an abundance of sunshine and shelter is added to that of moisture, we find the beautiful *L. pardalinum*. Here in deep recesses on the banks of streams, in such favourable localities, the plant attains a height of from 6 ft. to 9 ft.; here its rhizomatous bulb ramifies and multiplies rapidly, forming clusters several feet in diameter. Stems shoot up, side by side, from every terminating point of the ramifying and radiating bulb, giving the plant a gregarious appearance. Perhaps nowhere in this State is this gregarious character so well and plainly exhibited as in the Bear Valley on the Sierras, at an altitude of 4000 ft., where acres of a wet meadow are densely covered by this magnificent Lily. The whorls are here usually broken up, and the large leaves are indefinitely scattered all over the huge stems, which are variously branched, bearing numerous flowers, with strongly recurved perianths of a bright yellowish-red colour, copiously spotted with purple spots on the face. But if we proceed from the inland-



*Lilium pardalinum*: showing habit of growth.

minate, 3 in. to 7 in. long and 3 to 12 lines broad, deep green, thin and faintly 3-nerved, glabrous and glaucous, as also the stem; flowers few to











coast valleys farther eastward, and enter the large valleys of the interior, where the climate is hot and the air dry, we soon lose sight of this plant, even on the banks of the streams. Crossing these valleys, and ascending the foothills of the Sierras to an altitude of from 2500 ft. to 4000 ft., we meet it again in all its glory in wet localities. Growing in wet boggy soil, mostly subject to overflowing at some time during the year, its bulbs are imbedded but a few inches beneath the surface of the soil."

As regards the character of the bulb, it is distinct from that of most other Californian Lilies that have a rhizomatous growth, as may be seen by the annexed woodcut. It is advisable to divide the masses of bulbs every few years, as they increase so fast that they become overcrowded.

W. G.

## BOOKS.

### EUROPEAN FERNS.\*

For many years there has been no group of plants so popular among all classes of the community as Ferns, more so in Britain probably than anywhere else on the globe. In conse-

quence, the Fern literature of this country has been varied and extensive, from the high-class and expensive scientific works of Hooker, Baker, and others to the popular shilling treatise. From their nature, descriptions alone are insufficient, and, to be properly determined, Ferns require illustrations of the complete frond, if not too large, with enlarged drawings of the more minute parts to distinguish one species from another, especially when they closely resemble each other. There has been no lack of such works, commencing upwards

of half a century ago with the magnificent and still unsurpassed folio plates of Hooker and Greville ("Icones Filicum") of a strictly scientific nature, to the work now before us, Britten's "European Ferns," which is more adapted to the popular taste. This is the first work that has been devoted to European Ferns alone, if we except Dr. Milde's work, which, however, includes Asia Minor, Siberia, and the Atlantic Islands, a strictly scientific work with Latin descriptions. Our energetic cousins in America have gone ahead of us in this as in many other respects, in the publication of the Ferns of North America in two handsome 4to volumes by Professor Eaton, of Yale College, containing beautifully executed coloured plates and descriptions of all the species as yet discovered on that continent. This is a work which cannot be too highly praised, both as regards the fidelity of the plates and the descriptive letterpress. In Europe only seventy-three species have as yet been discovered, forty-five of which are found in Great Britain, while in North America there are 149 species figured by Eaton, and in British India and Ceylon no less than 663 are figured and described in Colonel Beddome's works, showing

graphy, however (p. xxxv.), we observe that he speaks of three of Sir W. J. Hooker's works as specially deserving of notice, omitting his earliest and one of his most important, viz., the "Icones Filicum" mentioned above. The 240 plates of which it consists are from the pencil of the highly accomplished cryptogamic botanist and artist, Dr. Greville, and it will, without doubt, continue a standard work of reference for many years yet to come. We also think that the name of Mr. E. J. Lowe, of Nottingham, should not have been passed over. Although his descriptions and references are not always to be depended upon, Mr. Lowe has done much to popularise the subject in his "Ferns, British and Exotic," "New and Rare Ferns," and "Our Native Ferns." Although we differ from him to a considerable extent—particularly as to his excessive multiplication of varieties of British Ferns—we certainly think he deserves credit for what he has done. The coloured illustrations in these works, representing probably about 800 species, besides many woodcuts, are usually faithful, giving a good idea of the plant.

Passing from the introduction, we enter upon the book proper, in which the author enumerates and describes the various genera and species found in Europe. A general description of each genus is first given, together with its geographical distribution, mentioning also any extra European species that may be thought interesting to the reader. The Tartarian or Scythian Lamb may be taken as an example under *Dicksonia*, a genus consisting principally of Tree Ferns. Early travellers in the East brought strange tales of lambs actually growing out of a plant, which, on the truth becoming known, turned out to be, like the story of the three black crows, only something resembling a lamb. The Fern from which the fable arose is grown in our hothouses under the name of *Dicksonia* or *Cibotium Barometz*, the full-grown caudex of which, covered with long silky hairs resembling wool, can, when manipulated, be made to bear a rough resemblance to the animal named.

After the description of each genus the author proceeds to enumerate the species. The descriptions are fully and clearly given, although the language used in doing so is perhaps more technical than may seem suitable for a popular work, yet it cannot well be avoided, and with careful study of the first few pages of the introduction it may readily be mastered. Some of the species have been only recently discovered, and beyond the bare description and localities where found there is little to remark, but with the better known sorts there is much to be said. It is known that many of these entered largely into the pharmacopœa of our forefathers, although for the most part now discarded, and on this subject our author gives much information, going even so far back as Pliny and Dioscorides. The folklore and traditions connected with Ferns are extensive, and the author enters largely into this part of his subject, *Pteris aquilina* (the common Bracken) alone furnishing material for nearly eight pages. Much information of a curious and interesting nature is given, but for this the book itself must be referred to.

We are sorry that we cannot speak so favourably of some of the coloured illustrations, which the prospectus says "specially characterise" the work. From the attempt to show large plants on a comparatively small page they give little idea of the plant itself, and in several instances these so resemble one another, that it is difficult even for an experienced eye to distinguish them. The enlarged fragments, however, are well done, and show what is meant. The same remark applies to *Davallia canariensis*, which, owing to its reduced



*Asplenium lepidum*; native of Sicily.

marked paucity of Ferns in Europe as compared with other continents. Britten's "European Ferns" opens with a very comprehensive introduction, treating of Ferns in general, their structure, classification, geographical distribution, cultivation, and propagation, economic properties, preservation for the herbarium, bibliography, and geological distribution. This portion of the work extends to forty-four pages, and contains an immense amount of information well worthy of careful perusal, either by the tyro or the more advanced student. Indeed, it forms quite a text book of itself, and shows the author's intimate acquaintance with his subject. In the biblio-

\* "European Ferns." By James Britten, F.L.S., with coloured illustrations from Nature by D. Blair, F.L.S. Cassell, Petter, Galpin, & Co., London, Paris, and New York.



scale, much more resembles some of the smaller species than that for which it is intended. Several of the other plates, too, would have been improved by being less crowded, especially the Woodsias, the small Aspleniums, and the Ceterach.

It must not be thought, however, that we have formed an unfavourable opinion of the coloured illustrations as a whole, for many are highly characteristic of the plants they represent. Among these may be mentioned *Cystopteris* (particularly good), *Cheilanthes*, *Ophioglossum*, and *Botrychium*. Unfortunately, we cannot give the numbers of the plates—there being none. These are the more necessary, as in one or two instances they are far removed from the descriptive letterpress, *Athyrium Filix-femina*, for instance, being made to face the description of *Scolopendrium*. *Lastrea æmula* also is named *Lastrea Fœnisecii* on the plate, causing perplexity to those unacquainted with the synonyms. A couple of pages of these at the beginning or end of the book would have been of considerable assistance. Had there been references to the plates throughout the text the task of the seeker after knowledge would have been much simplified. We think it an omission, too, that *Lastrea dilatata* and *Polystichum angulare*, two of the commonest Ferns in England, are unrepresented, except by fragmentary woodcuts of some of their varieties. It has apparently been considered sufficient to give their near allies, *Lastrea spinulosa* and *Polystichum aculeatum*. The author only touches slightly on the varieties of British Ferns, but rightly so, we think, the subject being too extensive, and requiring at least a volume to itself.

Besides the coloured illustrations, there are various woodcuts scattered throughout the work which will materially assist in determining any doubtful species. Of these we herewith publish examples. There is an evident error, however, in that named *Cystopteris montana* on p. 26, which seems rather to resemble the upper portion of the frond of *C. fragilis* variety *semipervirens*. One or two slight errors in the text should be corrected. At the top of the same page, *C. alpina* should be *C. montana*, and at the bottom of page 155 *Lastrea rigida* is said to grow at an altitude of 15,000 ft., meaning 1500 ft. A little more uniformity might also have been observed in the headlines—sometimes the English and sometimes the Latin being used, without any apparent good reason.

A work of this sort, although written in a popular style, must necessarily contain many scientific terms, and at first sight a glossary would seem to have been an omission. The explanation, however, of any terms not commonly known to the English reader will be found in the first few pages of the introduction, and the unusually copious index contains all needful references.

Notwithstanding the defects noticed—which on the whole are not very serious—we can thoroughly recommend the work as a popular guide to the Ferns of Europe, and trust that it may have the large circulation it deserves. Like all Messrs. Cassell's publications, it is got up in a superior style, and it will no doubt pass through many editions.

**The late Mr. Niven.**—One of our most accomplished correspondents writes, "So poor Niven is gone! A leaf that has dropped too soon! There are some men we never miss sufficiently till we lose them. No more pleasant scientific talks with him." We long had the pleasure of his acquaintance, and found him ever ready and willing to impart his varied and full store of plant knowledge. When we first saw him in the Hull Botanic Garden, some seventeen years ago, it was then

well stored with plants, many rare and beautiful, a reputation which the garden has kept up to the present time. From it many good species have found their way into general cultivation. It is not long since Mr. Niven sent us a very beautiful species of *Lisianthus*, which was figured in *THE GARDEN*, and our gardens are indebted to him for saving many a good thing in days when no attention was generally paid to our garden flora. It is a serious loss to horticulture that Mr. Niven should have died comparatively young—unlike his father, who was a remarkably active man when long past seventy. Although the office he was called upon to fill was not one of the highest in its class in the country, none who knew him doubted his capacity for filling as high a place as any we have. We cannot express a higher wish for the curators of our public gardens in the time to come than that they may be worthy to follow in the footsteps of J. C. Niven, of Hull.

## THE FRUIT GARDEN.

### THE APPLE.

(Continued from p. 470.)

**Marking out the orchard.**—Having the land in good condition for planting, and the trees ready for removal, we next proceed to mark out the ground by putting in a stake where each tree is to stand. The distance between the rows will be in part determined by the nature of the soil and the varieties to be planted, some kinds growing into much larger trees than others; also whether the orchard is to be entirely devoted to Apples or not, and eventually laid down in Grass, or kept cultivated and undercropped with bush or other fruits. On good land strong growing kitchen Apples should be at least 30 ft. apart each way, but if planted so that each alternate line intersects the other, or what is called the quincunx form, the distance may be reduced a little in the row, and between the rows as the heads, growing nearly circular, get proportionately more space in which to extend before meeting. In this locality the straight line system is most in favour, for even when planted up with bushes 6 ft. apart each way, the plough, harrow, or the horsehoe may be easily used, thereby obviating the expenses incurred by manual labour. On the quincunx plan the distances may be 24 ft. apart each way, which takes three rows of bush fruits between each row of trees; in fact the distances are arranged to suit bush fruits. Thus dwarfs are planted 12 ft. or 18 ft. apart with one or two rows of bushes between them, and standards 24 ft., 30 ft., or 36 ft. apart. I find it advantageous to plant alternate rows of sorts that form large spreading heads with such as either make little wood or are of erect habit of growth. For example, Blenheim Orange and Graham's Russet, which form very fine trees, may be alternated with Golden Pippins, Ribstones, or Margils, that do not take up half so much space, and that will be all the better for the shelter afforded by the stronger growers. I would particularly recommend keeping the sorts together—either a row or portion of a row according to the quantity required; it saves a good deal of labour in gathering to be able to go straight down a row instead of carrying the ladders about in order to discover each particular sort; the hardiest kinds should be planted on the exposed or boundary rows. Here we generally plant the Goff Apple or Northern Greening outside as a screen for tender dessert sorts. But whatever distance is decided on it should be borne in mind that there is nothing gained by overcrowding, by which the undercrop soon gets robbed of the necessary light and air; and as the trees approach mature age, if there is not sufficient space, the fruit on the lower

branches will be deficient both in size and colour and comparatively worthless for market, as it is only the best examples that can be grown of their kind that are remunerative. Second-rate fruits are in but little demand, and they only tend to lower the character of home-grown produce. I may mention that the straight-line system of planting can only be recommended on the score of its offering greater facilities for horse cultivation than the quincunx, and all growers are unanimous as to the beneficial effects of keeping the surface frequently stirred, not only to keep down weeds, but also for the sake of aerating the soil. If the orchard is not planted up with bushes, it is found advantageous to keep the soil cultivated and cropped for a few years with Potatoes or some other vegetable that permits the land to be manured and cleaned. The young trees undoubtedly make more rapid progress if the surface is cultivated, manured, and well done by for eight or ten years after planting than if laid down at once in Grass. After that period there can be no question that it is best for the trees in every way to sow the land down with a good mixture of permanent Grasses, for if fed off closely with sheep, the surface soil gets thereby well enriched, and the trees are healthier and more prolific than if continued cultivation is carried on, and the produce is sounder and keeps longer.

**Mixed fruit gardens.**—Besides orchards on Grass, vast quantities of Apples are grown in what may be called ordinary fruit gardens, i.e., gardens kept regularly cultivated and undercropped with Nuts and bush fruits. The best way of planting these is to have rows of tall standard Apples 30 ft. apart, with an intermediate row of dwarf spreading bush trees planted in quincunx form, so that they get all the light that falls between the branches of the tall standards, the shady portions being filled generally with Cob Nuts or Filberts. Some kinds of Apples are especially adapted for dwarfs—Keswick and Manks Codlin, Lord Suffield and King of the Pippins being especially prolific when spurred in closely. This mode of planting is preferable to having the trees all on stems of one height, and where the land is entirely devoted to Apples, it is surprising the quantity that may be grown per acre, provided the trees are well supplied with manure, for even when spring frosts cut off the taller trees the lower and more sheltered ones generally escape.

**Trained trees in gardens.**—During the last few years the old-fashioned standard Apple tree has been rapidly disappearing from kitchen gardens, the tendency now being towards having fruit and kitchen gardens separate, and as the old trees are rooted out the orchard or hardy fruit garden is slowly, but surely getting to be looked upon as an indispensable adjunct to every well arranged establishment. The only Apples in kitchen gardens are those worked on Paradise stocks, as in that way they are more fruitful and occupy less space than those on free stocks that resent the hard pruning necessary to keep them within bounds. The old-fashioned espalier trees planted 30 ft. apart are now replaced by much more fruitful trees on the Paradise stock planted 15 ft. apart, these having the growth more equalised for fruit buds instead of useless spray, and a notable improvement is the substitution of stout wire trellises for crumbling stakes, the wires being easily tightened with the raidisseur. About seven shoots are trained, as in the ordinary form of espalier, horizontally until the lower ones come within 1 ft. of each other; they are then turned up and trained vertically, so that each shoot is about 1 ft. apart, and the lower tier of branches keeps as vigorous as the others, and the trellis becomes much quicker covered than



by the old plan. Dwarf pyramids 12 ft. apart make a good background for little bushes that may be successfully grown at 6 ft. apart, the soil of course being devoted exclusively to their roots, these surface rooting stocks depending very much on food being continually supplied to them in the shape of top-dressings. Single cordons may be planted 6 ft. apart for forming



*Actinopteris radiata*. Tropics of Old World. (See p. 527.)

edgings to fruit-tree borders, and double cordons 12 ft. apart. On walls when trained as oblique cordons they are planted about 18 in. apart, and if one has good trained espaliers of the form just described, they may be transferred to the wall which may thus be quickly furnished with bearing trees. If trained with seven branches they must be put in 15 ft. apart, or if with five branches 10 ft. apart will be sufficient, and if trained up to full bearing size on stakes a great saving of wall space is the result.

**Planting.**—Everything being in readiness, the trees must be carefully lifted; take out a circular trench all round the tree two spits deep, so as to get well under the roots, and for the purpose of getting them out as entire as possible steel forks should be used. If to travel any distance, care must be taken to bind the trees together with soft packing, such as hay or straw ropes, so that they cannot rub or chafe in transit, for neglecting this simple precaution is frequently the forerunner of canker. The roots must also be protected from the drying effects of the atmosphere, especially the young tender rootlets, which are the first to lay hold of the soil as feeders. When the roots are long unprotected, it need surprise no one if the trees start badly, for they have to make fresh rootlets before they can make any progress; therefore, be careful that neither the roots nor stems sustain injury. As soon as young trees are received from the nursery see that they are securely laid in by the heels, and in planting begin with the hardest or latest flowering sorts. First of all with a sharp knife cut all broken or lacerated roots back to where they are sound and healthy, dig out the holes even on well trenched soil larger than the roots will fill, and leave the soil rather higher in the middle where the tree is to stand than at the sides, so that the roots may slope gently downhill. If the soil is loose and liable to settle down, raise the tree a little above

the level of the surface, so that when consolidated it may stand at the same depth at which it did before removal. The roughest soil or turf having been placed below the tree, proceed to fill in some nice fine loam or fresh maiden earth about the roots, gently shaking the tree that the finer particles of earth may work in close to every fibre, spreading out as the work proceeds all the roots towards the extremity of the hole, and about equally all round, but if any difference is made the strongest should be towards the side most exposed to the wind. Then fill in with soil to the desired height, consolidating all well as the work proceeds. The best condition of soil for planting is when it is neither sloppy wet nor dusty dry, but just moist enough to work well with the spade or fork without clogging. It can then scarcely be trodden too firmly. Although fruit trees delight in a good depth of friable earth, they do not like it too loose. When that is the case the growth is soft and pithy; land therefore that has been deeply cultivated will be improved for Apples by being pretty well consolidated about the roots, merely keeping the surface friable to prevent it from cracking.

**Top-dressing.**—This should be done directly the trees are planted, for in addition to its keeping the soil in a more equable state as regards moisture, it prevents latent heat from escaping, thereby encouraging root action. Its surprising how much frost a covering of 3 in. or 4 in. of partially decayed manure put on, say, in October or early in November, will keep out of the soil, and trees thus mulched will start vigorously in spring. As the top-dressing decays it will gradually get incorporated with the soil, and become food for the tender rootlets that require feeding on the surface to keep them from descending into cold or ungenial subsoils. This is more especially necessary where the Apple is liable to canker, but it will well repay the trouble of applying it, even in the most favoured localities. It is not absolutely necessary to supply rich farmyard manure for this purpose, for if the land is freshly broken up the trees will probably grow strong enough at first, but partially rotted thatch or straw, leaf-soil, or such vegetable substances as will eventually become available as root food. Be careful, however, to avoid such as contain the seeds of Docks, Nettles, and other coarse-growing weeds.

**Staking and protecting the stems.**—In the case of tall standard trees, with stems from 6 ft. to 7 ft. in height, staking is of the first importance, and no time should be lost in getting them thoroughly secured, as wind-waving is not only to be dreaded for the damage that may arise to the head and stems, but also to the roots, which cannot make progress while there is such a strain upon them. The ordinary mode of driving one very large stout stake, at least 2 ft. into the ground and about 3 in. from the stem,

answers very well in cultivated gardens, but if sheep and cattle are to be admitted, as is the case with orchards on grass, a more substantial protection must be provided, and for this purpose either a square or triangular fence must be built up at least to the height of the stem, and 1 ft. away from it at the base, and rather more at the top; besides strong corner posts there must be durable rails of Chestnut or Oak which will last for many years, and if the stem is first cased with haybands, and then tied crosswise in both directions, there will be no possibility of its getting chafed; with single stakes, if the ties break, the head is liable to blow about and the bark gets bruised by coming in contact with the sharp edges of the stake. The fences just spoken of can also be made rabbit-proof in places where game abounds by fastening one length of small mesh wire netting round the base, for although rabbits or hares may not be numerous or show any inclination to bark the trees while green food is plentiful, yet it is quite different if snow lies long on the ground; then they will quickly bark all the young stems within their reach, and do the trees irreparable injury. Therefore, it is best to have prepared strips of wire netting, just large enough to enclose the stem, and they may be spliced together and fastened to the stake, care being taken to remove them and replace them by larger pieces before the stem swells up tightly to them. Birch brushwood is largely used for covering the stems of young fruit trees. It is cut in the autumn as soon as the foliage drops, as if for broom making, and is applied at once. After the trees are staked, take a good armful of Birch, place the butt ends of it on the ground evenly round the tree, and tie it firmly with tar cord or twine, and neither sheep nor game will bite it. Then proceed to regulate it round the stem, adding more Birch to reach its top, and tie securely at about every foot distance. As this gets dry and hard by exposure it makes an excellent safeguard, and if examined every autumn, and fresh ties, and a casing of fresh Birch put on, it forms a cheap and substantial shelter for years. As regards half-standards or dwarfs, if they are not in exposed situations they need not be staked, and unless game is likely to injure the bark there will be no necessity on cultivated ground for



Seedlings of Hart's-tongue Fern. (See p. 527.)

applying any remedies against barking the stems. But when planted thickly, as dwarfs usually are, it will be best to have a rabbit-proof fence all round the enclosure, as besides the stem they will bark all the lower branches within reach. As regards wall trees, trained trellis trees, or cordons, I find it best to have them quite loose the first season, leaving staking, tying, and



training to be commenced the following year. They should, however, be top-dressed and treated in other respects as advised for orchard trees.

**Pruning freshly planted trees.**—This is an operation on which very different views are held. The custom of cutting freshly planted trees down pretty closely has been practised so long that many feel convinced it must of necessity be right; nevertheless many very successful cultivators have of late adopted a totally different plan; they leave the shoots entire the first season, and my own experience is decidedly in favour of doing so, for the trees make a much larger proportion of leaf growth, and this causes corresponding activity in the roots. Therefore, where the roots are in proportion to the top growth when planted, as they will be in young plants that are carefully lifted and replanted, I would decidedly recommend leaving the top growth entire. Trees thus treated will be found to make far more rapid growth when cut back the following year than those that are severely checked both above and below ground at one and the same time; for however carefully they

level, they may be securely fastened to their trellises and pruned back to the well ripened wood, giving to each the outline of the form which it is desired to take, always bearing in mind that the cuts to heal over quickly should be done with sharp tools. There is nothing like a good stout knife with a keen edge that will cut close to the stem when it is desirable to remove a branch entirely without injuring the bark of the portion to be left. Where snagged or notched pieces are left by careless pruning that cannot heal over, they generally die back and become the forerunners of unsound wood.

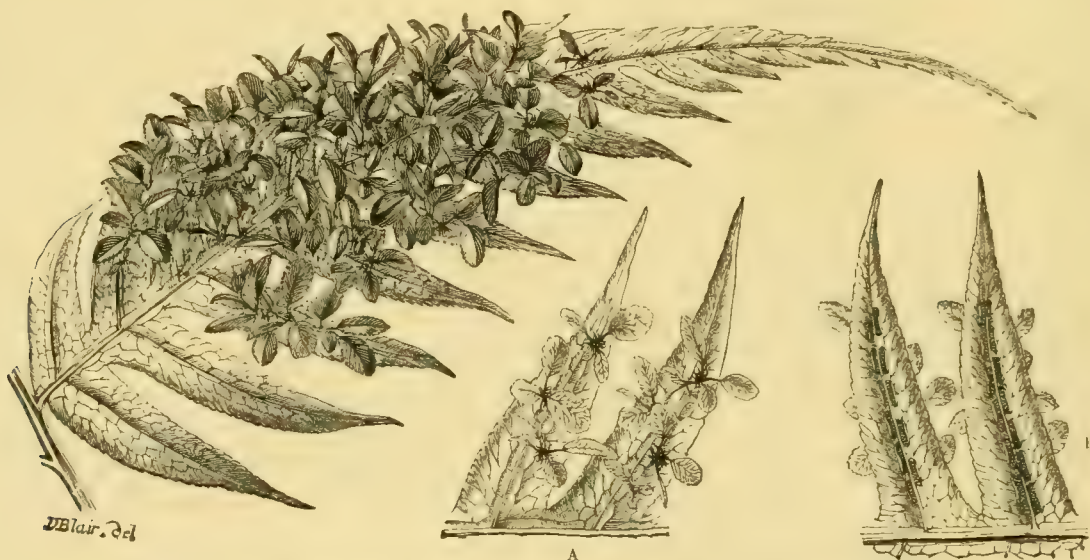
JAMES GROOM.

#### COLOURING GRAPES.

HEAVY cropping will, in many instances, account for bad colour, and it will also account for the debilitated condition into which some Vines have fallen, though not more than 10 or 12 years old. To spoil what would otherwise be a very creditable house of Grapes through want of thinning is a matter to be regretted, yet this is often the case.

under this treatment I manage to colour Mrs. Pince's Muscat as well as most people. Overcrowding I look upon as another source of failure. I may be wrong, but for all, except the earliest vinery, I think the rods should be at least 4 ft. apart, and 5 ft. is not too much, for I am satisfied if you cannot grow large leaves on your Vines you cannot have large, well-coloured bunches, and you cannot grow any number of large leaves where the Vines are at a less distance than that just named.

**Laterals.**—I have made it a point to notice the condition of the lateral growth in all the vineries with which I am acquainted, and although I have seen some good coloured Grapes under a close system of pinching the laterals, I have remarked a far greater number with altogether better crops where the Vines have been 4 ft. and 5 ft. apart, and the laterals allowed to extend themselves. The removal of a large number of lateral growths at one time is, I believe, fraught with much danger to the crop, for to produce this lateral growth there must have been called into existence a corresponding number of fresh roots; now we can cut away the laterals, but we cannot get at the roots to cut them if we would. The roots, there-



Portion of front of *Woodwardia orientalis*: A, under; side of pinna; B, upper side of pinna. (See p. 527.)

may be transplanted the small feeding roots or spongioles must necessarily be broken. As regards pruning, modern ideas have greatly modified the necessity for such repressive measures as were formerly in vogue; in fact pruning is now looked on as a necessary evil, and the less it is employed the better; Apple trees especially are liable to resent anything like severe pruning. In no case should any but small wood be cut off Apple trees, or such scars formed with knife or saw that will not heal over the following season; with standards I would leave the shoots full length the first year, and prune back to the firmly ripened wood the following autumn. Pruning and replanting, potting or in any way causing much disturbance to the roots is now looked upon as mistaken practice. Pyramids, cordons, espaliers, and even bushes on the Paradise stock require but little pruning at any time, and most of that can be better done by pinching while the shoots are soft and green than at any other time. If the trees to be planted have been carefully tended in this respect they will be best left till they are in active growth before any pruning is attempted. In the following autumn when the soil has become consolidated and the roots settled down to about their permanent

There are many who will think that "Peregrine's" recommendation (p. 433) of 1 lb. to the foot of rod is preposterous waste. This I judge from what I have seen; but where I have observed that point exceeded to any considerable extent, the fruit has been of an indifferent quality as regards colour. Therefore, I say "Peregrine" is right. Whence comes colour in Grapes is, however, a question which more immediately concerns us; and, although I do not claim to know its exact source, I am, from my own observation, convinced that several favourable conditions are required in order to secure it in full proportions, such as we like to see it on our Grapes. If from any cause the Vine is enfeebled, either through the roots being in unsuitable soil or in a dry border, the crop will not colour well. If too many bunches are left to form the crop, or if insufficient leaves are left, through the removal of too many laterals, the result will invariably be badly-coloured fruit, and if the Vines are overcrowded the same thing occurs. Any of these conditions will, I believe, account for the non-colouring of Grapes; but amongst them feeble root action is perhaps the worst. The latter may arise through the injudicious removal of the lateral growths at a critical time in the growth of the Vine. I remove but little lateral growth from the time the berries begin to stone until they are nearly ripe, and

fore, are left to do the best they can, and what can they do? seeing that which brought them into existence is removed, and so a hitch occurs somewhere, and the result probably is shanked or badly coloured berries. I do not mean to say that any danger attends the judicious removal of laterals—that is to say, if the Vines are looked over and they are removed once or twice a week. It is when left for three or four weeks, and the laterals are brought out of the house by barrow-loads, that I apprehend danger.

**Top dressings.**—In another paragraph "Peregrine" alludes to the Cole Orton Vines. I never was at Cole Orton, but I saw the Grapes that Mr. M. Henderson used to exhibit at the London shows from there, and of course, like others, I admired them, but I think we have heard about enough of these Vines as well as those at the Dalkeith Parsonage. These two instances may be rightly set down as exceptional cases, and not as examples of superior cultivation. Local influence somehow must be at work in both these cases; mere surface dressings will not account for their long years of prosperity; and if we knew the nature of the soil, and could trace the roots to their happy pasture-grounds, we should probably find them luxuriating somewhere out of the reach of surface feeding. When conditions are favourable, few subjects are



easier to grow than Vines, and if surface feeding would do as much for all Vines as is claimed for it in the cases referred to, "Peregrine" would not only have had the opportunity of pointing to the Cole Orton Vines only, but to hundreds of others, because surface feeding is well known and practised by most good Grape growers. Besides the Cole Orton Vines, "Peregrine" must remember the fine Grapes that Mr. Drewitt, of the Denbies, and others used to send to the London shows; but how long did they maintain their position as leading exhibitors? Why, for a few years only. They retired, not from choice, but from necessity, because other growers came up who had younger Vines and were able to beat them. If surface feeding would prolong the vigour of Vines, how is it that when once one has obtained the lead he does not keep it for more than a few years? I maintain that it is because his Vines cannot bear the strain put upon them. I must not, however, be understood to say that surface feeding is of no value, because I believe it is capable of doing a vast amount of good; all that I wish to say in reference to it is that it does not do all that is claimed for it in the particular cases brought to our notice.

J. C. CLARKE.

**Cutting down Raspberries.**—In answer to "S. K." (p. 510) regarding the cutting down of newly-planted Raspberry canes, I may mention that I had had occasion to make a new plantation some four years ago, and the following is the way in which I proceeded: The ground to be planted was trenched 2 ft. deep, and liberally supplied with manure. The canes for planting were obtained from an old plantation, selecting such as had as many young roots attached to them as possible. They were planted in spring, at a distance of 4 ft. plant from plant, the intention being to work them on the stool system, with a stout stake driven into the ground to tie the canes to. With the exception of topping the canes, they were not cut down, and only two or three died; the others threw up fine suckers, and the break of Raspberries is now all that could be desired. Although I adopted the stool system, for reasons I need not state, I am of opinion that the trellis mode of management is decidedly the best. Raspberries delight in a rather damp situation and in a strong, well-manured and well-drained soil.—A. MACKIE, *The Woodlands, Darlington.*

**Outdoor Grapes.**—The discussion recently carried on in THE GARDEN reminds me of a picturesque village in Berkshire, where one may see cottagers vieing with each other in the culture of the Grape Vine. As prizes were given to cottagers at the annual exhibition for fruit and vegetables, that fact may have induced more to grow Grapes than would otherwise have been the case, but I can testify both as to quantity and fair quality in regard to the crops obtained from Vines grown on the southern side of the cottages. The Grapes thus produced were chiefly made into wine. Black Grapes were not much grown, as it was found that these hardly ever ripened well, unless the season was very favourable. Young men from the neighbouring gardens used to prune the Vines, and otherwise help the cottagers a little in regard to their culture. It would not do to plant Vines indiscriminately in any part of the kingdom, but it is my belief that much more might be done with outdoor Vines than is the case at present, i.e., in favourable localities.—J. S. T.

**Resting Vines.**—If successful Vine culture is aimed at, too much importance cannot be attached to giving it a period of rest. It ought at least to have two months' perfect rest, and if more can be given so much the better. Where bedding or other plants have to be wintered in the vinery, as occurs in many places from want of room elsewhere, it is impossible to give Vines a proper resting time, as the temperature which such plants require tends to keep up a state of constant agitation on the part of the Vine. Therefore, when spring time comes, Vines rested under such conditions break into growth quickly and make rapid

progress, pushing out long-jointed laterals. The foot-stalks of the bunches also become drawn out, and the bunches themselves have a loose, straggling appearance. This debility in its truest form, and if allowed to go on the Vines will degenerate from year to year. Vineries should be emptied of all plants that will not stand frost while the Vines are at rest, and air should be kept on the house night and day, unless the weather is very severe; 10° of frost will do no harm. The practice of shortening the laterals to within two eyes of the base just before growth has ceased, in order that the remaining energy may be directed into the bottom bud, so as to induce it to plump up and become prominent, is a mistake. Any attempt to increase the size of this bud and make it stand out more prominently will end in failure; it will start into growth, and that at a time which is ruinous to the Vine. It reminds one of trying to make up a bad day's work when night comes. There may be something in pruning piecemeal, but that I cannot say; it is what I never practise. I always prune right back to the base at once, and can with confidence recommend the system.—A. MACKIE, *The Woodlands, Darlington.*

**Influence of the stock.**—Mr. C. M. Hovey, of Boston, performed many experiments to determine what influence, if any, the stock has on the graft. He never found the Bartlett to become earlier by grafting it on the very early sort known as Amire Joannet, or later by grafting on the Vicar of Winkfield. He had grafted Clapp's Favourite on Jargonelle, Dix, Beurré d'Arenberg, Columbia, Glou Morceau, Beurré Diel, and Flemish Beauty; Dana's Hovey on Gustin's Summer, Harvard, and Vicar of Winkfield; and Bartlett on Winter Nelis, Easter Beurré, Green Chisel, and Onondaga, without changing the season of ripening in the least. In every instance each variety retained its identity, and each was still respectively a Clapp's Favourite, Dana's Hovey, and Bartlett. To this we may add that after grafting many thousands of different sorts on various stocks, and seeing many thousands of Pears bear in orchards, we never saw as much change produced by the stock as was effected by soil and cultivation, the latter changing fruits so much that good judges scarcely recognised them. And still more—there never have been such variations, or so many, in obtaining permanent changes by grafting on dissimilar stocks as have taken place by means of "sports" without an intervention of either budding or grafting.—*Country Gentleman.*

## SHORT NOTES—FRUIT GARDEN.

**Vines for late vinery.**—G. C.—The best six Vines for your late vinery would be two each of Lady Downes, Alicante, and Muscat of Alexandria. There are several others that might do well, but with anything like good treatment these sorts are certain to give satisfaction.—W.

**Gooseberries.**—G. C.—The following are all good kinds of Gooseberries, the first six for flavour, the last six for size, viz.: Rough Red, Red Champagne, Ironmonger, Whitesmith, Rumbullion, Yellow Champagne, London, Thumper, Wonderful, Dan's Mistake, Top Sawyer, and Roaring Lion.—W. W.

**General Todleben Pear.**—The fruit of this from two pyramidal trees here is similar in character to that of "J. C." p. 509, i.e., they all go at the core in the first week of November. To such an extent does this occur, that I could not furnish a single dish of it of good quality. Last year it was of the same character.—G. T., *Danson.*

**Judging fruit.**—In doing this all qualities are taken into consideration, and if Mr. W. Little (p. 510) wants to be placed on the top shelf, he must have size, colour, bloom, and, above all, good flavour. In Grapes the bunches must be uniform in size, good in colour, bloom, and flavour, regular in berry, and well shouldered.—JAMES SMITH, *Waterdale.*

**Gathering Apples too early.**—A good many of the best kinds of Apples in the market are half spoiled owing to being gathered too early, and possess neither the flavour nor texture they should if gathered at the proper season.

## GUNTUN PARK, NORFOLK.

As this noble demesne has been noticed more than once in THE GARDEN, I now purpose merely noting a few features which struck me most forcibly on visiting it this autumn a few days after the late gale. Being within four or five miles of the coast, it felt the full force of the storm, and the park, home woods, and pleasure grounds were thickly strewn with wrecked and prostrate trees. Here, as elsewhere, it was found that the trees that refused to come up by the roots were broken right off; but as the soil is rather light and shallow the majority were torn up by the roots. In a belt near the lodge leading to the main road to Cromer, the Scotch and Silver Firs and other trees were wrecked in the most wholesale way; while in the more sheltered pleasure grounds some magnificent Silver Firs in the unique line that forms the boundary of one of the main walks were torn up by the roots. These are the finest Silver Firs I have seen. The soil and climate of Guntun seem admirably adapted for the growth of these trees, as well as for Scotch Firs and other Conifers. The park is very large and well furnished with deer. Instead, however, of the latter having the whole range of it, it is divided into, I think, four equal divisions; thus the deer have a change of pasture, and a good proportion can be made into hay or devoted to other purposes.

**Flower gardens.**—The house is approached through and also supported by a flower garden. The first, which lies between the mansion and the church, consists of a series of detached beds, bordered by shrubs and trees. The second is a more formal garden, supported by a terrace and retaining walls. These walls and a large portion of the mansion are clothed with Clematises, Roses, Jasmines, Ivy, and other climbers. Prominent among the latter is a fine plant of the Claret Vine, still glowing with its crimson foliage in the end of October, and almost eclipsing in beauty some fine specimens of the Ampelopsis Veitchii that grow near it. Here, too, are some noble specimens of the Maréchal Niel Rose worked on the Banksian, which, as Mr. Allan has pointed out in THE GARDEN, keeps pace with the Maréchal, and so avoids the wart-like ball or excrescence which evidently hastens at times the death of this grand Rose. The Japanese and other Honeysuckles, Wistarias, some Jasmines and Tea Roses also do well on the mansion and terrace walls, a simple protection of tree and shrub boughs, sufficing to carry most of them safely through such severe winters as the last. The gardens and walls had up to the occurrence of the gale been in full beauty; and sufficient wreckage was left intact to enable one to judge of the general effect. The mixture of Clematis and Tea Roses seems a very good one for furnishing the walls without undue formality. The following among other Clematises are used, viz., Jackman, rubella, Prince of Wales, Lawsoniana, ascotensis, Lady C. Nevill, magnifica, lanuginosa nivea, and Sensation. Most of these are late bloomers; for earlier flowers such sorts as Miss Bateman, the Gem, &c., are used. The flower garden being somewhat formal, Mr. Allan has exercised great taste in furnishing it with grace rather than with glare. With this object in view he makes large use of the following plants: Lobelia cardinalis fulgens, of which he has a very large stock; Rudbeckia Newmanii and Funkia grandiflora. These three, in the order here named, make fine beds. Phlox Lothair, Tritoma glaucescens, Anemone japonica, edged with Funkia is another pretty combination. Anemone Honorine Jobert mixed with the scarlet has a unique and striking effect even in the last week of October. Mixed beds of Pyrethrum serotinum (a distinct and taller variety than that generally met with), mixed



with Cannas and edged with single Dahlias, had also a capital effect. *Sedum Sieboldi* is largely used for edgings, and *Tagetes pumila* has entirely superseded *Calceolarias* at Gunton. The old *Fuchsia Riccartoni* looked well in combination with *Aster pyrenæus* and *Tritoma Uvaria*.

The more formal garden in front of the house merges into a more free and easy style of planting at its extremities, and beds of mixed herbaceous plants link it on to the dressed shrubbery, the latter again losing itself in the wild wood. These beds are furnished with *Irises*, *Pæonias*, *Solidagos*, *Arundo Donax*, *A. conspicua*, *Spiræa Aruncus*, *Pampas Grass*, *Yuccas*, and *Japan Lilies*. At the other end, between the house and the church, are some fine groups of *Rhododendrons*, mixed with common white *Lilies* and other groups of herbaceous plants. Most of the memorial trees are too near other trees, and whilst the Prince of Wales has had room to grow the Princess is pining beneath the shade of an Oak, which ought to be removed forthwith if the Princess is to have a fair chance. Other parts of the ground have been recently much improved by the removal or cutting back of common shrubs, the opening out of Grass glades, and the introduction of a greater variety of shrubs and trees; in fact, the work of renovation and removal of shrubberies, and the creation of greater variety, are being skilfully carried out all over the pleasure grounds.

**Conservatories and other houses.**—Two well-furnished conservatories abut against the mansion. These were furnished with the usual plants found in such structures. On the roof of one was a magnificent plant of *Bougainvillea speciosa*; in the other was one of the finest plants of the *Lapageria alba* that I have seen. It was trained over arches, forming a sort of tent roof covered with the flowers and healthy growth and fine foliage of this useful creeper. Many of the short flowering shoots had from nine to eighteen buds or flowers on them, and it seemed as if the plant would go on flowering all winter. It is grown in rough peat, and manured freely when in full growth. As snails are very fond of the young shoots, each is led up through a glass chimney until beyond the reach of danger. In other houses in the kitchen garden I found fine healthy collections of *Calanthes*, a magnificent plant of *Zygopetalum*, showing over 100 blossoms; *Cypripediums*, *Aerides*, *Dendrobiums*, *Eucharis*, *Pantratioms*, *Gardenias*, *Bouvardias*, and *Stephanotis*. Violets were also remarkably well done—two varieties, *Marie Louise* and *Neapolitan*. These are grown on mild hotbeds in frames. Four lights of each sort furnish an abundant supply, which I can well believe, for at the time of my visit never was mead so full of Buttercups and Daisies as were these Violet frames of flowers of *Marie Louise*. These are succeeded by the *Neapolitan*, which Mr. Allan manages to flower with equal profusion and to grow to a larger size than the *Marie Louise*. These Violets are kept by linings and careful covering at a temperature of about 50° all winter. The success is complete, and the mode of reaching it deserves more lengthened notice. There were also houses devoted to *Maréchal Niel* and other *Roses*, and enormous quantities of *Souvenir de la Malmaison* and *Carnations*.

**Vineries.**—I confess to a feeling of surprise at the limited extent of the vineries and Peach houses at Gunton. Being familiarised with Mr. Allan's fruit at shows, I expected to find a greater number of houses for its growth. There are but four vineries and two Peach houses, neither of them large. Mr. Allan depends very much on a selection of varieties to ensure good crops of fruit in season throughout the year. His

Peach season under glass from his two houses would astonish most growers. The back walls are also planted with *Figs*, *Peaches*, and *Tea Roses*; in fact, wherever there is a vacancy of only a few inches under glass a *Tea Rose* is sure to be found. The first vinery is furnished with old specimens of *Black Hamburgh*, *Foster's Seedling*, and *Madresfield Court*, the latter inarched on the *Alnwick Seedling*. The second house is furnished with *Muscats*, *Mrs. Pince*, and *Chatsworth Seedling*. A third house is replanted with *Alnwick Seedling*, *Trebbiano*, *Chatsworth Seedling*, *Gros Colmar*, *Gros Guillaume*, and *Duke of Buccleuch*. The first five have made vigorous rods; the sixth little or no growth. Most of these Vines have been worked on side shoots with others, not for the purpose of superseding them, but of increasing the number of rods, and foretending the Vines. Mr. Allan also attributes considerable importance to growing some sorts, such as *Madresfield Court* on another stock as a preventive of splitting, &c. *Alnwick Seedling* is inarched with the *Duke of Buccleuch*, *Trebbiano* with the *Muscat of Alexandria*, *Chatsworth Seedling* with *Muscat Hamburgh*, and *Gros Guillaume* with the *Duke and Madresfield Court*. Mr. Allan has a high opinion of *Chatsworth Seedling* and *Alnwick Seedling*. The latter, however, needs artificial fertilisation to set it freely, as the filaments of the stamens are so short, that otherwise the pollen has little chance of reaching the stigma; grown and coloured as it is at Gunton it seems a very useful late *Grape*. The latest house is furnished with *Mrs. Pince*, *Gros Colmar*, *Chatsworth Seedling*, *Alicante*, *Lady Downes*, and *Alnwick Seedling*, the latter inarched on *Raisin de Calabre*. Mr. Allan's experience is all in favour of planting such varieties as *Lady Downes*, *Gros Colmar*, and *Mrs. Pince* by themselves, as they take longer time to ripen than the *Alicante* or *Alnwick Seedling*, and should be started earlier. The Vines were in capital condition without any of the gross shoots or abnormally vigorous wood that some consider essential as the foundation of high class first prize fruit. The borders are made on the piecemeal system, and are formed of the usual materials on a concrete base.

The peach houses are trellised, a curved roof trellis running up to about two-thirds of the rafter. This allows the sun to reach the back wall from base to summit, so that roof and back wall produce fruit of equally good quality. The trellis in the early house is furnished with *Violette Hâtive Peach*, *Violette Hâtive Nectarine*, and *Hunt's Tawny Nectarine*; the back wall with *Early Grosse Mignonne*, and early *Beatrice Peach* and *Lord Napier Nectarine*, the *Early Hâtive Peach* to be replaced this winter with *Hale's Early*. The finest *Hunt's Tawny Nectarines* I have ever seen have been grown in this house. The second Peach house is furnished with *Early Grosse Mignonne*, *Acton Scot*, *Dymond*, *Lord Napier Nectarine*, and *Princess of Wales Peach*. The *Acton Scot* grows a good size here, and the *Princess of Wales Peach* increases in favour. These two houses thus furnished yield a supply of fruit from June to September, both inclusive. The trees were in robust health and well furnished with good wood, well studded with flower buds. To show how space is economised, it may be stated the *Lord Napier Nectarine* is trained as a cordon on the end of the second Peach house, and produces thus a fine crop, and keeps up the supply of *Nectarines* as soon as the first house is gathered.

**Strawberries and Onions.**—Strawberries, which are remarkably well done, amount to something like 1200 pots a year, the sorts being chiefly *Vicomtesse Héricart de Thury*, *Sir Joseph Paxton*, *President*, and *Dr. Hogg*. The garden is

also well furnished with pyramidal and bush *Pears* and other fruit trees; and in the fruit room at the back of the chief range of glass was a fine collection of *Apples* and *Pears*, amongst which the following *Pears* were among the finest: *Marie Louise*, *Suffolk Thorn*, *Beurré Bachelier*, *Beurré Superfin*, *Beurré Bosc*, *Beurré Diel*, *Beurré d'Amanlis*, *Jersey Gratioli*, *Comte de Lamy*, *Prince Consort*, *Glou Morceau*, *Van Mons Léon le Clerc*, *Winter Nelis*, *Fondante d'Automne*, *Josephine de Malines*, *Soldat d'Esperen*. Close by these was the root store, in which was the finest lot of *Onions* that I have seen for a long time. These are a careful selection of the white *Spanish*, and are no mean rivals to the imported and famous *Spanish Onions* of the grocers' shops. Not only is this selection admirable, but the mode of culture is so unique as to deserve a passing notice. Two chief crops, *Strawberries* and *Onions*, are grown abreast thus: The *Onion ground* is prepared by deep digging or bastard trenching, and liberal manuring in the usual way. But the seed is sown in drills 30 in. instead of 6 in. or 9 in. apart. Kept clean throughout the summer, the *Onions* at these distances make extraordinary progress. About June the earlier *Strawberry runners* are planted in a single row midway between each two rows of *Onions*. These get hold at once, make rapid progress, and by the time the *Onions* are harvested have full possession of the ground. The advantages to the *Onions* are more light and air, and consequent vigour; to the *Strawberries* finer fruit the following season than can be gathered by any other mode of culture, the maiden fruit being fine, and there is an early supply of runners for potting as well as planting. The second season the crop of *Strawberries* is prodigious, after which they are trenched in.

The *Asparagus* is all grown in rows 3 ft. apart, as described in *THE GARDEN*, and is treated on the French plan. The plants are like giants, and cannot fail to yield abundance of the fine heads so often referred to, but so seldom cut in English gardens. Here, too, Mr. Allan attributes a good deal of importance to selection as well as culture, and there is assuredly a marked difference between his selected and unselected seedlings, though the whole of the *Asparagus* is remarkably vigorous and strong, affording convincing evidence of the soundness and wisdom of the French mode of cultivating this fine vegetable, and giving proof positive that it can be grown as well in Norfolk as in France. D. T. FISH.

## SEASONABLE WORK.

FLOWERS AND PLANTS IN THE HOUSE.

G. J., SURREY.

THIS is the week for outdoor *Chrysanthemums*, and if the frost will spare them for another fortnight there will be no want of open-air flowers for our bouquets. For this purpose I prefer them to those grown indoors. There is a substantial texture and wholesome sturdiness about all the parts; the stalks are strong and stiff, the flowers hold up their heads, and the leaves are thicker set, and turn fine colours in the sun; whereas the leaves of indoor-grown plants are of one uniform dusty green, and highly uninteresting. The best for decoration are not the incurved ball-shaped kinds, but the flatter-shaped and the Japanese. From the open air.—1, large table bouquet—*Arbutus* with flower and fruit; 2, *Snowberry* with leaves of *Milk Thistle* and white-striped leaves of the variegated *Irish*; 3, *Chrysanthemums*, dark red, deep orange, and buff; 4, *Chrysanthemums*, rosy-pink, pink-white, and red-purple, with their own foliage, some of it tinged purple; 5, *Schizostylis coccinea* alone, an upright sheaf; 6, *Jasminum nudiflorum* with green



foliage of oval-leaved Privet, also standing in an upright sheaf-like form; 7, Tea Roses (Safrano), with sprays of oval-leaved Privet, of which the leaves have turned a bronze-black colour; 8, pot Marigolds with orange-red coloured twigs of Box and red-leaved sprays of *Spiraea Thunbergi*—a brilliant piece of colouring. (Pot Marigolds have a strong smell that many people find disagreeable, but they only or mostly give it off when they are handled or bruised; when once arranged they give no smell in a room, and at this time of year I can detect none from an untouched growing plant.) From indoors.—9, *Heliotrope*, light and dark, a large bunch by itself; 10, white *Daphne indica*, *Jasminum grandiflorum*, *Bouvardia jasminiflora*, *Mignonne*, and foliage of sweet *Geranium*—a bouquet delightful for sweetness. Pot plants.—*Eupatorium ageratoides*, *Adiantum farleyense*, *Tydaea Robert le Diable*.

#### FLORAL DECORATIONS.

J. HUDSON, GUNNERSBURY HOUSE.

AMONGST sweet-scented flowers at this time of the year, *Heliotropes* stand in the first rank. They are not, perhaps, so durable in a cut state as some other flowers, but their fragrance makes amends for this deficiency, which may even in a great measure be obviated by cutting the trusses as long in the stem as possible, and selecting those which have been most exposed to the light. These will associate well either with white-flowered *Pompone Chrysanthemums*, or with red and white *Primulas*, and in the boudoir or drawing-room would be appreciated. Fine bright blue flowers to be had from now onwards through the winter are furnished by *Eranthemum pulchellum*, which for cut purposes I find invaluable, and well-developed spikes, with attention, will last at least a week. For associating with white flowers, such as *Eucharis*, white *Azaleas*, or white *Camellias*, they are excellent. Though somewhat dull under artificial light, they fully make amends for this during the daytime. The blossoms of the bright blue *Cornflower* are also useful, and may be had where the *Eranthemum* cannot be grown. Shoots and leaves only of the scented-leaved *Geraniums* are handy to arrange with flowers at all times, and they help to check a too rapid use of Fern fronds. Well-developed trusses of winter-flowering zonal *Pelargoniums* will be useful where a gay display is required. Brightly-coloured kinds will answer admirably in arrangements for the dinner-table in contrast with white flowers for the bases of vases or *epergnes*. Single forms, I think, look best, but the double kinds last longest, especially under gas-light. For the centre-piece of a large dinner-table, a bold yet tasteful arrangement may be made now with a few blooms of the *Ethiopian Lily* and *Amaryllis*, and a few spikes of *Schizostylis coccinea*, or of *Eucharis*, or *Callanthe vestita*. This kind of arrangement looks best associated with somewhat bold foliage; small leaves of *Alocasias* or *Marantas* would do, so also would leaves of the fine-foliaged *Begonias* and *Fittonia* used as a groundwork. In this, as well as in all other arrangements, avoid the yet too common error of overcrowding to produce effect. In general, far more flowers are cut than are required, thus wasting really valuable material.

#### INDOOR PLANTS.

T. BAINES, SOUTHGATE.

**Pelargoniums.**—Plants of these intended to flower early should now be shifted into the pots in which they are to bloom. Good turfy loam well enriched with manure, but with less sand added than many things require, is the most suitable soil for them. Avoid over-potting; 8-in. or 9-in. pots will be large enough for even the largest plants. In potting both the large flowered and the fancy varieties the soil should be rammed harder in the pots than most things need; give all the light possible, keeping the plants well up to the roof, tying the shoots out horizontally, so as to lay the foundation for a bushy form. It is desirable that this should be done so as to keep the shoots stout and strong, even if the plants are not required for anything beyond ordinary decorative pur-

poses, when no more sticks and ties should be used than will prevent the shoots hanging about in an untidy way. Give no water after the plants are shifted for two or three weeks, so as to allow the roots to start before applying it, but see that the balls are fairly moistened previous to potting. The fringed irregular petalled varieties, such as have been raised of late years, both in this country and on the Continent, require treatment similar to the show kinds in all matters of cultivation, except that, owing to their short-jointed growth, they want less support, and they will bear keeping warmer than the others with a view to their flowering earlier, but where subjected to anything above an ordinary warm greenhouse temperature, say from 42° to 45° at night, they must be wintered in a good light house. Wherever a continuous display of flowers is required to be kept up for conservatory decoration a good stock of these compact habited sorts ought to be grown; they will come into bloom early in the spring, before the ordinary kinds can be induced to flower.

**Herbaceous Calceolarias.**—Those raised from seeds sown in summer should now be moved to their blooming pots. If the strain possesses the vigorous habit that is so desirable in these plants, they will bear much larger pots than are often used. When the intention is to have large specimens, 10-in. or even 12-in. pots will not give more room than is requisite. The plants when liberally treated in the matter of room will be doubly effective during the flowering season; not alone through the increased size of the heads of flower produced, but also by the larger and better condition of the foliage. Unlike *Pelargoniums*, *Calceolarias* do best when the soil is not too solid and compact, either by its being compressed closely in the pots, or through its being naturally close in texture; for this reason one-fifth or sixth of leaf-mould may be added, with a liberal addition of rotten manure and sand. See that the plants are quite free from aphides before potting, as if any of these pests exist they can more conveniently be dipped in tobacco water whilst in small pots than after moving into large ones; the insects get under the bottom leaves so close to the soil that it becomes difficult to kill them by an application of smoke that is not too strong for the foliage to bear.

**Cinerarias.**—Plants of these raised from the last sowing, and intended to succeed the earliest should at once be moved to their blooming pots, for if let to get at all pot-bound, they will never move freely afterwards. With *Cinerarias* sufficient room to keep them in a vigorous thriving state is the best means of counteracting the effects of insects, which are all but certain to appear during some period or other of their growth, and even if destroyed as soon as discovered do much more mischief to weak plants than they do to strong ones. Light rich soil suits them best.

**Paris Daisies** (*Chrysanthemum frutescens*).—Where good sized plants of these have been prepared, so as to get them large and their shoots well solidified, they will produce abundance of flowers if kept in a little warmth. With all free-growing things of this nature intended to bloom in winter there is a great advantage in having plants well hardened and stocky, as in such condition there is a disposition to flower not existent in young examples that make growth when subjected to a little warmth.

**Roses.**—Wherever *Roses* are required regularly through the winter there should be a house devoted to them proportionate in size to the quantity wanted. The method of treating *Roses* for flowering during the winter months is now so different and found to give so much better results than that which used to be followed, that in place of a few fugitive indifferent blooms being forthcoming they can now be had all but equal in appearance to that which spring and summer *Roses* possess. This applies to the *Tea* varieties, which, from their continuous habit of growth, will keep on producing flowers with comparatively little forcing; but to do this the plants should be strong, and must be kept

perfectly free from insects and mildew; the latter of which, if allowed to get possession of the foliage to any considerable extent, is so destructive as to prevent the possibility of the plants blooming as they ought. A good light house or pit is indispensable for this kind of winter work. In place of the plants being, as formerly, subjected to the same routine treatment given to other hardy shrubs, bulbs, and similar stock, that need to have a free admission of air given them, *Roses* forced during the winter should have little external air admitted to the house, and this only in very small quantities at the ridge of the structure, so that it will not come in contact with the young leaves, which produced under such conditions are very tender and exceedingly liable to be attacked by mildew. The plants should not stand on dry shelves, but on beds of ashes, or if for the sake of getting them up near the glass they are elevated somewhat, the beds underneath ought to consist of some moisture-holding material, than which nothing is so good as coal ashes. Yet beyond this there should be no vapour in the atmosphere of the house further than that arising from syringing the plants freely overhead three or four times a week, which is necessary to keep down insects even in the winter time. Care must also be taken that the temperature on frosty nights does not fall too low, for if this occurs the plants will get a check that will seriously interfere with their progress. About 50° in the night is the right temperature for most of these *Tea* varieties, with only a rise of some 5° more by day, except what may be caused by the sun. A few kinds, such as the favourite white *Niphetos*, want about 5° more than this. The plants, even if strong, must be well sustained with manure, either in a solid or liquid state, or after the first crop of flowers is produced they will not be able to make growth strong enough to produce the full complement of fine blooms. Plants that are turned out permanently in beds in a house of this description necessarily make the strongest growth, and yield a proportionately larger number of full sized flowers, but against this there is the disadvantage of not being able to introduce a fresh lot of plants to give successional bloom when those first started, so as to come in when out-door *Roses* are over, have for a time had their flowering exhausted.

#### FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

WORMS now throw up their castings on lawns at such a rate as to make one believe they are capable of all that Darwin says of them, but, serviceable as they may be in other parts, most of us in charge of gardens wish they would devote their energies somewhere else. To destroy or banish them there is nothing equal to lime or gas-water, either of which poured on through the rose of a pot when they are near the surface will turn them out, when they may be swept up and carried away. Not only is lime or gas-water valuable for the destruction of these pests, but they are of great service in other ways—the latter especially for promoting the growth of the Grass, which it not only strengthens, but adds to it a darker and deeper richness of colour. Lime-water is one of the principal aids in the eradication of Moss, but the best remedy for the destruction of this plan is the lime itself, which to be effectual should be put on fresh. The proper way to apply it is to get as much as may be required in a shed where it can be slaked by pouring water over it, and as the process of slaking goes on it should be covered with sifted soil to keep in the strength and for the purpose of mixing with it to give weight, that it may be sown on more regularly without blowing about. If put on during a dry time it may be rubbed in among the Grass and Moss, by the use of the back of a wooden rake and in a short time the Moss will be found to turn brown and lose its hold, when the Grass will quickly spread and take possession of the bare ground, and cover it with verdure. Noxious weeds, such as *Plantains* and *Daisies*, can only be



eradicated by either digging them out with a sharp, narrow tool made for the purpose, or by dropping into their crowns a single drop of vitriolic acid, which soon burns them all up. In cases where lawns are in bad condition through being unlevel this is a good time to rectify the defect, and they should be taken in hand at once, and as half measures are generally useless, or take longer in the end, the best way is to rip up the whole of the flag at starting, when the inequalities will be seen at a glance, and may be rectified by the addition of soil, which is better than breaking up or interfering with the solid surface, unless the parts happen to be higher than can be carried out all through. Next to getting the surface uniform and level the chief thing is to cut the turves of one thickness, so that when laid there is no difficulty in rolling or pressing them down; this rolling or beating down should first be done when the flag and ground are moderately dry, after which it should be followed up till the surface is regular and smooth, when it will be necessary to leave it to become solid and firm to the tread. As trees have cast off their summer garb, and we are now fast approaching a season when sharp frosts may be expected, it is high time to be looking around to see what requires protection, so as not to be taken unawares when bad weather sets in. For sheltering most plants there is nothing equal to fresh fallen leaves, which are capital non-conductors, the only difficulty with them being that of keeping them where placed, which may best be done by putting over them a little dry Fern, and to hide the unsightliness of this a few evergreen branches may be stuck in around. Protected in this way, Tea Roses winter well, as do also Pampas Grass, Tritomas, and such like, but for smaller growing subjects, like Pentstemons and Antirrhinums, leaves in a half rotten state answer best. These can be laid thinly about the collars without burying the plants up too much, which is as great an evil, and often results in more loss than allowing them to remain as they are. In cases where leaves cannot be obtained, Cocoa-nut fibre is a good substitute, and next to that fine coal ashes, which soon dry and keep out a great deal of frost. Beds and borders containing bulbs will now require much watering to keep them from the depredations of rats and mice, which vermin have a wonderful instinct in knowing where to dig to find the meal, although the roots may be hidden deep down, and appear as yet safe in the ground.

#### ORCHIDS.

J. DOUGLAS, LOXFORD HALL.

**East India house.**—The weather so far as the season has yet gone has been very suitable indeed for the occupants of this house, or, indeed, of any of the houses, for we have been enabled to do with quite a minimum of artificial heat. This has been advantageous in at least two ways—the plants have had a more congenial atmosphere, and there has not been much condensed moisture to injure them. In winter the latter drips into the hearts of Vandas, Aerides, and other plants, and does them much harm. The large growing Aerides and Vandas do not require so much warmth as the usual occupants of this place, and if they have to be grown in it from want of another suitable structure they ought to be placed in the coolest part. Do not be too free with water at this season. If the Sphagnum has kept green I would say the plants are too moist; on the other hand, if dried up too much they are apt to lose some of their leaves, and every one that is lost detracts so much from the value of the plants. Up to this time *Vanda teres* has been kept in a light place in the warmest house and freely supplied with water. The plants have now been removed to another house, and placed in the full sun, where the temperature is about 55° at night, or it may fall to 50° in cold weather. The plants, being now dried off, should receive scarcely any water until they are again put into heat in March; treated thus they are almost sure to flower freely. It is pretty well known that there are two or three varieties of this *Vanda*, and the opinion

prevails that the typical kind is a very shy flowerer. I grew two forms and flowered them last year by growing them freely in the summer and drying them up in the winter. The most beautiful occupants of this house at present are the *Phalenopsis*; some are in flower and several are throwing up their flower-spikes, and they require to be carefully watched to prevent their being injured by slugs, &c. They ought to be inspected at 7 p.m., and again two or three hours afterwards; that is the only way to get rid of such pests. See that the Sphagnum does not too much smother the stems of the plants, for when that happens the incipient spikes are sometimes injured by it. It is not a good time to interfere with the roots; but if any of the plants seem to suffer from their having grown in to rotten Sphagnum, it must be carefully removed and fresh Sphagnum substituted, adding clean potsherds and bits of charcoal. At present it is easy to keep the temperature at 70° at night; we can even do this with the ventilators open. We may soon expect frosty wind, and it is necessary to prevent its blowing directly on the plants. Those, therefore, that are close to the side lights may be injured if there is any opening there when the lights are closed. Air should be admitted by ventilators opposite the hot-water pipes, so that it may be heated before it comes in contact with the plants.

**Cattleya house.**—The *Anguloas* are quaint showy plants especially for large houses, and should be in every collection. A *Clowesi* with its large golden flowers is the most showy amongst them; *A. uniflora superba* is also quite as free in growth as *Clowesi*, and is a distinct and handsome species; while *A. Ruckeri*, of which a fine form is figured in the "Orchid Album" for November, is quite distinct from either. Its large flowers are dullish crimson and yellow. All the sorts require much the same treatment, and as they are now approaching the resting period, little water should be given to the roots. They require a good season of rest, and if the temperature is not much above 50° as a minimum during the winter months it will be sufficient. These plants do not require to be placed near the glass. We have been very successful in flowering the very showy *Dendrobium Dalhousianum* by removing it from a warm house, where it made its growth during the summer, to the *Cattleya* house. This fine Orchid, though often neglected, is an easily managed showy species, and flowers freely under good management. It ought not to be often repotted, and as long as it continues to make good growth it ought to remain where it is. All other *Dendrobiums* should now be moved from the warm house, either into this one or a cooler house; we move all of them except *D. formosum*. This species is always kept in the warmest house. As the flower-buds begin to show on the different species they ought to be placed in heat to maintain a succession of bloom. Plants of *Odontoglossum vexillarium* ought to be kept in a position near the glass, and they should be carefully watched in case thrips should appear on them. It may be well to dip them in diluted tobacco water two or three times during the winter as a preventive. When this pest can be seen with the naked eye, it has usually done more mischief than one likes. The young roots will be pushing freely from the base of the partly-formed pseudo-bulbs; if necessary, the surface of the compost should be removed and fresh material added.

**Cool house.**—*Odontoglossums* of various kinds are now throwing up flower-spikes freely. When they have pushed 1 in. or 2 in. from the base of the pseudo-bulbs is the time there is most danger of their being injured. From November until October we have to watch nightly for slugs, &c., probably introduced with fresh Sphagnum when plants are surface-dressed or repotted. Nearly all cool house *Odontoglossums* require water rather freely during winter. *O. nebulosum*, however, requires to be more cautiously used in this respect than most of the others, as the young growths sometimes rot off; indeed they are certain to do so if water lodges in them during the winter months. One of the few *Cypripediums* that succeed well in a cool house is *C. insigne*, and the much better variety *C. insigne Maulei*. Both are

now in flower, and being distinct in form and colour from anything else in flower at this season, they are very welcome, and all the more so because they last a long time in good condition. In referring to *Masdevallias* in flower at this season (p. 490), I did not mention the very singular *M. chimara*; it has the advantage of any of the other introductions of the same type, such as *M. nycterina*, *Wallisi*, and *Roezli*, inasmuch as the flowers are borne aloft on stems at least 1 ft. long, while the others, being on feeble stems, do not rise above the Sphagnum in which the plants are potted. *Masdevallias*, like the *Odontoglossums*, require a good supply of water even during winter, and this being so, see that they are not over-potted, else the compost will be likely to become sour, a circumstance which will occasionally happen in the best managed houses. When it does occur, turn the plant out of its pot, wash the roots, and repot in good material. We have been keeping up a sufficiently high temperature for the last few weeks without the aid of artificial heat.

#### THE ROCK GARDEN.

T. D. HATFIELD, BICKLEY.

If preparations for winter have not been already made, no time should now be lost in commencing them. These should consist in affording some protection to delicate subjects, and those also which are likely to become the prey of slugs, or to be turned out of the ground by worms. The *Agaves* (*A. Deserti* and *A. utahensis*) may, by a piece of glass being placed over them, be got through the winter safely, the principal point in this, as well as in almost all other cases, being to keep them dry. *Agapanthus Mooreanus*, a very dwarf kind, has stood two winters with us, but has not yet flowered. Although apparently hardy, we take the precaution, at least, of giving it a covering of river sand, believing it to form a good protection from frost, and neither slugs nor worms like to crawl over it. A big slug had pitched upon a very fine piece of *Androsace sarmentosa* growing in dry calcareous loam, and would soon have made short work of it had it not been completely driven off by a dressing of sand. *Antirrhinum Asarina* is a plant about which there need be no anxiety. If it does look shabby, or even die, there should, the following spring, appear seedlings abundantly, which flower the same year. The *Androsaces* form a very delicate group. They do not suffer from cold, but from damp in winter. We place about them a few stones, just large enough to elevate over them pieces of glass, which we have reason to believe are of great service in protecting them from wet. *Calceolaria Kellyana*, *Calandrinia umbellata*, and *Cathcartia villosa* are plants which should be packed with sand, and have also the protection of a piece of glass. *Chamaepeuce diacantha* is a plant which stands the winter well enough with us, and ripens seed freely. Duplicates of *Convolvulus mauritanicus* and *C. Cneorum* should be kept in a cool house through the winter. *Dasyllirion Biglowi* promises to become a distinct and useful plant for the rock garden; it stood last winter without the slightest protection. Various *Edraianthis* will be better packed with sand and stones. They are somewhat difficult to manage. Experience has shown that four species (*E. caudatus*, *E. Pumilio*, *E. carnicinus*, and *E. dalmaticus*) have a most decided liking for dry calcareous loam. *E. serpyllifolius* and *E. tenuifolius* have yet to be tested. Sand and stones prevent worms from piling their castings about the plants. Drabas, too, will be all the better for a dressing of sand; as will also the fine-leaved perennial *Heron's-bills*. The sand keeps their half-succulent, half-woody rootstocks from rotting.

That pretty little member of the Gentian family, *Erythraea aggregata*, seems to go off, but it is only biennial, and seedlings should appear plentifully enough about the parents in succeeding years. *Francoas* may be got through the winter well enough with the protection of a piece of glass, but perhaps it would be as well to have duplicates of them in a cool frame. *Helianthemum Tuberaria* should be well packed with sand. I think



there need be no fear as to the hardness of the Edelweiss. A piece of glass would keep it dry, and sand would prevent worms from disturbing it. *Linaria pilosa* always seems to disappear in winter. Whether it is an annual, or whether it reproduces itself from an odd leaf or two which may happen to be lying about, I cannot tell, but certain it is there is always plenty of it before the year is out. *Margyricarpus setosus*, an elegant semi-shrubby member of the Rose family, grown for its white berry-like fruits, is rather tender. During the winter of 1879-80 it was killed outright, but seedlings of it, which appeared the following year, stood last winter, and this summer produced a considerable number more. This plant shows the way in which some plants, though few, accommodate themselves to a soil different in constitution from that on which they live as natives. This is marked in Gusmus' "Central Alpine Catalogue" as "off lime." *Meconopsis nepalensis* and other species had better be protected by glass, merely to keep them dry. *Omphalodes Lucilæ* is hardy enough, but slugs and worms trouble it. A ring of perforated zinc, fastened with copper wire, has proved itself to be a very useful guard.

*Onosma tauricum* gives us no trouble in calcareous loam. Two very fine examples—all we had last year—stood the winter without showing the slightest sign of being hurt. One was covered—a fine plant, at least four years old, and when in flower nearly occupied a square yard; the other was not covered, and between the two there was no difference. *Opuntia Rafinesquiana*, *O. missouriensis*, and *O. humilis* need only be kept dry; thus treated, we think they are hardy enough, and a simple dressing of sand may answer this purpose. *Pelargonium Endlicherianum* is the only hardy species at present known, and even this we take the precaution of protecting. Some of the *Pentstemon*s are tender. They are difficult to protect; so perhaps cuttings had better be taken and wintered in a cool frame. *P. Cobæa*, *P. glaber*, *P. Menziesi*, *P. ovatus*, and *P. Scouleri* are amongst some of the tender kinds. A dressing of sand is very useful for *Primulas*; it keeps worms from working about them. I do not know whether any one has considered it necessary to protect *Rhexia virginica*. We have hitherto done nothing for it in that way, and it has not appeared to be injured in the slightest degree by the past severe winters. Anyone having a plant of the pretty *Tournefortia heliotropioides* had better take it up and keep it in a cool house.

We have sown a quantity of seeds gathered upon the Alps this autumn, principally *Gentians*; we have sown them late, thinking it better that an opportunity to germinate should not be given them until spring, and also better that they should lie upon the ground on a north aspect, covered slightly with sand, than kept in packages until spring. Many plants are now flowering out of season, and amongst them the one most deserving of note is *Polygala Chamæbuxus atropurpurea*; also a very good plant of the Giant Christmas Rose (*Helleborus niger grandiflorus* or *maximus*).

#### PROPAGATING.

**CHRYSANTHEMUMS** are by many propagated in spring, yet there are great numbers who think that autumn-struck cuttings produce the best flowers, and autumn striking certainly possesses one advantage, and that is the cuttings are easily protected in a frame, whereas large plants saved until the spring would take up a good deal of room during winter. Where autumn propagation is practised, the cuttings should be put in now, and for this purpose choose those stout shoots that spring up around the base of large plants. In the case of some varieties, an immense number of young growths are formed, and where that happens the weak ones should be removed, leaving only a sufficient number from which to propagate; if this is not done, all of them will become drawn and weak. In some the shoots are but sparingly produced, but the additional protection accorded to the plants when in bloom causes them to break up from the bottom, when cuttings can be taken. The soil for *Chrysanthemum* cuttings should be

of moderate lightness, and should consist of about two-thirds loam and one-third leaf-mould, with a fair proportion of sand, but in this respect the *Chrysanthemum* is not very particular, provided good open material is used. The cutting pots should be about 2½ in. or 3 in. in diameter, with 1 in. of crocks in the bottom, and then filled to the rim moderately firm with the soil just mentioned. The cuttings should be about 3 in. in length; remove the bottom leaf, or two if necessary, for the purposes of insertion, but as many of the shoots will be cut off below the soil in order to obtain them of sufficient length, they will not require the removal of any leaves. When prepared, insert them singly in the centre of each pot, and take care that they are made secure. Each cutting should be correctly labelled, as by so doing mistakes are avoided. They may then be placed in a cold frame, or if put where there is a slight amount of heat they will root quicker without the danger of damping off, but very little heat must be given, or they will grow up weakly, and as soon as rooted they should be removed. If in a frame without heat, take care that they are not far from the glass. A good watering when put in will suffice for some time, and when this is done leave off the lights, if practicable, for a short time to dry up superabundant moisture. The after treatment consists in removing decaying leaves, in giving water when required, and in taking off the lights for an hour or so on a fine day, if there are any signs of damping. The summer-flowering varieties, now much more grown than formerly, may also be put in at the present time, but as their shoots are weak compared with those of the others, it is unnecessary to put them in single pots; about a dozen in a 5-in. pot will be found to be best, and when rooted they may be potted off and grown on as the other kinds. As, however, they belong mainly to the small-flowered class, unless needed for something special, 6-in. pots will be large enough for them. Where it is desired to increase any of the above to the fullest extent, they may be allowed to grow until the tops are of sufficient length to be taken as cuttings, instead of pinching them out as soon as growth commences. T.

#### FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Pines.**—By the end of the month a light, efficiently heated structure should be ready for the reception of the first batch of *Queens* intended for early fruiting; if the demand is not heavy a small compartment will answer best, as the most promising plants can be drawn from the general stock intended for starting a month or two later. When, but not before, the fermenting material used for bottom-heat has declined to 90°, plunge lightly, keeping them well up to the glass, give tepid water in moderation until the balls are properly moistened, gradually increase atmospheric moisture, and raise the temperature from 70° at night to 80° by day when the weather is favourable.

**Houses** in which fruit is swelling and ripening may have a lower temperature after the beginning of next month, as days will be dark and short, but no diminution need be made in the bottom-heat unless it ranges above 85°. If blinds are used for covering, now is the time to apply them; as the thinnest material prevents waste and saves the plants from the damaging influence of excessive fire-heat. Overhead syringing may be almost if not entirely discontinued, but surface damping must not be neglected, as dry fire-heat soon produces aridity unfavourable to the full development of the fruit. Root watering will be less frequent, but quality may in some measure make up for quantity, and when water is applied give sufficient to permeate the whole of the ball.

**Succession pit.**—If former directions have been followed, the different sizes will be securely plunged in a steady bottom-heat ranging from 70° to 75° with sufficient moisture about them to support an almost imperceptible progress. Let the night temperature range about 60° or a few degrees lower in severe weather and run up to 5° to 10° on fine days.

**Cucumbers.**—Up to the present time the mild weather has been in favour of winter fruiters, and plants in all stages have been kept clean, vigorous, and fruitful without the aid of sharp firing; but the time may be at hand when these conditions will be changed and more artificial heat will be needed. In close, efficiently heated structures it is easy enough to set the external elements at defiance, but highly heated pipes are always looked upon with suspicion, as they foster hrips and red spider, and the experienced cultivator endeavours to counteract their parching influence by covering the roof at night and charging the atmosphere with soft, invigorating vapour. In wooded districts where Oak, Beech, or Sweet Chestnut leaves are plentiful, pot culture has many advantages, as these can be used for bottom-heat, turned and renovated at pleasure. Moreover, plants in well-drained pots or boxes placed on pedestals soon form a mass of roots capable of taking large quantities of stimulating food; as they cannot be overwatered. From this time forward direct syringing, unless the mornings are bright and mild, may be discontinued, but the evaporating pans must be kept full, and a little fresh horse manure placed on the surface of the bed at short intervals will prove highly beneficial. Top-dress with light turfy loam and lumps of old lime rubble as the roots appear on the surface. Train thinly without stopping until the trellis is covered. Keep the house free from decaying matter and guard against overcropping.

**Peaches and Nectarines.**—If the early house from which a supply of ripe fruit is to be gathered in May is not planted with the earliest kinds, for which we are indebted to the late Mr. Rivers, it should be closed by the end of this month; but no fire-heat will be needed until the buds get well advanced. If the lights have been taken off, the inside borders will have been thoroughly moistened by the autumnal rains, and in a fit state for the reception of a ridge of fermenting material, consisting of two-thirds of Oak or Beech leaves, and one-third short stable manure, but in the event of the roof being a fixture, see that the roots are properly supplied with tepid water before forcing is commenced. Give a little air every day to sweeten the atmosphere and to strengthen the buds, and syringe with warm water about 9 a.m. and 2 p.m. when the weather is favourable. Let the temperature range from 45° at night to 55° by day, or a few degrees higher under gleams of sunshine, but do not exceed the above figures when cold weather renders constant fire-heat necessary. Proceed with the usual routine in succession houses. Keep them cool and constantly ventilated, unless the weather is very severe. Never allow the internal borders to become dry, as the roots of Peaches under glass are always at work, and it is to the withholding of water after the leaves fall that numerous instances of bud-dropping may be traced. If any of the trees in this compartment have been overworked and show signs of weakness, remove the surface soil quite down to the main roots, and replace with fresh virgin loam of a calcareous nature, or lift and replant in new compost. Look well to reserve walls, without which a set of forcing houses cannot be kept going. Lift, root-prune, and replant in sound turfy loam, to keep the trees in a fit state for removal, and fill up vacancies as they occur.

**Peaches and Nectarines in pots.**—With a good selection of the best early and mid-season kinds thoroughly established in pots, and a light, well ventilated structure for growing them in, the hard forcing of a permanently planted Peach house may be avoided by starting a few of the most promising about the end of this month. To insure success, trees which were potted last season and have been top-dressed early this autumn should be selected, pruned if necessary, cleansed, and placed in position at once. If the height of the house will admit of each tree being elevated on a pedestal of bricks, or an inverted Seakale pot, a good body of fermenting Oak leaves, to which may be added a little short horse manure thrown loosely amongst the stands, but not high enough to come into contact with the roots,



will greatly facilitate forcing. Syringe the trees two or three times a day, keep them regularly supplied with tepid water, aim at a minimum temperature of 45° to 50°, and run up to 55° or 60° on mild, bright days. In mild weather the above figures may be secured without fire heat, but when dark and severe a fall of 5° will be preferable to sharp firing.

**Grape room.**—All the thin-skinned kinds of Grapes will now keep quite as well, if not better, in the Grape room than they will upon the Vines, and where a house is held comparatively useless by the relics of a crop the bunches should be removed at once, when the Vines may be pruned and thrown open to the weather. If the room is not dry, well ventilated, and fitted with pipes from an external boiler any alterations or improvements which past experience may have suggested, should be carried out at once, as it is very important that every arrangement should be made complete, even to the filling of the bottles, and firing for a few days with open ventilators, before it is wanted for use. When Grapes are removed to the Grape room, a mean temperature of 50° is high enough, and as this can be secured without fire-heat, the latter will only be needed to expel damp and produce a steady circulation of fresh air.

**Fruit room.**—By this time the general stock of Apples will have passed through the sweating process, and unless they are too thickly placed, the less they are disturbed the better. They must, however, be carefully looked over for doubtful or decaying fruit, as one unsound Apple soon taints another, and the ripest and finest fruit generally goes first. From this time, forward the windows and shutters may be closed, but the ventilators must be left constantly open, the conditions most favourable to the keeping of fruit being a cool, dry atmosphere in a room from which frost can be excluded without the aid of fire-heat. Pears may be kept in the Apple room, but to bring out their full flavour they should be removed to a warmer structure before they are wanted for use.

#### MARKET FRUIT GARDENS.

J. GROOM, LINTON PARK.

PLANTING fruit trees and bushes is still being pushed on with vigour, the weather being all that can be desired for such work. I find even here, where game is but little preserved, that great care is needed to keep freshly-planted trees from being barked. For this all sorts of remedies are used, such as casing the stems in Birch, or winding rags or list round them, and then smearing these with tar, paraffin oil, or other noxious matters; but as these have to be renewed, it is probably cheapest in the end to have small-meshed rabbit wire-netting, and either fasten it round the entire piece enclosed, or separately round each tree. This is a good time for collecting parings of road-sides, old mortar or lime rubbish, and similar materials useful in gardens. They should be carted into heaps to be in readiness for future operations in the way of planting. Underwood may now be cut for stakes and fencing, using the smaller wood for baskets, &c. Where there is a stream of water, some low-lying spot should be selected for an Osier bed, as, in addition to their value for basket-making, small pliable Osiers are useful for tying in the case of espalier and other trained trees. Old trees are converted into charcoal; even the roots and twigs may be converted by fire into ashes and spread on the land, which will be thus rendered good for Potatoes, a crop which thoroughly cleanses the soil for Strawberries. The latter are becoming very popular as market fruits, for even when too far from market to send them for use in a fresh state they are always saleable for preserving. Established beds should now receive a coat of manure, for, unlike many fruits, the Strawberry can hardly be too liberally treated in this respect.

**Damsons** are being largely planted, and many growers of the Farleigh or Cluster Damson are now carefully saving the suckers, for being mostly grown on their own roots they can be secured true in this way, though they do not so

rapidly make fine standards as those budded in nurseries; still, when planted out for a year or two in good soil, they straighten and form good trees, provided the side branches are left on for a time to strengthen the stems. These suckers, after being planted in lines 2 ft. apart and secured to stakes for two or three seasons, are fit for planting out permanently. The quantities of Damsons grown in this locality are enormous; they realise 6s. per sieve and upwards, and as they are used for a variety of purposes Damson culture is a safe investment. Freshly-planted trees or bushes of all kinds put in last month are now being top-dressed with manure. The almost invariable custom hereabouts is to put all the manure they receive over the roots; one or two barrowfuls is put round each tree, and soil from beyond the limit to which the roots extend is spread over it. This mulching retains moisture, and I may mention that in the early part of the present year, when a severe drought prevailed before the trees had time to get established, I did not observe a single loss among trees thus treated, while in the case of those left unmulched very many losses occurred. If put on now it serves to protect the roots from frost. Under such a thick coating they make some progress towards getting fresh hold of the soil, and during the following year the mulching gradually works down to the proper level. Growers of fruits generally have some land under vegetable culture, Potatoes being a favourite crop for cleaning the soil, and they come off in good time for autumn planting of fruits. Many are now getting their land ploughed up roughly so as to be fully exposed to the winter's frost. No manure is now applied; it is reserved for spring cultivation. Onions, too, are a useful crop; for these the soil should be deeply cultivated now, as they require getting in early.

**Marketing fruits**, such as Apples and Nuts, is still going on briskly, the price for both having much improved. I find that many growers who have left them lying in the long Grass after the memorable gale in October last, as not worth the expense of sending to market, are now having them packed up, and are obtaining fair prices for them. It is surprising, too, how soundly they have kept, while those stored in the least damaged condition have rotted long since. Good culinary Apples are now realising from 4s. to 5s. per sieve, and dessert sorts from 5s. to 7s., figures which speak well for the demand still existing for fruit. The large hard culinary Pears fit for baking are, as a rule, somewhat neglected, but in soils where they succeed they are a remunerative crop. When once established as standards they require scarcely any attention, and are always in great demand at this season; the following are the best sorts, viz., Verulam, Bellissime d'Hiver, Catillac, Uvedale's St. Germain, Vicar of Winkfield, and Léon Leclerc de Laval. Any large hard Pear that does not ripen fit for dessert may be turned to profitable use in this way.

#### NURSERY WORK.

GEO. BERRY, LONGLEAT.

LIFT and size Larch, Scotch, and other forest trees that are ready for transplanting, and proceed with the filling up of bare quarters as quickly as possible. Look over the nursery and make an approximate calculation as to the quantity of plants that will be required to fill up vacant ground; order plants early from nurserymen, and, if possible, inspect the stock personally before purchasing, or get samples; see that only clean-grown, healthy trees are bought; diseased or otherwise blighted and stunted plants are not worth, as a rule, the labour of laying them into the nursery. Beware of bad-topped or frost-bitten Larch, which I have reason to believe is unusually plentiful this season; when thus injured it rarely recovers, and ought to be destroyed. Oak, Ash, or Sweet Chestnut plants that have lost their leading shoots, or that appear dry and bark-bound, should be cut over close to the ground, and a covering of manure or rich compost spread over the roots between the lines to promote a strong growth when they break in spring. Make cuttings of trees and

shrubs during bad weather when work cannot be carried on outside, and plant them in sheltered quarters as opportunity offers; the soil should be in good condition to receive cuttings, sharp, dry, and moderately rich.

Collect Acorns for seed, store them away in a dry shed, and turn them frequently. Haws may now be gathered and taken at once to a rot heap and mixed with light soil or sand. Old rot heaps of seed should be turned and a thick layer of soil spread on the outside to secure them from severe frost. Look over all seed stored away to see that it is in good condition for keeping over the winter; wet and frost must be excluded from the seed store.

Clean and deeply trench all ground that has been cleared of a crop of trees and is not wanted to be re-cropped until spring. Land that has just borne a green crop need only be cleared of refuse and slightly levelled; if dug now and wet weather follows the chances are the soil will get so saturated with rain that it will not be in friable and workable order until spring. When the weather is dry turn compost heaps and ridge them up sharply to exclude rain; too much rich, dryish compost can scarcely be had for nursery work. It is invaluable for covering the roots of shrubs and trees while planting is in progress during a wet season. Collect leaves, road drift, and edgings, turf, or any other come-at-able material that is worth hauling to the compost heap. Separate heaps should be made of leaves and fibry turf in case each kind might be required for particular subjects. A heap of peat, too, is useful for American plants, and ought now to be put into stack.

Nursery hedges if not already trimmed should now receive that attention; clear away the trimmings to the fire heap at once, as well as all worthless refuse that is unfit for the compost heap; any diseased, damaged, or dead plants about the nursery should also be consigned to the fire at the same time. The following is a good maxim in nursery management: "The healthy and useful nurse and value, but the dying and useless destroy." Nursery stock requires constantly watching and overhauling; if allowed to occupy the same ground too long the plants not only get too crowded and damage one another, but the roots run away in every direction and lose all their fibres; consequently they soon become unfit for transplanting with any degree of safety. Nursery stock well repays good management, but if neglected quickly deteriorates and loses value.

Carriage roads should now receive attention in the shape of edging, weeding, removing leaves, and repairing; keep all water catches, drift holes, or cesspools along the sides of roads clear of deposit. Level in cart tracks in wood rides and drives; see that watercourses, ride drains, and ditches are not blocked up by debris and leaves.

The annual cutting of underwood must now be pushed on; where it does not interfere with the disturbing of game, the sooner all underwood is cut after the fall of the leaf the better; this is a commodity in woodcraft that has sadly depreciated in value all over the country during the past few years, and there appears little chance of the underwood trade improving, at any rate not while the present dull state of the timber trade generally continues. This is the proper season for cutting hedgerow timber, especially Ash and Elm; Beech woods or plantations ought to be thinned now, but care should be taken not to thin too freely, particularly at this time of the year, before the winter's storms have fairly begun. The usual stock of cordwood for home use should ere this be safely housed, or otherwise stacked and kept dry by covering with thatch. The necessary quantity of oven and fire-lighting faggots must be made and kept dry and in good order for use when wanted. Charcoal should be burnt before now in sufficient quantity to last until next summer.

#### KITCHEN GARDEN.

R. GILBERT, BURGHLEY.

THE glorious sunshine, balmy breezes, and pure air which we are now experiencing in the mid-



lands make kitchen gardening one of the most enjoyable of occupations. We are now busily engaged in putting manure on all vacant borders and quarters, preparatory to their being dug up roughly for the winter. Hoeing between winter Onions, Lettuces, and Cabbages, and planting the latest border with Lettuces form the principal part of this week's operations. I may remark that this season here is a most abundant one; everything appears to have done well. Veitch's Giant and Brown and Tait's Broccoli have both done good service; but perhaps the most useful of all mid-winter Broccoli is Snow's. We have a large quarter just showing its snow-white heads—quite vegetable pictures. The weather is now suitable for brightening up the walks with a thin layer of fresh gravel. Winter Cucumbers should now be in bearing. Keep the shoots thin on the trellis, and give a slight touch to the female flowers at mid-day with a camel's-hair brush to assist the setting. Let the plants bear lightly, keeping them steady at about 70° at night, and giving air on all favourable occasions. Tomatoes have become indispensable; our winter house of them, now beginning to colour, will be a useful addition. Keep the heat from 60° to 65° at night, and give plenty of air on all favourable occasions. Chicory, and other winter salads should be brought forward according to the demand.

#### NOTES AND READINGS.

WHAT are "family Grapes?" The term is Mr. R. P. Brotherston's, who has been asserting his views in more than one paper lately. He distinguishes between "family Grapes" and "high class Grapes," and it would appear that the first are an inferior production intended for an employer's table, while the latter are for exhibition or some other and similar purpose not specified, but not for family purposes. These two kinds of Grapes, according to Mr. Brotherston, are obtained by two different methods of culture. "Family Grapes," we are told, "are produced at the lowest possible expenditure in fuel and labour and wear and tear of vineries, and at the same time the Vines stand heavy cropping better, and will last longer." As this includes every good point in Grape culture, it would be interesting to learn by what other and better system "high class" Grapes are produced, for, according to Mr. Brotherston, their method of culture is different, as well as better, but we are not told what it is. If second class Grapes are produced by Vines that bear most fruit and bear longest, and last longest, what other conjunction of favourable circumstances produces first-rate Grapes?

Whatever "family Grapes" may be, however, cultivators will decline to accept Mr. Brotherston's estimate of what they ought to be, even allowing them to be third rate, if we are to regard his own Muscats as family Grapes, which it appears they must be. At least fifty per cent. of the old Muscats under his charge, he states in a contemporary, are seedless, a statement which means that half his crop consists of small unfertilised berries. But the old "Tynninghame Muscats" did not always behave so badly. Not many years ago, in Mr. Lees' time, these Vines produced such magnificent berries that it was sought to identify the variety with the much esteemed Bowwood Muscat, and the "Tynninghame Muscat" became noted as an excellent sort to grow, and was entered as such and in larger proportion than any other in Thomson's book on the Vine and all fruit catalogues, and is still recommended. It is to be hoped that they will yet be restored to their former state of fertility. Their present condition, we are sure, will not be accepted by those who know their history as indicating any useful lesson or practice one way

or the other, unless it be to avoid the kind of culture which has brought them to their present condition. That the party most concerned realises this more acutely than anyone else is evidenced by his own admission, that he finds it needful to dose his Vine roots twice a year with an extraordinary composition, consisting of bone meal, plaster of Paris, and superphosphate-nitre. What must be the condition of Vines that require such treatment frequently administered? Few gardeners have actually to stand over their Vines with the medicine bottle, we should think.

Having said this, we would also protest against the pernicious assumption of Mr. Brotherston that good gardeners distinguish, as he does, between "high class" and another class of Grapes of inferior quality that they consider good enough for their employer's table. It is every gardener's ambition, as it is his interests, we believe, to place his best productions there. "Good family Grapes" are to him also high-class Grapes, but stoneless Muscats do not nor never did come under that head. Nor has it ever been the purpose of horticultural societies or any other body to encourage anything else than the production of high class Grapes for "family" purposes, whatever people may say who wish to set up a lower standard of excellence for reasons understood by themselves alone. It is teachings of this kind which has tended to bring shows and showing into disrepute with many employers, and they may point with some reason to the effusion of Mr. Brotherston as corroborative of their views, but they may rest assured that his opinions are not shared by any considerable number of gardeners who understand their duty.

When we find a writer placing assertions and opinions like the foregoing before the public, it is not surprising to find the same party stating that the beginning or middle of February is the latest period at which it is safe to start Grapes, for keeping in the Lothians, in order to have them ripe in August, a month too soon. Clearly he is recording his own practice and success in this case also, whatever the latter may be like, in ignorance of the fact that his near neighbours under exactly similar conditions start their late Vines two months or six weeks later than him, and ripen them to perfection, as always was done at Dalkeith Gardens, as Mr. Thomson states in his book, and as Mr. Dunn practises there now, and whose Grapes are not ripe till October. Mr. Thomson did not cut the Grapes from his late Vines at Dalkeith till the close of February, so he could not start them for a month later at least for fear of bleeding, while he says the end of September is the time they should be ripened, and he records how the sap only "began to rise in the Vines on the 15th of April." The vocation of some people ought to be reading and learning, not writing. There is no objection to their recording their failures if they feel disposed to do so, but the public are usually best able to attribute them to their true causes, and in the case before us it is pretty evident where the causes lie.

What other force is it besides heat and light which principally determines the period of maturation in fruits? The question has an important bearing, and it is put in hope of eliciting information on the subject from your readers. A certain French physiologist suggested that it was principally a question of heat computed in degrees, and that, within certain limits, if the plant received the necessary amount of heat within a shorter or longer period it was sufficient. This theory does not by any means

explain the whole matter, however, for it is well known that plants subjected to the same degree of atmospheric and earth heat require different periods of time under otherwise different conditions to come to maturity. For example, the Black Hamburg Grape requires about five months and longer to ripen its fruit from the time of starting the Vines, and the Muscat of Alexandria seven months; but one noted author on Vine culture has stated that he has compassed the whole period of growth with the Hamburg in four months at the most unfavourable season of the year, and at a lower mean temperature, while the Muscat has been brought by other cultivators to a high state of perfection in less than six months, the usual range of temperature not having been exceeded. What it is desirable to know is what kind of treatment did the Vines receive that manifested such precocity. If the period of maturation can be reduced by a month or two without resorting to the Frenchman's plan of cramming the five or seven months' heat, usually given and required, into the four or six months, it is clear that something is yet to be learned on the subject of fruit culture that it is most desirable to know. Dryness at both root and top accelerates the ripening process, but no case is recorded, we believe, in which that accounted for such a large gain in time as a month or six weeks in five or seven months in the fruiting of the Vine. Practically, if Muscat Grapes can be ripened to unusual perfection before the end of July, Vines being started in February, and the fruit kept in the best condition till the beginning of March the following year, and this for years in succession, in the north, as has been stated in a contemporary by one whose testimony cannot be doubted, the practice is one worth adopting generally, if we know how to put it in operation. If six months is sufficient for Muscats, it would not be necessary to start the Vines till March by those who ripen their Grapes at the end of August, and those who are satisfied to ripen them a month later still need not start till April, and thus save both labour and fuel. Probably, too, the same causes that accelerate the maturity of Grapes would hasten the ripening of Apples and Pears and hardy fruits generally, and it cannot be denied that this is a thing much to be desired in this country at the present time.

PEREGRINE.

#### GARDEN IN THE HOUSE.

##### WINTER WINDOW BOXES.

At this season, when the summer occupants of window or balcony boxes are cleared off, questions are often asked as to what they are to be filled with, and as we cannot get a brilliant floral display during the dull period of the year we must make as cheerful an effect as possible with bright, shining, healthy, dwarf shrubs, and carpet the surface with plants hardy enough to stand any weather. Amongst shrubs that we find serviceable for this purpose are some varieties of Conifers, which are especially adapted for this kind of decoration. The *Arbor-vitæ*, that change colour with the changing year, *Juniperus chinensis*, *Cupressus Lawsoniana*, *Retinosporas* in great variety, and miniature *Hollies*, *Portugal Laurels*, *Euonymus*, *Berberis Aquifolium*, all look well in boxes. Small plants of *Yucca recurva*, several varieties of *Hellebores*, and among dwarfier plants *Wall-flowers*, *Santolina incana*, *Myosotis*, *Pansies*, *Arabis*, *Aubrietias*, and trailing plants of variegated *Ivies*. After these are planted, bulbs, let in with a dibble, will not fail to put in a welcome appearance in spring. They will require but little water at this time of year, for generally they get more than enough to supply their wants from the rainfall. But if they are so situated that the rain is kept off they must have one good watering with a



rosed watering pot, to settle the soil and wash the leaves clean; after that they withstand severe weather if rather dry better than when over saturated. But as soon as danger of severe frost is over they must be kept well supplied with moisture. I may mention that neat little bushes, suitable for the above purpose, are obtainable at very low prices at all our leading nurseries, and can be kept for several years by planting out in summer in a partially shaded portion of the reserve garden. The biennials mentioned may be easily raised by anyone having a square yard of soil to sow a few seeds in during the summer or autumn.

J. GROOM.

**Table decoration.**—For breakfast and luncheon we use a very elegantly cut glass vase, oval in shape, with four branches, each holding one small round glass dish, the whole mounted on a handsome silver stand 1 ft. in height. This was decorated on the 18th and 19th ult. with fine blooms of the Tea-scented Rose called President, plenty of its foliage being used along with it; small bunches of Violets with their foliage were also intermixed with the Roses. In each of the branches were placed one fine bloom of the same Rose and its foliage. On the 20th and 21st they were filled with Maréchal Niel Roses and plenty of its foliage. On the 22nd and 23rd they were furnished with the pure white blooms of the Tea-scented Rose, Niphetos, the centre vase containing a few small trusses of an orange-scarlet, semi-double Pelargonium, the whole being fringed round with *Adiantum gracillimum*.—RICHARD NISBET, *Aswarby Park, Folkingham*.

**A novel window plant.**—The Rev. Mr. Ewbank tells me that *Mutisia decurrens*, a rare climbing Composite, with Gazania-like flowers, grows well with him in a back room window. Direct sunlight and rain upon its leaves are alike fatal to its growth, as he tells me after having tried the plant frequently.—F. W. B.

[We believe that various plants not easy to grow out of doors in our chilly climate would enjoy a pleasant window in a room anywhere out of the smoke.]

**Belladonna Lilies and Amaryllis.**—A lovely bunch of Lilies rose to my remembrance when reading the remarks on Belladonna Lilies lately in THE GARDEN. It was an old-fashioned quart jug filled with pink Belladonna and scarlet Amaryllis blooms, broken by green and tinted sprays of Virginian Creeper and one straggling spray of sulphur-yellow Chinese Chrysanthemum; the mixture may sound strange, but the effect was excellent.—TUBEROSE.

**Aralia Sieboldi in the house.**—How very graceful and effective this plant looks in a house placed in a good vase or basin, and not in any showy or vulgar pot! Its fine glossy leaves and excellent habit are seen to advantage, and anybody with a greenhouse should grow a few good plants of it for the house in winter.

#### ASTON-CLINTON STRAW MATS.

RATHER more than a year ago you did me the favour to insert a recommendation of the straw mats for frames and pits made by the poor boys at Aston-Clinton, near Tring. Will you again allow me to say a word or two in their favour? I used them myself last winter side by side with the Russian Archangel mats, and my experience was that they kept out as much frost again as the latter; in fact, the plants in the frames protected by the Aston-Clinton mats were almost entirely uninjured, severe as the frost was. I intend for the future to use nothing else. The mats sent out this winter are made of unthreshed instead of threshed straw, and are much more strongly and neatly put together than heretofore. Of course this entails a slight addition to the price, but I think no one will object to pay 2d. more for a greatly superior article. The mats last year were 2s.; they are now 2s. 2d. each. Messrs. Sutton, of Reading, have just ordered a large number for use during the ensu-

ing winter. All those who have used them speak favourably of them. Applications should be made to Miss Molique, Aston-Clinton, Tring.

H. HARPER CREWE.

[We quite agree with Mr. Crewe in his advocacy of these excellent mats, and hope that their manufacture with such a good aim may be useful to the boys. We do not see the least need of going to the ends of the earth for mats when a better material is at our hands. But a home-made article like this should beat the foreign mats in price, and our only doubt about the straw mats is whether they could not be made at a cheaper rate, especially with boy labour. As regards protection with straw, we believe it to be altogether more efficient than protection with matting. It is in common use in France and on the Continent generally, and preferred in severer climates than our own; there it is a common source of employment for men on wet days to make the neat straw mats that protect both the fruit walls (supported on slight wooden framework), and also pits and frames. It would be well if we adopted the same practice, and took advantage of the various contrivances and machines used abroad for making these straw mats in a simple manner. In the meantime those who take the trouble to make them for us, especially with the aid of poor boy labour, deserve every encouragement.]

#### KINGSTON CHRYSANTHEMUM SOCIETY.

THE fifth annual show of this society was held in the Drill Hall, Kingston-on-Thames, on the 17th and 18th inst. The first prize, the champion challenge cup, a magnificent silver goblet lined with gold, was awarded to Mr. Faulkner, gardener to F. R. Leyland, Esq., of Wootton Hall, Liverpool, for 48 blooms of Chrysanthemum—24 incurved and 24 Japanese. Of the incurved varieties fine specimens were exhibited of *Jardin des Plantes*, a brilliant yellow coloured kind, very large and full, perhaps the most beautiful flower in the room; *Empress of India*, a lovely pure white snowball 5 in. across, and *Golden Empress*, a delicate yellow, resembling a Dahlia in the severe regularity of the petals. *White Globe*, was smaller, but exquisite in shape, and *Venus and Beauty* were remarkable for their bright pink colour and closely folding petals; while Mr. Bunn and Guernsey Nugget were brilliant yellow and of good size. Of the rich looking fringed Japanese Chrysanthemums the best of the yellows were *Soleil Levant*, *Peter the Great*, *Fulton*, and *grandiflorum*. Of the whites, *Ethel*, a choice looking plant with broad, stiff petals; *Fair Maid of Guernsey*, and *Album plenum*. Of pinks, *Daimio*, very bright pink, was lighter on the reverse side of the petals. The flowers were well staged and tastefully arranged, and on the sides were grand specimen plants, some of which had several hundred blossoms on them. Many of the standards were carefully trained on frames, so as to form enormous bouquets, each shoot ending in a flower with very little green between. Mrs. Rundle, white; Mrs. Dixon, bright yellow; and George Glenny, lemon coloured, formed the best standards. Near the entrance were tables of Chrysanthemums intermixed with other cut flowers in vases and stands for the drawing-room, and some of the floral combinations were very effective, perhaps the best being the white Japanese Chrysanthemum *Ethel*, scarlet Pelargonium, and Maiden-hair Fern. The spacious hall was tastefully decorated with Palms, among which we noticed a good supply of well grown *Cocos Weddelliana* and *Crotons*, *Marantas*, and other fine foliaged plants, which were placed so as to form a foreground to the high bank of many coloured Chrysanthemums on the sides. There were also some good Cyclamens and some pretty standard yellow *Capsicums* in full fruit.

There were *Anemone*-flowered Chrysanthemums, too, and our old friends the *Pompones*; these formed a valuable contrast, though it was impos-

sible to bestow much attention upon them after gazing at such beautiful varieties as *Jardin des Plantes* and *Empress of India*. These show what an admirable exhibition flower the Chrysanthemum is, and to what perfection it can be brought by skilful cultivation. J. G. L.

#### OBITUARY.

JOHN DENNY.—We have to announce the death of Dr. John Denny, which took place on the 15th inst., at the age of 62. Dr. Denny was well known to horticulturists, chiefly for his work in connection with the hybridisation of *Pelargoniums* of the zonal type, with which he was highly successful, and has left many a fine variety to attest his skill. He was for many years connected with the Royal Horticultural Society, being a member of the council and vice-president, as well as chairman of the Floral Committee.

JOHN CRITTENDEN, of East Farleigh, died a few days ago, aged 90. He was well known to growers of fruit for market, and formed one of the now fast diminishing list of Kentish yeomen. Twenty-five years ago, when I first knew him, he was a hale old man, and his pet Damson (Crittenden's Prolific) was then in the heyday of its popularity. I never could exactly make out how he first became possessed of it, but I believe he found it wild in a wood near his residence about the time when the battle of Waterloo was fought. For some years it remained in his possession and that of a relative of his living in a neighbouring parish. Eventually, however, it got into other hands, at first clandestinely, but about 1841 openly, and its merits soon found it admirers. First, people in Mr. Crittenden's immediate neighbourhood began to plant it, and then those further off, and ever since it has been largely planted. I was told that one grower in East Farleigh estimated his growth of this Damson for the past season at 5000 bushels, while other growers have equally as many, and there is not a cottage garden in the parish without its Damson tree of the right sort, as it is called. Most of the old kinds have been cut down and grafted with it or grubbed up. In East Farleigh parish this Damson is grown most extensively.—J. R.

**Wasps.**—Have any of your correspondents noticed an unusual number of wasps about up to the present date? If they have, will they say in what part of the country? I find plenty here, all males; they feed on the exudation of scale insects which abound on some Alders in the garden. Is it not a sign of the mildness of the weather? for I suppose they die off like the common workers before winter.—A. RAWSON, *Bromley Common*.

**Names of plants.**—F. W. *Cotoneaster frigidus*.—H. N. *Apparently Salvia Cameritoni*.—*Subscriber*.—*Oncidium Forbesii*.—C. M. O. *Chrysanthemum coronarium fl.-pl.*—Mrs. S. S. *Coronilla Emerus*.—A. P. H. *Schizostylis coccinea*.—Mac. *Santolina viridis*; *Jasminum nudiflorum*.—F. G. *Begonia metallica*; 1 and 2, *Abies canadensis*.—C. M. O. *Andromeda Catesbaei*.—J. S. *Peboassara*.—*Cotoneaster vulgaris*.

**Names of fruit.**—W. J. M. The Pears we have named—some with doubt, as they are decayed and poor specimens. The Apples are probably local sorts not recognisable here. Local means of information should be exhausted in such cases and not more than four kinds sent to us, each represented by several specimens showing the range of the variety in size and form. The Pears are: 1, *Beurre d'Eté*; 2, *Bishop's Thumb*; 3, *Josephine*; 4, *Swan's Egg*; 5, *Figue*.

#### COMMUNICATIONS RECEIVED.

A. H. T.—J. G. C.—J. G. B.—W. E.—M. I.—B. F.—S. M. & Son—W. P.—J. S.—P. E.—S. & Co.—J. D.—H. N.—R. R. A *Subscriber*.—W. E.—Miss T. J. S.—W. F.—J. C.—G. B.—R. G.—T. H. M.—P. G.—L. G.—P.—N. F.—J. S. W.—Delta—J. M.—J. S.—G. S.—B.—T. L. C. B.—T. B.—G. T. D.—H. H. C.—T. D.—J. R.—P. N. F.—S. B.—J. S.—J. C.—Old Mortality—F. W. N.—H. M.—B.—J. S.—A. M.—Miss M. J. G.—A. J. M.—J. N.—G. W.—S. S.—W. W. G.—C. G. T.—C. W.—C. C.—A. P. H.—F. H. C.—W. P. M.—D. T.—F. K. & Co.—C. S.—F. J. R.—W. N.—A. B. C.—W. L.—R. D.—J. P. M.—J. D. S.—J. H.—Mac. J. M. T. C. & Co.—D. M. G. W.—C. L. L.—C. M. O.—G. B.—J. S. & Sons—J. M.—J. C.—C. E.—F. G.



No. 524. SATURDAY, DEC. 3, 1887. Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare.*

## THE CONIFERS AT DROPMORE.

We had a pleasant talk with Philip Frost the other day at our office, and were glad to see his cheery face and hear that the great Conifers at Dropmore had passed through the ordeal of the big storm without much loss to speak of. Most gardeners look upon a tap root as the enemy of their race, but Mr. Frost is of a different opinion. In establishing his big trees he begins by putting the tap root far down in the mass of good soil which he gathers together, and only after it is made firm and happy below does he begin to spread out the surface roots, which most of us regard as all-in-all. Hence when trees get anchored to the soil, and as the masses of it are both deep and rich, it is not easy to move them. As he remarks, "Why do they put the mast of a ship down deep in the hold?" No pulling up masses of the soil at Dropmore, as was the case with many of our blown-down trees lately; the depths of soil are not to be disturbed! In these moist masses of good earth the Conifers from California and other countries find also the moisture which Conifers generally get on their native hills, and thus they escape the drought which they certainly would not escape on the natural soil of Dropmore. These facts are very instructive; but while the first point is the great success attained, the essential one in relation to the planting of the country generally is that such trees may succeed under these circumstances, and be not at all adapted to face the general conditions of our soil and climate. One cannot find a Philip Frost every day with 150 loads of good loam for one tree.

## BERRY-BEARING BUSHES.

Now that the dark dull winter season is approaching, and that Christmas is within measurable distance, what out of doors is so bright and cheering as berry-bearing bushes? Wherever the eye turns, as a rule, this season—always excepting deciduous trees and shrubs—the prevailing colour is green. There are now no flowering shrubs, nor, as a rule, variegated foliage to vary the monotony. Walking through some of our best and most intelligently planted garden grounds lately, it struck me, as this is the time for transplanting and making alterations, that it would be well to bring under the notice of the readers of THE GARDEN the claims of berry-bearing trees and shrubs for lighting up and contrasting with the occupants of the winter landscape. Very many came under my notice to which I may briefly refer, but your readers may kindly add to the number. Taking first those that may unqualifiedly be described as hardy, perhaps the premier place should be accorded to the well-known Mountain Ash (*Pyrus Aucuparia*), the stately Rowan tree of the poets, and in many places known as the Quicken tree. I have seen it growing high up on Snowdon, near the summit of the Sugar-loaf Mountain, in between the rocks on a railway cutting near Havre, and a friend told me the bright berries cheered him through Northern Norway. Planted in recesses in the shrubby border, or in the back parts of the wild garden, it is equally at home. Writing from Ireland, perhaps I should give the next preference to the common Irish *Euonymus*, though it cannot be said to be so hardy. The berries are of a curious shape,

of a bright purplish crimson colour, and very attractive at this season, when the exocarp splits to evolve the scarlet seeds. I noticed it planted alone, but it should contrast well planted between evergreens. Of Hollies, most people prefer the golden or silvery variegated kinds, but at this season the deep red berries stand out best in relief from the dark green plain foliage. Those with yellow berries, for variety and effect, should not be omitted. I cannot remember a season when the berries were so general and so numerous; and as there is no immediate likelihood that the birds shall require either those or others to be named, they may be expected to make Christmas more festive. Until within the last two years we had a large number of *Arbutus Unedo* covered with their rough handsome crimson berries from this into spring; now, except a few soft shoots from the old cut-down roots, nothing remains, and this is general. The *Cotoneasters* for hardiness should have been previously mentioned. There are few handsomer coverings for a useless space along a wall; but there are varieties such as *C. Simonsi* not so generally grown as its brilliant berries warrant at this season. Equally hardy and of still more varied colours are the *Barberries*, low growing, and suitable where some of those mentioned would not suit. If a comparatively well sheltered corner can be had, where in a very severe winter a little protection can be used, none are more desirable than the variegated Japan *Aucubas*, with one or two male plants convenient. Like *Solanum capsicastrum*, if grown in pots, they can be readily transplanted to the conservatory now. Of less showy appearance, and not quite hardy, are shrubs like the *Pernettyas*. Perhaps I should not omit the parasitic *Mistletoe*, readily grown on the common Apple or Thorn.

*Clonmel.*

## THE BAD EFFECTS OF GRAFTING.

We have a very interesting letter from Mr. J. Van Volxem, of Brussels, on this important subject, particularly in connection with ornamental trees and shrubs, and their frequent loss through such storms as we have lately had:—

"I am sorry the loss of 'Mr. Stevens' fine Rose *Acacia* has so soon proved how right I was about the inconvenience of propagating *Robinia hispida* by grafting it upon *R. Pseud-acacia*. It grows too strongly, and although it flowers perhaps the more freely by it, it is at every fresh wind likely to be broken down at the connection, necessarily always its weak point, and the more so as the young shoots are so very heavy. As a sequel to a note of mine on the subject, my old friend, Mr. Thomas Meehan, has been kind enough to send me by sample post a living plant of *R. hispida* upon its own roots, so that within two or three years I shall be able to say how it behaves grown in that way. By the inspection of the plant I ascertained that, as I had surmised, this species is easily propagated from root cuttings. I would advise those of your readers who are fond of nice flowering hardy shrubs not to wait for the result of my experiment, and to order at once from Mr. Thomas Meehan, Germantown, near Philadelphia, Pa., such small plants as he sent me. He made me a present of it, so I cannot say what he charges for its most ingenious, light, and safe packing—a curiosity in its way. But in his price list he charges 25 cents (1s.) for such small plants, and 2 cents (1d.) was the postage to Belgium.

Returning to the subject of grafting, I cannot too strongly recommend to plant trees growing upon their own roots. The late gales have again proved how easily grafted trees, 3 ft. or 4 ft. in

girth, with sound connections, are broken at the junction with the stock. Besides, the grafted trees seldom grow to the same size, and sometimes their shape is much altered; for instance, *Tilia argentea* when ungrafted grows twice as fast and as large as the common Lime, straight as an arrow, and never affects the mop-headed form it almost invariably takes in our gardens because grafted. Almost the only instance in which I prefer grafted specimens is purple-leaved Beech, because we choose to propagate from the very best variety found during the last century amongst millions; while from seed at midsummer the nurseryman goes about his seedling beds and divides his young plants into green, copper, and purple-leaved (in the best years about a third of each)—true purple-leaved they are certainly, but some unfold or fade green, and are true only at mid-year, while those we propagate from are from the beginning of the brightest purple, and remain dark until their leaves assume the rich golden hue of autumn.

## DECAY IN THE APRICOT.

In the north of England and in many parts of Scotland during the last seven years, canker or decay has killed, or partly killed, a great number of Apricot trees. All gardeners know by experience the indications that tell too plainly that their trees are doomed to die piecemeal. During a visit which I made this autumn to Cleveland, in Yorkshire, nothing surprised me so much as the unhealthy state of the Apricot trees. Thirty years ago in that district canker or decay in the Apricot was rarely seen. On the walls of farm-houses and cottages Apricot trees had grown for fifty years and rarely missed a crop. So abundant was the crop, that many cottagers paid their rent from the yearly produce of one tree. In 1851 I planted one Apricot tree on the front wall of five cottages belonging to my employers. The cottages were all in a row, and it was a matter of emulation amongst their tenants to see whose tree would first cover the wall. One succeeded long before the others, through giving continuous supplies of horse manure, gathered in the lanes. In passing these cottages a few years ago I was astonished to see that none of the trees were alive; on inquiry I was told that the tree just alluded to was the first to die, bit by bit. Up to within a few years, the trees were healthy and bore fine crops, but now both old and young trees are dead. In no part of England or Scotland have I seen the Apricot thrive better than in Cleveland, a circumstance doubtless attributable to the soil and subsoil of the district, helped by a climate modified by south winds from the sea. It is evident that one must attribute the death and decay so prevalent amongst our Apricot trees in the north to climatal causes. I have seen or heard of few trees in this quarter really killed by the severe frost of the last three winters. There is no doubt that altogether we must trace the decay in our Apricot trees to the cycle of unprecedented years through which we are passing. Were it only the severity of our winter frosts with which we had to contend, we have means available for protecting our trees from their effects; but it is to our springs, summers, and autumns combined to which the effects I have described must be traced. Take the present autumn, for instance; since the beginning of August we have hardly had really one dry day, and the sun has seldom made its appearance. The consequence is that the fine crops of Apricots that used to adorn the walls of many gardens in this quarter have not been seen for several years back. One fallacy regarding the matter is now, I think, fairly exploded—the notion that a hard winter is the







folium and its varieties *Hodginsi* and the yellow fruited kind, are at present loaded with berries, the crop being unusually plentiful, and help to give a cheery appearance to our woodlands during the winter months. The Spindle tree is now entirely destitute of leaves, the masses of rose, red, and white berries seeming to occupy the places held by these during summer. The beautiful crimson berries of the *Skimmia* give to the plant a singular appearance, especially when on rockwork, for which its dwarf habit recommends it. The yellow-berried Holly is particularly good, the berries contrasting beautifully with those of the green kinds. The yellow-berried Yew is also a great acquisition for mixing with the commoner kinds, the golden yellow berries being shown off to advantage by the dark green foliage."

\*

**CHRYSANTHEMUMS FROM STRAFFAN.**—The beautiful Elaine, white, in bold trusses of various sized flowers, accompanied by Progne, an amaranth-coloured and violet-scented *Chrysanthemum*, and the Jardin des Plantes, with its golden trusses—all showing the kind of *Chrysanthemum* growing that one enjoys best. The large, well-grown bloom of the London *Chrysanthemum* show is a very fine thing in its way, and the poor flowers of the ill-grown plants are nothing to boast of; but what is most to be desired is a growth "between the two"—a well-grown plant with the buds not thinned out. One or two flowers full sized, and the others gradually smaller in size, is the prettiest way. Such shoots are most graceful when cut, or in any other way. Speaking of these plants for general purposes, for cutting for rooms, what is wanted is a more vigorous growth of the plants during the summer and autumn, so as to retain their foliage well towards the base. A vigorous, graceful bloom is best. Training, thinning, and tying *Chrysanthemums* into so-called perfect shapes is poor work. A thoroughly free plant, never allowed to get skinny or ragged about the base will give us all we want if the kinds are well chosen. We have seen excellent results from growing plants well in old Celery trenches during the summer and autumn, and carefully putting and transferring them into a cool house just before flowering time. They had handsome and lasting foliage, which is a great point in *Chrysanthemums*, and one which is often taken no notice of where the attention is fixed on the blooms.

\*

**CYPRIPEDIUM FROM CLOVENFORDS.**—This place is so much connected in one's mind with Grape growing on an extensive scale, that a bunch of handsome Lady's Slippers is a pleasant surprise. Mr. Thomson, jun., says, "I send for the editor's table some blooms of *Cypripedium Chantini*, also one of the common form of *C. insigne*. *C. Chantini* is vastly superior in size, and the white tip at top of sepal is also much larger. I also send *C. Maulei*, so that you can compare all three forms of *Cypripedium insigne*. Could you not figure *Cypripedium Spicerianum*? I am sure it would please your readers; it is such a beautiful flower." The curious greens and delicate browns of these flowers are very beautiful seen in certain positions by artificial light, and we are much obliged to Mr. Thomson for such fine things. We have not as yet seen a good plant of *C. Spicerianum*.

\*

**LASIANDRA MACRANTHA.**—This large puce-purple tropical-looking blossom comes from Messrs. Rodger, McLelland & Co., with the following suggestive note from their manager, Mr. T. Smith, who knows the wants of many plants so well: "I find it to be a most useful and showy late-blooming plant, grown cool during summer,

in fact, we put many of ours out-of-doors; thus treated, its growth is more compact, and the ends of all the branches become well set with flower-buds, which open in succession for two months or more. The large rich purple flowers harmonise well with other flowers at this season, including *Chrysanthemums*, and a temperature which suits them will suit this *Lasiandra*. *L. macrantha floribunda* does not thrive under the same treatment."

\*

**A BEAUTIFUL STOVE SHRUB.**—From the garden at Farnboro' Grange, Mr. Crook sends flowers of a bright and handsome stove shrub. It is *Dipteracanthus affinis*, which, from some unaccountable reason, is unknown in gardens generally. The flowers, like those of a *Bignonia*, are large and of a brilliant orange-red, set off by the shining green foliage. Mr. Crook writes—"With me the habit of growth is such as to render it very suitable for a pillar or a trellis, and I consider it equal in this respect to a *Combretum*, as it makes a good pot plant. It is not at all shy flowering, for quite a small plant has borne some thirty flowers this season." Such a handsome shrub as this is certainly worth attention, for its worth is higher than that of the majority of new introductions. It was first in cultivation some twenty years ago.

\*

**THE PURPLE ROCK MILKWORT.**—Well-flowered specimens of this charming little alpine shrublet from Mr. James Backhouse, of York. It is a good purple and golden variety of the pretty old *Polygala Chamæbuxus*. It was imperfectly figured in THE GARDEN in the early days of our plates, and it would be difficult to show its beauty. There is nothing more lovely for trailing over a warm sandy spot on the rock garden. When it spreads into wide tufts we may look for quite a new aspect of alpine vegetation on the rock garden through this charming little plant, which seems to show, as it were, in a nut-shell the beauty of its larger relations of the Australian bush.

\*

**STOCKS IN NOVEMBER.**—Frequently plants come to us showing late or early blooms, but in good truth it would be more creditable to them to remain closed, for their appearance is not cheerful to contemplate. Mr. Bedford sends from Straffan a batch of Stocks which are as fresh, bold, and bright in colour, and as fragrant as if gathered on an August morning. He says he has great numbers of them in various colours, which indeed is remarkable, and no doubt partly owing to the unusual weather. He states the climate is not a good one. The Stock is one of our grand old plants, which one can hardly make too much of; most people make a great deal too little of it.

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**THE PINE-APPLE-SCENTED SAGE (*S. rutilans*).**—Lately, in a well-managed little greenhouse, I was charmed to see the long and graceful spikes of this *Salvia*, as bright as the old *S. splendens*, but far more graceful. Mr. Bedford now sends good specimens from Straffan, where it appears to be justly appreciated. He says, "*Salvia rutilans*, Pine-apple scented, is a fine thing when well done, and has an advantage over other kinds by retaining its spikes complete a much longer time, as young flower buds keep pushing from the base of the old ones. It has been in flower five weeks."

\*

**COTTON WOOL** is a great nuisance. Many of our friends send flowers in it, and nearly always to their injury. It absorbs what moisture there is in the delicate flowers, and is difficult sometimes to remove from them. Its softness and elasticity tempt people to use it, whereas a little damp Moss is infinitely better in every way.

## ORCHIDS.

### ORCHIDS AT DOWNSIDE, LEATHERHEAD.

IN no department of plant culture has there been such a decided advance as in that of Orchid culture. One seldom visits a collection now in which there is not found some new departure from the beaten track so persistently followed by the older school of cultivators. Improvements, however, are most apparent in collections that have sprung into existence within the last few years, as, for instance, in that of Mr. Lee, Downside, in the picturesque neighbourhood of Leatherhead and Dorking, and but a few miles from Sir Trevor Lawrence's famous Orchid garden at Burford Lodge. The Downside collection has now become one of the most important in the country; it is extensive, very select, well cultivated, and thoroughly representative, embodying many of the choicest and rarest species. The houses which contain it (in number about 12) cluster on a hillside in a picturesque and compact group. They are all of recent construction and well calculated for the successful growth of Orchids. As far as practicable each important section has a house devoted to it; for example, there are houses specially for *Masdevallias*, *Odontoglossums* requiring cool treatment, and also for *O. vexillarium* and *Roezli*, that need a warm temperature; others again are occupied by *Phalænopsids*, *Cattleyas*, and *Lælias*, and the larger genera of *Dendrobium* and *Cypripedium*, &c. The heating and ventilation are well carried out, particularly the latter. In all the small houses there are longitudinal ventilators in the ridge above, and several along the side walls, so arranged that the indraught on entering comes in contact with the heated air from the hot pipes. By thus having the top ventilation along the ridge there is no obstruction to the shading material, and in order to admit light when the shading is in use there are supports raised a foot or so above the roof on which to run the rollers. In every house there are capacious water tanks under the stages, which catch all the rain-water from the roofs, and with this the plants are always watered. The tanks, even in summer, are rarely empty, and each is fitted with a ball tap arrangement, so that the overflow is taken to a reserve tank. In some of the houses one of the tanks is supplied by hard water used for "damping down" and washing the houses, so as to economise the soft rain-water. The pathways are all paved with grooved tiles, so that while the grooves are full of water the path is practically dry to walk upon. We noticed, too, with regard to the stages, that in most instances there was a temporary stage placed upon the permanent one, the supports of the former being placed in zinc pans kept filled with water, so that the whole stage is isolated, and, therefore, free from the depredations of insects, slugs, &c. In the cool Orchid houses the permanent stage is made watertight, so that during excessively dry weather it may be filled with water for the purpose of giving off evaporation to keep in the atmosphere the requisite degree of moisture. Among the most noteworthy sections of the Orchids were the

**Masdevallias**, which comprise a remarkably rich collection. They occupy a long, narrow lean-to house with a northerly aspect. Some of the specimen plants are the finest we have seen. Of *M. Harryana* there is a plant fully a yard across, which last season bore upwards of 130 flowers. This plant is the lovely variety known as *Russell's*. There were also fine examples of *M. Veitchii*, *Lindenii*, and *tovarensis*, the latter beautifully in flower, the clusters of snow white blossoms being the most attractive of any in the house. The canary-coloured *Davisi* was finely in



flower, as were also the ever-flowering *M. ignea*, the neat little *Estradæ* and *xanthina*, the latter a quaint little species with small yellow flowers; the singular *M. macrura* and the extremely rare *M. Shuttleworthi*—the latter an exquisitely pretty Orchid, and Mr. Lee's plant represents the finest form of it that we have seen, the peculiar freckled sepals being brighter than those of others. Of the rarities among *Masdevallias* not in flower may be mentioned *M. rosea*, for the flowering of which every Orchid lover is eagerly waiting; *M. radiosa*, *Wagneriana*, *trochilus*, *Denisoni*, *Reichenbachii*, *Backhousiana*, and others of the Chimeroid group. The majority of the *Masdevallias* are grown in pots or suspended pans; even the Chimeroid section that flower from the base of the plant. This practice is followed here, as the plants are found to increase and grow better in pots than in baskets, a circumstance no doubt attributable to the plants not being weakened by flowering.

**Odontoglossums.**—These, like the *Masdevallias*, are exceptionally fine, particularly a few of the most beautiful and popular types such as *O. crispum*, to which a couple or so of houses are entirely devoted. There were not many in flower, but sufficient to show that there are amongst them some fine varieties; a couple of plants of a pure white variety named *clarum* were highly attractive. The singularly beautiful *O. hebraicum* was finely in flower, and the flowers showed in the markings a stronger resemblance to Hebrew writing (from which its name is derived) than we had before noticed. Other species in flower were *O. bictonense*, of which there was a wonderfully dark variety named *rubrum*, *O. prænitens*, *O. tripudians* with a very fine spike, and the singular *O. angustatum*, with its cumbrous bulbs and flower-spikes of dull hued blossoms 3 yds. or 4 yds. in length. Of *O. vexillarium* and *Roezli* there are large numbers grown; both are represented by finely-grown plants, and in numerous variety, including the autumn-flowering *rubellum*, which has lately been so highly praised, and the white-lipped variety. Both of these species are grown in a higher temperature than that afforded the rest of the species, except *O. citrosum*, which is very numerous and is grown with them in the *O. vexillarium* house.

The Mexican houses contain a rich collection of *Cattleyas*, *Lælias*, and similar genera, though few, except *L. marginata*, *Dayana*, and *præstans*, were in flower, some of the latter measuring fully 4 in. across, and very deep in colour. Among the *Cattleyas* we observed some very fine examples of such varieties as *C. Dowiana*, *aurea*, *imperialis*, *gigas*, *exoniensis*, *Triane*, and *Mossii* in endless variety, as well as a gigantic mass of the noble *C. Leopoldi* and a quantity of the beautiful *Lælia harpophylla*. In a few weeks there will be a grand display of *Lælia anceps* and its varieties, including the chastely beautiful white variety. The collection is also rich in other white varieties, among which are the white *C. Skinneri* and *C. elegans*, the white *Cœlogyne cristata* and *Lycaste Skinneri alba*.

The East Indian section is as numerous as the preceding, and a capital idea is that of growing the *Saccolabiums* and *Aerides* in suspended baskets and the *Cypripediums* beneath. The beautiful new *Aerides Leeianum*, named in compliment to the owner of this collection, is represented largely, and shortly it will be in flower.

*Mesospidium vulcanicum* was one of the most beautiful of all the species in bloom, and seldom have we seen it in such perfection. On one spike we counted about a score of blossoms of large size, and of the richest rosy pink. This

beautiful species ought certainly to be among the most popular of all Orchids, for it flowers when there are few others in flower, and it is one of the most manageable of any cool house section.

W. G.

#### CALANTHES NOT OPENING THEIR FLOWERS.

THE position, and also the temperature in which your correspondent's plants have been kept (p. 495) seem all that can be desired, but their not flowering is not surprising if moved, as they are said to have been, into an orchard house, which, by the way, if kept at 60° at night in autumn is differently managed as to temperature from what most people approve of. Nothing that can be done for the plants after being treated in the way described will induce them to open their flowers properly this season; and if your correspondent follows the advice given by "T. C. W." (p. 522), most assuredly he will continue to fail with them. Of all the Orchids in cultivation these *Calanthes* are the most exceptional in always requiring to be kept hot; even after they have done flowering and the bulbs have all their leaves dead, and the roots similarly lifeless, they still require to be in as much heat as any growing Orchids want in winter, for the growth-buds that are to form next summer's bulbs do not plump up until the flowering is over, and not a vestige of live root or leaf remains about them. If during this time until they show signs of growth they are kept cool the bulbs formed the ensuing season are certain to be weak. When growing these plants I never used to move them from the stove where the night temperature in winter was as near 70° as it could be kept, and I have had them so strong that single bulbs have produced two spikes from the base and two more from near the crown, but I used generally to remove the spikes formed near the top of the bulbs as soon as they appeared, an operation which so far strengthened those from the base that I have had over 100 flowers from a single spike. The principal reason why these *Calanthes* are often met with in poor condition is that they have not heat enough either summer or winter, especially during the latter season. And as to the *Gesneras*, I never saw them particularly well done where they have been allowed to remain in a cool temperature during flowering time.

T. BAINES.

—The deciduous *Calanthes* are most useful plants for flowering in the winter season. While in flower they require but little water, and they keep longest in beauty if in a house with a temperature of about 60°, and where the air surrounding them is kept dry. When they go out of flower they should be placed on a shelf at the coolest end of the stove, or in any other structure in which the temperature is not below 50°. They require no water while they are resting, nor should they be disturbed in any way. Towards the end of March they will begin to start into growth, and directly they show signs of new life they should be shifted, for if allowed to form fresh roots in the old soil, they cannot well be extricated from it without injury. Shake the old soil from the bulbs and sort them out into different sizes. Different people grow them in different ways; some put only one bulb in a 6-in. pot, others two and three in 8-in. pots. Where there are plenty of bulbs and the plants are required for the decoration of the conservatory, I find it best to put three large bulbs in an 8-in. pot. I grow all my plants of *C. vestita* rubra in this way, but in the case of *C. Veitchi* I grow one bulb in a 6-in. pot. Where there is a number of small bulbs, and it is desired to increase their size, it is best to give them plenty of pot room for one year, and to put five or six bulbs in an 8-in. pot.

The soil I find best for promoting vigorous growth is good turfy loam and peat. The peat should be broken into lumps about the size of Walnuts, and from the loam all fine particles should be shaken out. This compost, with the addition of a few pieces of charcoal or broken

potsherds, will be found to suit them admirably. The potting should be done as follows: Have clean pots, and if they should be new have them soaked in water for several minutes, and allow them to get dry again before using them. As *Calanthes* like plenty of drainage, the pots must be filled one-third of their depth with potsherds; on the crocks place a layer of rough peat or loam, and then the soil; this may be put in the pot up to within 1 in. of the rim, and should be pressed moderately firm. In planting the base of the bulbs should not be more than  $\frac{1}{4}$  in. under the surface, because it is from the bases of the old bulbs that the new ones rise.

The summer management may now be said to commence. As soon as potted take them to a structure in which a stove temperature is maintained; the generality of cultivators treat them according to the convenience at command, and I may here say that the best I ever saw were grown in a Pine stove from the time they were potted until they came into flower, but as all have not Pine stoves we must do as well as we can. Suffice it to say that when in active growth they like plenty of heat and moisture, and from the time the first leaf unfolds they must not be exposed to the direct action of the sun, or the foliage will get yellow and sunburnt. Those who have not an Orchid house may grow them in an ordinary stove. As some sort of a guide I may mention that the day temperature from the time they are potted until the end of May should be 70°, and that of the night 60°, but as after that time they will be in more active growth, the day temperature ought not to be less than 85°, and from 90° to 95° by sun heat, with 10° less at night. When growing they ought not to be placed where a direct current of air passes over them. We grow ours on a shelf in the stove; under the pots we place 2 in. of Cocoa fibre refuse to retain some moisture about them. There they get the same shading and syringing as other stove plants, and we find them do fairly well. Regular syringing is a prime necessity while they are in active growth. They also require a moderate supply of water. Very little water will suffice until they develop the first leaf, but after that they require more, and I find that they make stronger flower-spikes if they have regularly weak manure water as often as they require watering at the roots.

J. C. CLARKE.

**Anætochili in flower.**—In the stove at Kew there is a most interesting series of these ornamental-leaved Orchids, several of which are bearing their modest flowers, which, however, are very pretty, and contrast with the richness of the foliage. *A. Roxburghi*, which closely resembles the *A. xanthophyllus* of gardens, has small white flowers, exquisitely fringed at the margin. *A. Dawsonianus* possesses the same character of bloom, and being produced in a mass is attractive. *Phrysus maculatus* or *A. pictus* is also in flower, as well as similar genera.

**Orchids in bloom.**—Dr. Paterson, Bridge of Allan, has the following in bloom, viz. :—

<i>Odontoglossum Alexandrie</i>	<i>Oncidium varicosum</i>
<i>bictonense superbum</i>	<i>crispum</i>
<i>constrictum</i>	<i>ornithorhynchum</i>
<i>nebulosum</i>	<i>tigrinæ</i>
<i>Rossi majus</i>	<i>cheiroporum</i>
<i>Uro-Skinneri</i>	<i>cuticellatum</i>
<i>Londesboroughianum</i>	<i>album</i>
<i>grande</i>	<i>aurosium</i>
<i>cirrhosum</i>	<i>Forbesi</i>
<i>Phreatorei</i>	<i>incurvum</i>
<i>Lycaste lanipes</i>	<i>flexuosum</i>
<i>Skinneri</i>	<i>Cypripedium insigne</i>
<i>Lælia anceps</i>	<i>venustum</i>
<i>autumnalis</i>	<i>Harrisianum</i>
<i>atro-rubens</i>	<i>Sedeni</i>
<i>Vanda cerulea</i>	<i>Spicerianum</i>
<i>tricolor</i>	<i>Haynaldianum</i>
<i>Neottia picta maculata</i>	<i>longifolium</i>
<i>Oncidium Schlimi</i>	<i>Epidendrum erectum</i>

**Oncidium Kramerianum.**—Can I flower this Orchid in the same house in which I grow *Dendrobium Wardianum*? and how should it be treated?—T. F. C. [The *Oncidium* and *Dendrobium* succeed well in the same house; the former should be attached to a block, using a little live *Sphagnum* Moss about the roots, which should be kept moderately moist.—G.]



## NOTES OF THE WEEK.

**CHINESE PRIMULAS.**—These beautiful plants have been for some years past made a speciality at the Royal Horticultural Gardens at Chiswick, and this year they promise to be as fine as usual. Though their season is not yet at its height, the houses contain hundreds of them. The single sorts are the showiest, the brilliancy of such fine kinds as Chiswick Red making a charming contrast with the lighter kinds. Rubro violacea, too, is a lovely colour, and we have a great liking for the colour obtained, we believe, by crossing the latter with Chiswick Red, the tint being peculiarly soft and pleasing. The double sorts are likewise in strong force, the old white, an invaluable market plant, being grown here to great perfection; and so are the handsome varieties raised by Mr. Gilbert, of Burghley, the light sorts being at present the most attractive—White Lady and Mrs. Barron being so lovely as to captivate everyone. Among other doubles are King of the Purples and Blushing Beauty, both extremely fine sorts, and, like the white kinds, particularly well adapted for cutting for button-hole and other small bouquets. Few gardens now-a-days need be without double Primulas in winter.

**ABUTILONS IN WINTER.**—The system of planting out these beautiful greenhouse plants, so as to obtain an almost inexhaustible and continuous supply of bloom throughout the winter, is not generally followed, yet we saw some excellent results of this mode of culture the other day in Mr. Lee's garden at Downside, Leatherhead. Against the back wall of one of the vineries are three or four plants of Abutilons Boule de Neige, Boule d'Or, and a fine form of Darwini, and these cover the whole space, and are copiously hung with blossoms that are found invaluable for cutting from, besides being beautiful on the plants. This plan of growing Abutilons is spoken highly of by Mr. Wolford, who has for some time practised it.

At Straffan, Kildare, the best form of Mackay's Zygopetalum is now very finely in bloom; so also are Calanthe Veitchi and other kinds. Lælia anceps in some variety is likewise now beautiful there; and Phalænopsis amabilis, Dendrobium crassinode, and D. Wardianum promise well for future bloom; as do also Coelogyne Lemoniana or citrina (a distinct form of C. cristata), Cattleya gigas, and C. Mossiæ. The great pans of Disa grandiflora and the lovely D. Barrelli are also shooting up with great vigour. Winter-blooming Salvias, Zonal Pelargoniums, and well-grown Chrysanthemums afford plenty of bright colour and variety amongst the fine-leaved plants with which they are arranged. A well-grown bush of the old Pine-apple-scented Salsia rutilans is now very attractive; so also are S. Bethelli and S. splendens. In one of the cooler houses a fine form of the white Lapageria and a most robust specimen of Bomarea Carderi are blooming side by side on the roof, and very pleasing companions they make at this season. Mr. Bedford, the gardener at Straffan, is an ardent lover of good plants, and the collection there seems to repay his attention.—B.

**FROM BADEN-BADEN.**—Aubrietia olympica hangs over my rockwork, and, owing to the mildness of the season, blooms freely. This is the only species as far as I know which produces flowers in quantity when November happens to be mild. Romulea Macowani, with its large yellow Crocus-like cups, is also finely in flower. It is this year four weeks earlier than usual. In the greenhouse Nerine pudica, with its delicate white and rose-streaked blossoms, is still in great beauty; Nerine amabilis is just over. I call by this name a hybrid raised here,

the flowers of which are of a lovely rose, each petal with a crimson stripe; the rose is as bright as that of Rosa centifolia, a colour quite new among Nerines.—MAX LEICHTLIN.

**ASTER GRANDIFLORUS.**—Last week Mr. Ellacombe, of Clyst St. George, sent to the editor's table a flower under this name. Mr. Ellacombe and I generally correspond if either mentions anything which the other wants. Mr. Ellacombe has kindly sent me his Aster grandiflorus. It seems to me the same as that of which I now send flowers out of my garden, and which in my ignorance I have believed to be A. Amellus, having bought it by that name. Will you please give an opinion?—C. WOLLEY DOD. [The Aster sent is A. Amellus, and wholly distinct from A. grandiflorus, a well-marked plant, and not difficult to obtain. We are surprised to see A. Amellus so good at this season.]

**THE GOLDEN-BERRIED YEW.**—How beautiful now to see a tree of this, the curious rich yellow berries contrasting so well with the dark perennial green of the tree. Nothing is more interesting than observing and growing the varieties of our native trees; these do not fail us in hard winters, as so many foreigners supposed to be hardy do. The Yew has not varied so much in cultivation as the Holly, but between the Florence Court, the golden, the yellow-berried, and other varieties there is a good deal of beauty to be seen in our Yews apart from that of the old and common form—one of the few Conifers that will always be happy everywhere in our climate.

**TILLANDSIA LINDENI VERA.**—This charming little plant is so attractive when in flower, that it is scarcely possible to overrate its value as an ornamental stove plant. We allude more particularly to what is known as the true T. Lindeni, for be it known there are several forms of this plant having a wide range of variation. The extreme form is a plant having a tall flower-stem, green bracts, and large blue flowers, with a conspicuous white centre. The true form is a plant with short flower-stems, rose tinted bracts, and smaller blossoms of a rich purple and a white centre. It is in flower at Kew.

**ANOPTERUS GLANDULOSUS.**—In winter uncommon plants are of more than ordinary interest, and this is one of them. It is a handsome evergreen shrub from Van Dieman's Land, growing some 2 ft. or 3 ft. in height, clothed with leathery, deep green foliage, and producing in winter erect racemes of white flowers tinged rose colour. It is one of the most interesting objects in flower in the conservatory (No. 4) at Kew, where it has been attractive for some time. It is almost hardy, and probably would be quite so in the most favourable quarters of our islands.

**THE KEW REPORT.**—We have noticed this reviewed or rather published to a great extent in a contemporary, but on application at the publisher's office could not purchase a copy, nor has one been sent to us. This seems scarcely what one would expect in the case of a public institution. Making exceptions of this kind in the case of a journal officially connected with such an establishment would be natural enough, but it seems scarcely fair that they should be made in the case of journals occupying the same independent position as regards the Royal Gardens.

**BEGONIA SOCOTRANA.**—Lately we have frequently noticed this new Begonia, and we only wish to mention now that those who desire to see it in fine condition to judge of its value, should see the well bloomed plants of it in one of the stoves at Kew. They are arranged in two groups, and the effect of the soft glowing rosy pink of the blossoms is extremely beautiful. Without doubt it is a most valuable winter plant, and one that must become popular.

**DEVONSHIRE FRUIT.**—Mr. Garland writes to us as follows concerning the fruits shown the other day at the Devon and Exeter Horticultural Society's Exhibition: "Apples were finely shown, both as regards number of dishes and quality of fruit, Cornish Gilliflower, Ribston Pippin, Cox's Orange Pippin, and Blenheim Orange were especially largely shown, and finer fruits of each sort I have never seen. There were also some remarkably fine dishes of Pears shown by Mr. Searle, of Crediton, Bergamotte d'Esperen, Easter Beurré, and Doyenné du Comice being among the best, but on the whole Pears were not well shown. They have kept badly this season, and the society's prizes were for three dishes of each sort. Some of the best old kinds, as, for instance, Winter Nelis, Passe Colmar, and Beurré Rance were not shown. I may add that there were some very fine Calanthes in Dr. Woodman's show of plants—an extensive and well varied collection."

**BEGONIA INSIGNIS.**—This is one of the best of all the winter-flowering Begonias, and never have we seen it grown to such perfection as at Chiswick, where there is now a large group of it in great beauty in one of the houses in the Horticultural Gardens. These plants are superbly flowered, and their healthy foliage indicates unusual vigour, though all are in small pots compared with their size. The soft rosy pink of the blooms, associated with the deep coral buds, combine to render them most attractive both on the plants and in a cut state, for which they are admirably adapted. The habit of growth is dense and spreading; every shoot is covered with bloom. Another fine Begonia for cutting from is B. ascotensis, also a favourite there. It is a most serviceable plant, for not only is it valuable for winter flowering, but it is the best of all the non-bulbous section for bedding out in summer.

**IPOMÆA HORSFALLIÆ.**—A fine old, never failing, winter-flowering plant is this Ipomæa. It grows and flowers freely in a stove, planted out and trained up a pillar, or under the roof, and at this season of the year such a plant is of great value, its deep purple flowers being so ornamental, either on the plant or in a flower-stand. Our plant is now well in flower, and has a great number of buds which promise to produce a good display for some time to come. This species is not very easily propagated, though in the spring cuttings of ripened wood root in about a month if placed in Cocoa-nut fibre in a propagating frame.—B.

**CHIMONANTHUS FRAGRANS GRANDIFLORUS.**—The ordinary form of this old hardy deciduous shrub is too well known to need description; but not so the larger flowered variety, which is much superior to the type. The fine old tree of it against one of the walls in the Chiswick garden is now covered with its transparent cup-like blooms, pale yellow, and not so much tinged with red on their inner base as in the case of the ordinary form. If only for the delicious perfume of its flowers, this plant is worth cultivating against a wall, and the flowers, though almost stalkless, last a long time in perfection if dotted over a saucer of wet sand and placed in a cool room.

**CHARLES MARIES.**—We have a cheerful letter from this intrepid plant collector and traveller, who is now superintendent of a public garden in India, where, he says, he is getting on very well. In sending us some reminiscences of his Japanese travels, he promises also some of his Indian observations, which we are sure will interest our readers. Some of his notes to us concern the conditions in Nature of Lily growth, of which he had ample experiences in Japan.



**IVY-LEAVED GROUNDSEL** (*Senecio macroglossa*).—One of the most remarkable examples of plant mimicry is seen in this plant, the foliage of which so much resembles that of the Ivy that in the absence of flowers it might easily be mistaken for it, and the climbing habit of growth favours the deception. There is a plant of it now in flower in the Cactus house at Kew, and it is a most interesting one to visitors. The flowers are of the size and shape of the Ox-eye Daisy, but of a yellowish buff hue, and are produced at the tips of the branches. It is one of the numerous species of *Senecio* that inhabit the Cape of Good Hope region; it therefore requires a moderately warm and dry atmosphere.

**HARROTHAMNUS NEWELL.**—This is a beautiful and most valuable winter flowering plant, and, moreover, distinct from the other kinds, on account of the much deeper hue of its blossoms that are produced plentifully and continuously. The colour, a rich crimson-carmine, is always a desirable one; more particularly in winter, when the flowers are used in a cut state. A large plant of it in one of the greenhouses at Chiswick, planted out in free soil, is now very attractive.

**SKIMMIA BERRIES.**—How bright and pretty these little berries are at this season of the year, we are pleasantly reminded by a few branches, together with Holly berries and golden Yews, from the west coast. They help much to enliven masses of dwarf evergreens at this season, and are excellent for the rock garden or beds of choice dwarf shrubs; they appear to be easily grown in any situation if not overrun by coarser shrubs, and they thrive fairly well in the suburbs of London.

**THE AUTUMN SHOW AT DUBLIN.**—The Royal Horticultural Society of Ireland had a good Chrysanthemum and fruit show the other day; Apples and Pears especially were good—a sermon on land culture in their way! large, well formed, and, as is usual this season, of a brilliant colour. Two stands of good Chrysanthemum blooms blocked the show in the afternoon just as a good picture does in the Royal Academy in May.—B.

**THE SEA BUCKTHORN.**—"J. T. P." need have no doubt about the fruiting of this shrub in this country. Here in North Bucks we have large bushes of it literally smothered with berries, and a well fruited bush of it is really a pretty object. Birds do not seem to touch the berries, which, therefore, remain until late in the season. Two other pretty shrubs when well covered with fruit, which also last a long time, are *Viburnum acerifolium* and the yellow fruited variety of *V. Opulus*.—J. M.

**SIMON'S COTONEASTER.**—How very bright and cheerful this is at this time of year! It belongs to a family that bears gaily coloured berries, more showy sometimes than those of the Hawthorns and similar trees. This shrub is very hardy and free, and though not so large as some of its congeners, it is capital for walls, rocks, banks, or shrubberies.

**WINTER FLOWERING AUSTRALIAN PLANTS.**—Some of the houses in the Clapton Nursery are even now gay with these. Those now most showy are the *Correas*, of which the deep crimson *cardinalis* is the best; the *Leschenaultias*, especially *L. formosa*, with its brilliant scarlet blossoms, are also still well in flower; and among others is the pretty *Roella ciliata*, a Campanulaceous plant with bell-like blue flowers, now apparently becoming somewhat scarce.

**JAPANESE CHRYSANTHEMUMS.**—Among stands of cut blooms of Chrysanthemums at the Tunbridge Wells show the other day was a most noteworthy collection of twelve Japanese varieties exhibited by Mr. Allen, Ashurst Park. They were remarkably well grown and strikingly grotesque

in appearance; the most noticeable among them was *Soleil Levant*, which is one of the most beautiful of this class.

**EPIPHYLLUM TRUNCATUM.**—Very fine specimens of this were exhibited by Mr. Maynard, Broadwater Down, at the Chrysanthemum show, Tunbridge Wells, on the 18th ult., showing how admirable such plants are in the shape of single specimens for indoor decoration. Placed in vases few things are more effective, their drooping habit and pendent flowers setting them off to advantage.

**SALVIA CELESTINA.**—This is a very distinct species. The flower-heads are denser than those of any other kind with which I am acquainted, looking, in fact, much like large spikes of *Lavender*, and of a deepened lavender colour.—T. SMITH, *Newry*.

We understand that Mr. Bunn, late of the Public Gardens, Saltburn-by-Sea, has been appointed superintendent of the new public park at Leicester.

MR. EDWARD BENNETT, Holly Bank, Potter's Bar, has, we are informed, purchased the business and stock of Mr. James Butterfield, Osborne Nursery, Little Heath, who is now retiring from business.

#### FROM MOUNT MERRION.

I SAW a bush of Siebold's *Aralia* at Mount Merrion yesterday—a dense mass of glossy leaves nearly 5 ft. across each main shoot, about twenty-five in all, being terminated with an ivory-white branching spike of Ivy-like blossoms. It was growing fully exposed in the open air, and produced a unique effect along with masses of *Smilax*, *Fortune's Bamboo*, *Pampas Grass*, *Dracæna australis*, and other foliage plants. Even where it does not flower in the open air it well deserves a place in sheltered nooks and not too crowded shrubby borders. There is at Mount Merrion one of the most perfect evergreen Oaks I ever saw, not a humpty-dumpty round-headed bush, but a well-developed tree 40 ft. in height, the top branches as feathery and graceful as those of an Elm. Of course there are many larger specimens, but I never saw a more pleasing display of dark leafage, forming cloud-like masses against the blue sky. A right noble and distinct tree is the evergreen Oak in warm climates near the sea. There are two old specimens near a fine old house—*Sis-an-Iskea*—standing at the bottom of the Merrion Avenue on the Blackrock Road. They are not so perfect as the one just referred to, and yet their dark masses of foliage make a pretty picture as seen nestling close up to a quaint old house of grey stone, softened by age and Ivy-covered, until it looks like a man's nest—cheerful and homely. F. W. B.

#### AUSTRALIAN NOTES.

A FLORAL exhibition was held at Manly Beach, near Sydney, on October 1. It took place in the Pavilion, and consisted of an extensive and admirably arranged display of native flowers. Shows of garden flowers have been so frequent, that unless held under exceptionally advantageous circumstances, they are usually only moderately well patronised. An exhibition of flowers indigenous to the colony, however, has the merit of being almost, if not quite, new, and on this occasion was quite successful. The plan adopted was an excellent one in a money-making sense, being a horticultural show combined with a charity bazaar. The exhibits principally took the form of button-holes and other bouquets, wreaths, mottoes, and baskets of flowers, all of which were offered for sale or raffled, the money being collected in aid of the English Church at Manly. Nearly 3000 people were present. Amongst the great variety of flowers shown were conspicuous the *Waratah* or Australian Tulip, the native Rose (*Boronia serrulata*), Rock Lilies (*Dendrobium speciosum*), the gigantic Lily (*Doryanthes excelsa*), the great flowered Heath (*Epacris grandiflora*), White Heath (*Epacris microphylla*), the Bottle-brush plant (*Banksia marginata*), Everlasting flowers (*Helichrysum elatum*?), and other species; a pretty blue terrestrial Orchid (*Thelymitra ixioides*), and also a yellow one (*Diuris maculata*), the green Wattle (*Acacia decurrens*), and black Wattle (*Callicoma serratifolia*). At one end of the Pavilion was a pretty fernery, in which were shown Tree Ferns (*Alsophila Cooperi*), and Bird's-nests (*Asplenium Nidus* and *A. Nidus* var. *australasicum*), Stag-horns (*Platyterium alcorni*), and a fine lot of *Gleichenias*, with a host of other Ferns, for which the district is famous. Prizes were awarded for the best collections, bouquets and wreaths, the exhibitors being nearly all ladies. ALEX. MOORE.

#### THE FLOWER GARDEN.

##### Wallflowers to stand the winter.—

Wallflowers are such universal favourites that any hint or new discovery regarding their cultivation must be always acceptable. They are rather an important crop here, and the great losses during the last two winters induced me to devise a plan for securing a more compact growth than we usually get in our moist climate. In fairly rich soil the growth of these things is vigorous and succulent, and, as a matter of course, easily injured by severe frost in winter. I therefore proceeded as follows: When pricking out time came we dug a piece of ground for them, then trod it down firmly and spread on the surface 2 in. of fine coal or cinder ashes, then pointed it over with a fork, just pulling up the top 2 in. of soil amongst the ashes, and put in the plants. The result is the sturdiest, dwarfest, bushiest lot of plants I ever saw. The most curious part of it is all their roots are in the top 3 in., and you can pull up with the hand any of them, with all their roots entire for transplanting or otherwise. I think they are certain to come through the winter, no matter what it may be, with perfect safety; however, we shall see.—T. SMITH, *Newry*.

**Lonicera fragrantissima.**—This, as its specific name implies, is a very sweet-scented Honeysuckle, and one I can strongly recommend for planting against a south wall or other similarly warm sheltered spot, where in ordinary mild seasons it puts forth its flowers in great abundance before Christmas, and as these are produced on small twiggy shoots, they are very suitable for working up in bouquets. For bunching up or associating with Violets, they are equally valuable, and as the colour of the blossoms is a creamy white, they blend well and form a pleasing contrast with the rich blue of the Violet. As a pot plant, too, for the greenhouse or conservatory, this Honeysuckle is very desirable, as although not showy, the blossoms fill the air with their fragrance. The habit of this *Lonicera* is shrubby, and the plant is deciduous, and so floriferous after it gets well established, as to become studded all over with bloom. The easiest way to propagate it is to take off cuttings of the young half ripened wood in the spring, and if these are put in sandy soil under a handlight, or in a propagating box where they get a little moist heat, they root freely, as does also the ripened wood taken off in the autumn.—S. D.

**Gold-laced Polyanthus Sunrise.**—In reply to Mr. Barlow, I have to state that I endeavoured as best I could to give Polyanthus Sunrise its correct position, and Mr. Barlow makes it a personal matter. I think it would have been better if he had allowed others to correct my estimate if it was really wrong, and doubly so seeing that he is the acting president of the northern section of the Auricula Society, where it will doubtless come up for future judgment. If Mr. Barlow thus insists upon overriding criticism upon his own Polyanthus, how will it be possible for judges to act impartially when Sunrise comes before them? They will know whose plant it is, and that their chief insists upon its pre-eminence, and will quarrel with anyone who ventures to assert the contrary.—W. BROCKBANK, *Brockhurst, Didsbury*.



## A BED IN HYDE PARK.

ONCE or twice during the summer we spoke of the striking beauty of a bold bed near Hyde Park Corner, which seemed in itself to illustrate some of the best features of the fine-leaved gardening, so to say, of recent years. It was a very large circle, with a bold plant of the Abyssinian Plantain in the middle, fringed by a few of the bolder so-called sub-tropical plants, and edged by an extraordinary bold fringe of the fine hardy, and in beauty, long-enduring Siebold's Plantain Lily (*Funkia Sieboldi*). The reason of the success of this bed, of which we now publish an illustration, is clear enough, and it is always worth ascertaining the reason of any good effect in gardens, because it may guide us in other respects. The "it-is-all-a-matter-of-taste" men are of no use at all under the New Gardening. The bed was right; first, by its form, not a finicking angle or a wormy scrawl, but a bold circle, presenting no confusion to the observer, who simply saw the plants rising in a bold, well-defined group from the roomy turf. The bed was by itself a circumstance which enabled it to be seen unopposed—not muddled up with a lot of other beds near and around it, as is usual, so that the eye cannot rest anywhere or enjoy any one thing at a time. In passing it may not be amiss to note that the eye does not as a rule care for more than one thing at a time, and if invited to look at a picture made up of many things, it rests with pleasure in some one spot. Lastly, the plant forms were bold and well selected, and contrasted well with the ordinary tree vegetation near, there being plenty of Grass about the bed to allow of contrast without confusion from rival subjects. The way in which the Plantain Lilies began early in the year to adorn the spot and continued throughout the whole summer and autumn was quite a pleasure to see. Our drawing was made about the end of September, shortly after some heavy storms had taken place, which tore the *Musa* a little, but the bed remained excellent in effect till October. Some of the Plantain Lily leaves began to fade at that time, but still produced a very fine effect. Thinking it the happiest bed in the parks during the season, we have engraved a drawing of it, made from what seemed to us the most effective point of view.

## Concerning old coal-scuttles, &amp;c.—

I confess I have often been enlightened and interested by the writings of Mr. Wolley Dod, and it is with reluctance I say a few words about a recent communication of his, in which he tells us how he puts certain articles, such as old coal-scuttles, champagne bottles, old boots, &c., in the bottom of and as drainage to his beds. I have seen a good many things carried too far, and among them I believe is drainage, though good drainage is often required. Still I want to know what good can come to a poor root from old coal-scuttles? If I were a Lily seeking nourishment, I think I should be baffled by that! A champagne bottle would not perhaps be so much in the way. Roots do not, as a rule, object to going into hollow

places, but I fear an old boot would be too full of fungus for them to care for it. Roots, as I understand them, would prefer a descent among fibrous or gravelly matter to encountering such a stratum as Mr. Dod mentions, though it is no doubt handy to bury one's impedimenta in that way.—V. H.

## THE WINTER KEEPING OF GLADIOLI.

AMONGST the causes to which the loss of so many corns of Gladioli is assigned, that of wrong storing in winter is said to be one, and various suggestions have been made, more or less ingenious, as to obviating this element of loss. It is said that we are obliged to take up the corns before they are fully ripened owing to the wetness and coldness of our autumns, and that we then store them away in bags or dry shelves, that here they emit rootlets and begin to start their shoots, and that this must tend to weaken the bulb and to prevent the proper development of the flowering stem, and altogether weaken and ultimately destroy it.

The two largest growers of Gladioli in the world are Messrs. Souillard and Brunelet, succes-

sors to Mons. Souchet at Fontainebleau, and Mr. Kelway at Langport, in Somerset, and both of these growers have large places built on purpose for the storing of their bulbs in winter; they are placed on shelves in frost-proof buildings, and are kept quite dry from the end of October until the beginning of April. It is a fallacy to suppose that the French grower can wait until the stem is decayed and the bulb ripe before he takes it up. I have myself witnessed the *arrachement* of the corns at Paris, and they were lifted in quite a green state as those here. It must be borne in mind that all the northern part of France has a climate only a few degrees warmer than ours in summer. That it is warmer is evident by the ripening of the Grapes at Fontainebleau, although in such seasons as 1879 they refused to do it. Moreover, it is very difficult to get the Gladiolus to ripen off; it is apt to throw out fresh roots, which keep up its vigour. I have now in my garden (Nov. 18) a few that I have not been able to lift, and they are perfectly green and fresh. The autumn has been doubtless fine, but it is always the case—they remain green until frost comes. Does the fact that the corn begins to grow, both as to forming fresh roots and also the flowering stem, destroy its vitality, and tend to degeneracy and ultimate destruction of the corn? Now the nearest bulbous root that we have in character to the Gladiolus is the Crocus, and it does not seem to weaken or destroy it, that it has made often-

times a shoot of an inch in length before it is planted; still at the same time it is not assuredly the proper condition for the corn; it ought either to be perfectly at rest, or else in such a condition that if it starts into growth it should not be checked, but have the opportunity of growing on. And this would seem to point, when the collection is not large, to what I should like to do with my own if I had space and time, viz., take them up as usual, clear off the old damaged corn and any small spawn collected round it, and then pot them in sandy loam in small pots, placing them in a cool vinery or any other place free from frost, leaving them entirely without water until the spring, and then gradually giving some until they begin to grow and are fit for planting out. Failing this, I should place them more closely together on sand on a shelf where they could not get any water, and then in the spring transfer them to the open ground. I tried this under the stage of my small greenhouse, but I could not prevent the drip from the pots when the plants were watered from going on them, and hence they were stimulated too soon into growth. An American grower suggested the hanging of them up with the earth adhering to them, but this involved difficulties as to space, and also as to the possible loss of their names, which will not commend itself to those whose space is limited. The ordinary method of paper bags is objectionable, because the bulbs, being close together, the moisture stimulates them, and roots are thrown out. On the whole, then, I am inclined to think that the plan adopted by my friend Mr. Banks, of Sholden Lodge, near Deal, is the best—to lay them out singly on an open-work lattice frame like a series of small drawers; only that instead of the case being solid, it is both sides and back and shelves latticed, so that the air can pass freely round the bulbs. I have for some years adopted this plan, and certainly the corns keep well in it. Before placing them in their winter quarters I take off



Bed of fine-leaved plants in Hyde Park. (Drawn September, 1881.)

the loose outer skin, and write the name on the second covering, so that if a corn should happen to be out of place it will create no confusion.

In alluding to the splendid lot of flowers shown by Messrs. Thompson, of Newcastle, at the Manchester show, I said that I thought they must have been grown under glass. I was a little mistaken in this, for in a courteous letter with which I was favoured by the exhibitors I was told that they were started in pots in the house and then planted out in April; as they came into flower they were shaded in glass-fronted cases placed to each flowering stem, and thus were preserved in their purity from wind and wet, for although the Gladiolus, especially the newer and more substantial flowers, will bear a good deal of bad weather, yet we cannot obtain the purity and freshness so necessary for an exhibition stand without protection of this sort. DELTA.

## Clematis Duchess of Edinburgh.—

This variety is truly lovely, being a pure double white, and worthy of a place amongst the choicest flowers. It is in flower with me in a warm greenhouse now, and is most useful at this season of the year, the blooms lasting from ten to twelve days in water. What am I to do with it in the matter of pruning, as it has almost reached the limit of the space I can allot to it? It is pushing a new shoot about 2 ft. from the ground, and in the axil of



all the leaves there are semi-dormant eyes.—S. L. BOURCHIER, *Crosby, Liverpool.*

#### BUMBLE BEES AND FLOWERS.

I WAS much interested in reading "Delta's" remarks on bumble bees in THE GARDEN of the 5th inst., and I am sure he will excuse me if I correct him in one particular, namely, that when he speaks of the "hum of the big fellow," "he is very aldermanic in appearance," he is really speaking of one of the "fairer sex," and not of the males, which are much smaller than the females. Among the garden flowers which bumble bees are particularly fond of are the Antirrhinums, and I believe they are the only insects which can extract honey from them in the usual manner. One day in September, 1879, I watched a female bumble bee collecting honey from the plants in a long mixed border, in which were upwards of a dozen different kinds of plants in blossom, among them several Antirrhinums in various parts of the border. The bee when I first noticed it was at one end, and it gradually worked its way along the border, flying from one Antirrhinum to another, paying no attention to the other flowers; it was quite amusing to me the business-like way in which it went from one blossom to another on the same plant, setting on and clinging to its lower lip, which fell with its weight, enabling the bee to thrust her head well into the flower and to reach the honey. Once or twice it buzzed in front of a blossom without settling on it, as if it was able to tell that it was not worth trying; having visited all the flowers on one plant, it flew straight to another without apparently noticing the various other flowers it passed. I gathered some of the blossoms to find out the weight which was required to open them. I found that on an average a weight of twenty grains was required to make the lower lip fall  $\frac{1}{2}$  in. The older flowers opened much easier than the younger ones; the lower lip of one fell with only three grains, and one flower which was most difficult to open required thirty-four grains.

Sir John Lubbock states that bumble bees are the only insects which assist in the fertilisation of these flowers, and I have no doubt his view is quite correct, as it is quite evident that other honey-collecting bees are not heavy enough to open the flowers. From the way the bee, I noticed, avoided the other plants in flower, I imagine it knew that it had a better chance of obtaining honey from the Antirrhinums than from them. Bumble bees sometimes injure to a certain extent Bean flowers by tapping the flowers in the same way as "Delta" describes them piercing the blossoms of the Marvel of Peru; this often causes a distortion of the Bean pod, and of course by extracting the honey in this burglarious manner the flowers are not fertilised as they would be if the bee had obtained the honey in the legitimate way.

The fact that individual insects often confine themselves to one kind of flower is very interesting, as by so doing they no doubt assist greatly in the cross fertilisation of flowers. During the last two years Mr. A. W. Bennett has made observations to try and determine whether insects on the same journey confined themselves entirely, or nearly so, to one species of plant. At the British Association meeting at York this year he read a paper on this subject, in which he says "he chose as points of observation spots where a considerable number of different flowers grew in profusion and were intermixed, so that an insect would have abundant opportunity of changing its diet if so disposed." He noticed three different flights of the painted lady butterfly, which settled six, three, and ten times respectively always on the same kind of flower. At the same place a hive bee paid nine successive visits to the same species of flower; on another occasion a bumble bee visited the same kind of flower fifteen times, and another specimen eleven times in succession, passing over, but not touching many other plants in blossom. In order to test whether insects were guided by colour only in visiting flowers, we watched where there were both white and purple

Foxgloves, and a large bumble bee entered sixteen of the blossoms regardless of colour, although to find the Foxgloves it had to fly a considerable distance over other flowers. Mr. Bennett finds as a result of his observations that a decided preference for successive visits to the same kind of plant was shown in many instances, the hive bee being by far the most constant in that respect, often absolutely so. The painted lady and small tortoiseshell butterflies were very consistent, but the white, blue, and brown ones were less particular. Bees of all kinds, from their more or less hairy nature, are probably the most useful agents in cross fertilisation, and it seems very uncertain if more than a very few plants depend on butterflies for their fertilisation.

It is generally acknowledged that cross fertilisation is most important to plants, so that any observations on this subject are of great interest to the horticulturist and naturalist. The former do not always desire that their flowers should be fertilised, as they wither and fade as soon as this the object of their existence is accomplished, and for that reason bees of all kinds are generally excluded from Orchid houses when the plants are in flower. G. S. S.

#### THE INDOOR GARDEN.

##### GLOXINIA MACULATA.

It is an indisputable fact that in our eagerness for novelties we daily lose sight of plants of far more ornamental value than many new ones that are so freely introduced, and it is a remarkable circumstance that the handsome stove plant, of which the annexed is an illustration, has become almost a rarity, though some years ago it could be found in most good gardens. The seeming neglect into which such a fine plant as this has fallen is most undeserved, for it is by no means difficult to manage, and it never fails to produce a good crop of bloom, and that continuously for weeks, and even months. Those acquainted only with the ordinary type of stove Gloxinia which strictly belongs to *Ligeria* would not recognise *G. maculata* as an ally, as it is so different in habit of growth, the stout erect stems rising from 1 ft. to 3 ft. in height, and furnished with fleshy, heart-shaped leaves that often measure 6 in. in diameter. Its bold showy flowers are of a soft purplish-lilac hue and continue to expand in succession all up the flowering portion of the stem, often 1 ft. or more in length. It has a perennial root, but makes annual stems, produced from curious tuberous rhizomes, by which it may be readily increased. It is of easy culture in a stove temperature and in ordinary light rich soil. After the stems have died down the tubers should be rested like those of *Achimenes*; afterwards the tubers should be repotted and started into growth.

There is an allied, but inferior species—*G. pallidiflora*—with which it may be confounded, but the peculiar spots on the stem, from which its specific name is derived, are always a sufficient distinction. It is known also as *Salisia gloxiniaeflora* and *Martynia perennis*. It is a native of New Granada. Mr. Douglas, of Loxford Hall, Ilford, who grows it well, kindly supplied the specimen for the drawing from which the annexed cut was made. W. G.

**Arctotis grandiflora.**—Mr. Lynch, of the Cambridge Botanic Gardens, has kindly given us some information about this rare and beautiful brilliantly-flowered Composite. As I have found it to thrive so well under very simple treatment, I wish to record my experience of its culture. Having come into the possession of a good strong plant of it, through the liberality of a friend, it occurred to me that it might benefit by a rest after producing flowers freely in the early part of the summer, and so I plunged the pot in

which it grew in a bed of peat mould in a partly shaded spot. The result was vigorous healthy growth, which is now producing another crop of its handsome deep orange blossoms, so desirable to brighten up the greenhouse at this season. J. T. POOL, *Riverston.*

**Diplacus glutinosus.**—Why is this plant not more grown than it is? Mine, both indoors and out, has been in bloom since early spring. It is very distinct in every way.—A. K., *Eastcote, near Pinner.* [It is never satisfactory, owing, perhaps, to its not quite suiting as regards hardness our outdoor gardens. It has often been tried in the greenhouse, but not for long.]

**Echeveria metallica in winter.**—Plants of this that have been growing in the open air during the summer months will, if placed in gentle warmth, go on flowering all the winter. Even in a cool greenhouse a great portion of the flowers will expand by Christmas; therefore, all who may wish to do so may make use of this succulent as an indoor winter-flowering plant.—J. C., *Byfleet.*

**Ouvirandra fenestralis.**—We have rarely, if ever, seen this better grown or in finer condition than it is in the College Botanic Garden just now. Some of the lace-like floating leaves are little short of 1 ft. long, and a fourth broad. It is growing in a broad, shallow pan in the Orchid house, well up to the glass, but constantly shaded. To the latter Mr. Burbidge attributes much of the success, particularly its good effects in keeping the water pure and free from confervæ and other organisms to the production and growth of which light is favourable.—*Irish Farmers' Gazette.*

**Propagating double Primulas.**—Mr. H. Douglas, writing on double *Primulas* (p. 514), says the main difficulty in propagating them is preventing them from damping off at the cut part. Now, I see no necessity for cutting at all till they have taken root. As soon as they have done flowering, place them in a warm house, say from 55° to 60°, clear away the bottom leaves, then carefully earth them up with fibry loam, laying a little Sphagnum Moss on the soil to keep it up and moist, when roots will be emitted, and the plants can be cut into as many pieces as have roots to them. They should be potted in 3-in. pots. Thus treated, I scarcely ever have one damp off.—G. C.

**Correas for autumn flowering.**—Two of these deserve special notice for this purpose viz., *C. cardinalis* and *C. magnifica*. The first is a well-known plant, somewhat slender growing, and requiring close pruning. The flowers are produced in abundance from the axils of the leaves, the colour being a bright scarlet, the tubes tipped with green. *C. magnifica* is a white-flowered species, and the blossoms are very charming at this time of the year. It is a somewhat strong grower and flowers freely. The treatment given to New Holland plants at this season suits the *Correas* well, and it is indeed a matter for regret that so many useful hard-wooded plants are now so much neglected.—R. D.

**Begonia Pearcei.**—This is one of the prettiest of the large family of *Begonias*, and if grown along in ordinary greenhouse temperature, comes in well for autumn decoration. The foliage is handsome, the soft, velvety hue of the leaves offering a decided and pleasing contrast to the bright yellow of the flowers. The habit is good, the foliage, in the case of well grown specimens, clothing the sides of the pots. Formerly this *Begonia* was thought to need stove treatment, or, at any rate, was grown along in brisk heat during the spring months; now the generality of growers allow it to come along in a cool house, the result of which is that it flowers more profusely and the individual blooms come larger.—J. C. B.

**Salvia Pitcheri.**—At Chiswick Mr. Barron has grown specimens of this in  $\frac{1}{2}$ -in. pots, with seven and eight spikes of flower, and very charming they are, but the effect is not a lasting one. And yet it is a blue-flowering plant one can scarcely avoid growing at this season of the year. I am afraid some of these new *Salvias* will prove a little disappointing



to many. *S. Bethelli* has pretty pale rose flowers, but it makes an enormous growth, and unless the temperature is warm and comfortable, the flower-scales soon fall, and their effectiveness is lost. *S. Hoveyi*, a scarlet-flowered form, is also objectionable on account of its free growth. All these *Salvias* need a warm greenhouse to do them justice. I can do nothing with them in a cold greenhouse except mourn over the long far-reaching shoots of some of them. To my mind not one of them will take the place of *S. splendens* as a winter-flowering plant.—R. D.

**Clethra arborea in flower.**—Amongst shrubs which bloom late in autumn and early in winter we have none to equal this as regards the profusion and beauty of its flowers, which have frequently been compared to those of the Lily of the Valley. All our plants of it here are in boxes, which with their contents stand in the open air from May until November, and are wintered in a cold house where there is frequently frost, but this does not injure the plants in the slightest, and I fancy they would even succeed in many parts in the open air all the year round. They grow luxuriantly in a mixture of loam and manure, and they make the chief part of their growth in spring, and bloom from August until now or later. One plant will not bloom all this time, but two or three may be managed so as to come on in succession. They require abundance of water when growing freely, and if fully exposed to the sun and well-ripened a large cluster of bloom will be emitted from the point of every shoot. Our largest plant is about 30 ft. high and 10 ft. through, and this is at present in full bloom in a cool house. As a free-blooming greenhouse plant this *Clethra* is not so much grown as it deserves to be. There is no plant easier to manage or surer to bloom in either a large or small state, and the beauty and sweetness of the flowers are unusual at this season of the year.—J. MUIR.

#### **Bougainvillea glabra.**

—Some time about the latter end of May or beginning of June I received through the post from a well-known contributor to THE GARDEN a consignment of cuttings of this *Bougainvillea*, all of which rooted freely in a close warm frame. In due time they were potted off into 3-in. pots, and kept growing in a moist warm frame in company with *Gesneras*, *Tydas*, and similar plants. By the middle of September they had all become nice little plants; one, however, stronger than the others I transferred to a 6-in. pot, using for it a very rough compost, consisting of equal parts loam and old mortar. It was then placed in the coolest end of the stove quite close to the glass, where it was allowed to grow as it liked, not being at any time stopped; thus managed it has grown very vigorously, the principal shoots being over 3 ft. in length, whilst two side shoots are about half that length. All are now showing bloom at the points, and in the case of the strongest the bracts are fully developed. Is it not unusual for plants in so young a state to bloom so freely?—THOS. SPELMAN, *Silsborough, Newark.*

**Greenhouse Rhododendrons.**—What valuable plants these are, especially Messrs. Veitch's newer hybrids; they are easily managed, and where several varieties are grown and the collection consists of a couple of dozen plants or so, one is almost sure to be able to cut a truss or two at any time. We have half a dozen plants of *Princess Royal*, which is almost a perpetual flowerer. *Duchess of Edinburgh* is also a fine kind, its blossoms being so bright and cheerful in colour especially in winter. We are anxiously watching several of the other new sorts to see how they will turn out. What one has to guard against is too much heat. Our plants stood

(Nov. 21); therefore I have to heat a saddle boiler 4 ft. long for three months to furnish heat enough for two houses. No kind of reasoning will convince me that I could not have furnished the same amount of heat with a boiler half the size and with half the quantity of fuel that our large boiler has taken. "J. S.," I think, will now see that it is more economical to heat a small boiler than a large one. I am not now alluding to the convenience of heating a range of houses with one boiler, but to economy in the matter.—J. C. CLARKE.

#### **Balsams from home-saved seed.**—Mr.

Greenfield seems still sceptical as to the getting of good double Balsams from home-saved seed. It is difficult to understand why any one should doubt it. Market growers always save their own seed, and tell us that for their purposes they could not purchase a better strain. I have no secrets of culture to tell; I grow the major portion of my plants in the open ground, simply raising them from seeds sown early in April in a house without heat, and where they can have plenty of light and air. Being sown thinly, the young plants are carefully lifted and dibbled out in rows in the open ground about the middle of May. From such plants this year I have had immense double blooms literally like *Camellias*. The weaker ones and those not needed to fill the rows are eventually grown in pots. Of special modes of culture there are none.—A. D.

—As Mr. Greenfield has associated our name with his first communication upon this subject, and as we are probably the largest growers of Balsam seed in this country—our crop numbering something like 12,000 pots annually—we would at once assure Mr. Greenfield that he is labouring under misconception as regards home-saved Balsam seed; indeed, it is the first time for many years that any writer has attempted to show the superiority of Continental grown Balsam seed over that grown here. From our own experience, extending over many years, we should never have recognised Continental grown seed as in any degree approaching our finest English strains, but at the same time we, like your correspondent, are always on the look-out for improvement, and are ever making experiments to arrive at the best. We can best support our argument and that of "A. D." by appending an extract from the report made upon our own seed crop this year,

when we grew examples from the most reliable Continental sources side by side with our own strains: "Of upwards of 100 different samples of English strains there was not a single instance of inferiority sufficient to warrant our throwing a plant away; on the other hand, of twenty-four packets of Continental seed, distinct colours, there was not one we thought good enough to save seeds from." We may add, in consequence of scarcity of room, our Balsams were sown very much later than usual this year.—JAMES CARTER & Co., *High Holborn.*

#### **Chrysanthemums unthinned.**—My Chry-



*Gloxinia maculata* (natural size).  
(Drawn from specimen in Loxford Hall Gardens.)

in a Peach house since February until lately. A temperature of from 50° to 55° appears to suit them perfectly.—A. H. T.

**Waste of force in heating.**—Referring to "J. S.'s" remarks on this subject (p. 514), I will just say that we have here a range of five houses heated by a 4-ft. saddle boiler. Two of these houses are used for stove plants, but they are only 25 ft. long and 12 ft. wide each. We commenced to use fire-heat for these two houses on August 17, and the fire has not since been out. The other three houses are vineries, for which we have not required any artificial heat up to this date



santhemums were grown in the borders until October 18, when they were lifted and potted, and brought into a coldinery, shaded three days. Three, four and five plants were put into 12-in. and 15-in. pots, and every pot is a show of itself, containing as it does hundreds of flowers. They seem to testify against the practice of bud thinning except for exhibition. Other flowers are as abundant as in April. A severe thunderstorm with great hailstones continued all day here (23rd ult.), and had marred their beauty. The birds are singing as in April.—J. E. WAITING, *Morecombe Bank, Grange-Sands*.

**Poinsettias and Gardenias losing their leaves.**—What is the cause of apparently very healthy well grown plants of Poinsettia losing their leaves? They previously gradually turn brown and yellow. I have also a large bed of Gardenias all planted out, and one by one the leaves are becoming limp; then they turn brown as if scorched. The roots are very healthy and in good suitable soil. There is no apparent cause for this mischief, but the result is deplorable. I should be so grateful for any help in the matter.—L. P.

**Winter blooming plants.**—Would someone be so good as to give me the names of six plants suitable for planting out in a greenhouse to yield blooms in winter? Temperature from 45° to 50°.—A. B. C.

**Chrysanthemum La Petite Marie.**—This variety, mentioned by "T. W." (p. 457), I am unable to find in any catalogue. Is it the same as St. Mary? This is described as a "very fine white."—S. L. BOURCHIER.

## THE ROSE GARDEN.

### THE PROTECTION OF ROSES.

How wintery it sounds, and yet I gathered a nice bouquet of Roses this morning, November 15, consisting of the ever-flowering Gloire de Dijon, La France, Adam, Celine Forestier, Souvenir de la Malmaison, Ophirie, Homer, Triomphe de Rennes, Mdme. Camille, Mdme. Maurin, Anna Ollivier, Bougère, Souvenir d'un Ami, Rubens, General Jacqueminot, Beauty of Waltham, Sultan of Zanzibar, George Prince, and Duchesse de Caylus. In addition the pink and crimson China, and that grand, brilliant old Rose Gloire des Rosomanes are full of buds—open and half open, in which latter state they are so useful for bouquets. Still it is high time to protect Roses if we are to avert such slaughter of the innocents as took place last year and the year before. These late gatherings of Roses are, in fact, very apt to inspire the false confidence in the hardness of the Roses and the mildness of the weather that end in ruin. It cannot be too often repeated that the milder the weather, and the later the Roses grow and bloom the greater the rosarian's danger. Roses and other plants are tender chiefly in the ratio of their excitability. Had they ceased growing and flowering, and shed their leaves like the Oak or the Chestnut, for example, the probability is they would prove about equally hardy. Hence we do not find, as a rule, the old Moss, Cabbage, or Gallica Roses killed by the frost. The latter comes upon them in a state of rest, and hurts them little if any. But Perpetual Roses, Chinas, Teas, Bourbons that are yielding late stray blooms, and are still green and full of sap, fall victims to the cold as naturally as coal or wood are consumed by fire. Hence the necessity of early and efficient protection; this protection should be afforded at top and bottom. Even the roots of Briers can hardly, after the experience of last year, be pronounced hardy in bare soil in exposed situations. We lost hundreds of such last winter, the roots apparently being quite paralysed by the intensity of the frost. Dwarf Roses are still more tender at the roots. It is important also to protect the lower portion of the stems as well as the roots. The latter if wintered in safety have always a sufficiency if growing force in reserve to restore the top, even should the latter be destroyed. Six inches of stem above the ground-line would prove amply sufficient for this purpose. Of course should the tops escape, it will not be needful to cut back to

this line in the spring. It will be well, in fact, to keep this matter of protecting the stems for safety quite distinct from any question of pruning. But should the frost prune the tops back to the protected line, the plant may yet be reformed from its root stool, and a fair amount of bloom ensured from this low level. No one, unless they had tried this method of protecting Roses and had all beyond the protected line cut sharp off by the frost, could have any idea of the marvellous strength with which the plants break away in the spring, and the profusion of fine blooms that may be gathered from comparatively few vigorous shoots. It almost seems that the mere protecting material nourished the buds into more robust strength instead of nursed them, as might almost have been expected, into greater weakness. Considering that our root and stem protectors are rich soil or manure, this is quite possible. The first is on the spot, the latter is easily attainable; and the sooner about 6 in. of either one or the other, or a mixture of both, are applied to the root stocks of dwarf Roses on their own roots the better. Where Roses or Briers are grown on a large scale, I would also strongly recommend a yet more simple and easily available mode of protection. This is provided by simply forking up the soil loosely over or among the roots of Roses, and leaving the surface as rough as possible. This rough surface ensures greater dryness, while the loose, mellow soil resulting from it balks the penetrative power of the frost to such an extent as would seem impossible to those who have not tested the matter by experience. It is assuredly no exaggeration to affirm that the frost will pierce to double the depth into hard soil with a wet, sloppy surface than into one that is roughed up, and is, as a rule, mellow and dry.

As after a wet autumn we almost invariably have a severe winter, it is of the utmost importance to see to it that all Rose beds and borders and plantations of Briers should be roughed up at once. This will not only sweeten and enrich the soil, but likewise moderate and check the destructive severity of severe frosts.

As to top protection, the simplest mode of protecting standards is to tie a good handful of light litter or dead bracken into their crowns. All excess must be avoided, and the more light and fluffy the protecting material, the more effective. Dwarf Tea and other Roses may be laid down flat on the ground, and a layer of litter or screen of boughs laid over them in cases where it is desirable to save the major portion of their tops. Many, however, prefer merely to earth up the base of the shoots, and allow the tops of the branches to take their chance.

Roses on walls may be covered with straw, and the latter enclosed with mats or a thin screen of Spruce, Yew, or other evergreen boughs. This practice used to be more common than now, and no doubt the wholesale destruction of Roses on walls as well as in the open during the last few seasons will lead to a revival of such simple means of rendering Roses on walls frost-proof for the winter.

D. T. FISII.

### OCTOBER ROSES.

IN THE GARDEN lately the names of Roses that have flowered well in October are asked for. I have, during that month, picked Roses, well opened ones, and also very good ones, and buds even as late as November 19 of the following kinds, and if the weather would keep open and mild many would yet bloom in a warm room. The names of those that have been best are St. George, Apolline, General Jacqueminot, Alfred Colomb, Pierre St. Cyr, John Hopper, Mons. Montigny, Baron de Bonstetten, Boule de Neige, La France, Baronne Heskerton, Celine Forestier, Elise Sauvage, Mrs. Bosanquet, and a few others. I have also picked to-day (Nov. 21), and during last month, Violets, Pansies, Primroses, Polyanthus, Sweet Peas, and several other flowers. My Roses are all mulched, but none of the Teas are yet covered with Ferns. This year my Roses have been superior in colour, size, and quantity of bloom to former

seasons, and the foliage very rich and good; not a greenfly or other insect has appeared on any one of them; the young wood, too, is well ripened. The thermometer generally has risen from the 9th till the 21st of November, during the day from 52° to 60°, and during this time we have only had one frosty night.

C. A. C.

Nairnshire.

## THE GARDEN FLORA.

### PLATE CCXIII.—A HARDY PRICKLY PEAR—OPUNTIA RAFINESQUEI (ENGL.).

WHEN some years ago people began to talk of hardy Cactuses most of us naturally expected a very partial success with them, for it has been the fashion to speak of many things as hardy that are by no means so. This applies to trees as well as smaller things, and we had all been so much accustomed to regard the Cacti as coming from tropical or very sunny countries only, that it seemed somewhat of a paradox to proclaim any of them to be thoroughly hardy, and even granting the hardness, one doubted growth and bloom, for things may exist, may even grow a little, but never flower in any beautiful sense. So again, as regards the native country of the Cacti; till recent years we did not know that they inhabited considerable regions in North America, very cold in winter—much more so than in England, and we were a little surprised in rambling over the hills in Western America to see dwarf Cacti everywhere in the Grass, and forming in many places by no means a pleasant turf.

To come to the immediate subject of our plate, we and many others have seen this tried for a long time in the open air, and being somewhat slow in growth at first, few hitherto had an opportunity of saying that it did more than exist; but last summer we saw a plant of the present species in good flower in the garden at Munstead, and a very beautiful object it was, with large soft yellow flowers, very satiny and glossy with many stamens, and both bud and flower beautiful. It was growing perfectly exposed on a low bank of stony soil in a position which, while affording it sufficient nourishment, kept it also a little above the vicissitudes and wet of the ordinary border. The first flowers opened about July 20, and were followed by a succession of bloom till the second week of August. Where several flowers grew side by side they opened in exactly regular sequence, beginning with the one nearest the base of the leaf. In the full sun it opened best, and we have seldom seen a more interesting object in any British garden. Our plate does not show the plant so well as we should like, particularly the glossy colour of the satiny flowers, but it is drawn life-size, and may give a fair idea of the plant to many who have not seen it in bloom. The spot where it grew was fully exposed to the sun, as we believe it ought to be, to get the best result. There are many gardens in the south of England where as good, or better, conditions for the growth of this plant exist. A little group of it in a sunny corner of the rock garden, with liberty to root into good, but not wet soil, would thrive if sheltered by a few rocks or other surrounding objects from any passing danger to the stems. As it is perfectly evergreen and rather fragile, anything brushing against it would injure it; but it is easy, by the skilful placing of a few rough stones or little bushes about it, to prevent injury without in the least shading it. The ground from which it springs might, for the sake of obviating splashes, and also to secure a better effect, be surfaced with some dwarf mossy Saxifrage or Sandwort. It is not











now difficult to procure, and there is no doubt many will try to give it a home.

**Size of our plates.**—Some of our readers have been pointing out that it would be well to state the reduction or increase given to our plates. Our answer is that they are almost in every case drawn life-size, and that this might always be implied when there is no statement to the contrary. If in the rare cases where a flower is too large we have to reduce it we will say so. In the case of new plants we of course take them as they are when they first bloom in a state that makes them worthy of being figured; for example, *Primula rosea*. A gentleman who grows that now thought our plate was a reduced one, but, on the contrary, we simply took a batch of the first imported plants and drew them as they broke into flower exactly life-size. The common vice of plates in gardening and floral periodicals we avoid by giving strict orders that the plants are always to be drawn as they are, though we confess that our efforts in this direction are not always successful.

## GARDEN DESTROYERS.

### PEA AND BEAN WEEVILS.

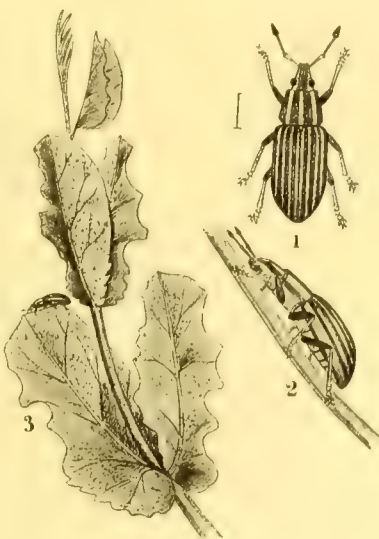
(*SITONA LINEATA* AND *S. CRINITA*.)

Few things are more annoying to the cultivator of vegetables than the destruction of his early Pea and Bean crops. Now these weevils will sometimes attack and destroy leguminous crops when they are just appearing above the ground. When the plants are in this condition the injuries caused by the beetles are much more disastrous than when they are a few weeks old and in vigorous growth, for then the mischief caused by a few of these insects is not nearly so apparent, and the plants grow much faster than the weevils can devour them, but when only just pushing through the soil and their growth perhaps checked by inclement weather, if badly attacked they can hardly recover, as often only the midribs of the leaves are left. It may be often noticed that the leaves of young Pea and Bean plants are much injured by large notches having been eaten out of them; but few persons know the real authors of the mischief; these notches are the work of the Pea weevils, which are small, very inconspicuous beetles of a dull brownish-grey colour. They are very difficult to find on the plants, as they fall to the ground on the least disturbance and for some time feign to be dead, and being much the colour of the earth are almost certain to escape detection. They feed on the plants during the day, and at night hide themselves under loose stones, clods, and shelter of that kind. It will thus be seen that this is a difficult pest to eradicate; hand-picking is not of much use on account of the habits of the beetles.

One of the best methods of preventing young plants suffering from their attacks is to push them as quickly as possible into a vigorous growth; this may be done in dry weather by watering them well with plain water, or, better still, with liquid manure, which not only increases the strength of the plants, but will also render the leaves to some extent distasteful to the insects; if, while the leaves are still wet, they are well sprinkled with soot or lime, or the following ingredients well mixed and powdered: 1 bushel of fresh gas lime, 1 bushel of fresh lime from the kiln, 6 lb. of sulphur, and 10 lb. of soot, they will be rendered so unpalatable, that the weevils will not touch them, while the powder remains on them. Sand mixed with paraffin, or a mixture of sand, sulphur, and lime strewed along the rows is very useful. A good depth of coal ashes placed along

the drills when the Peas are sown is much recommended, "as the plants come up luxuriantly, having all the air and moisture they required." Care should be taken to remove any loose stones or rubbish near the rows and to render the soil as fine as possible, so that the beetles may not find any convenient shelter at night. The history of these insects during their grub and chrysalis states is not apparently known.

Many of the beetles pass the winter under Moss, the bark of trees, and similar sheltered places. They leave their winter quarters in March or April, and pair about six weeks later. It would be doing a real service to gardeners if anyone could trace the life of these very common weevils in their immature states, as some means might then be devised for their destruction. At present as we only know them in their perfect state, and do not know any practical method of destroying them, all we can do is to ward off their attacks. The Pea weevils belong to the large family Curculionidae, which contains many genera and several hundred species, all of whom are vegetarians, and therefore more or less in-



Figs. 1 and 2, the Striped Pea Weevil; fig. 3, Pea leaves notched by Weevils.

jurious in gardens. The members of this family may always be recognised by their heads being produced into a long snout or beak, and by their antennae being always elbowed and their terminal joints forming a club. Several members of this family have already been described in *THE GARDEN*. The genus *Sitona* contains about twenty-four species. *S. lineata*, the striped Pea weevil, may be described as follows: Length nearly  $\frac{1}{4}$  in.; head, greyish brown with a yellowish stripe on either side; beak, short (not so pointed as in the figure); antennae reddish brown; thorax and wing-cases greyish brown, with longitudinal yellowish stripes, the former having one in the middle and one on either side; on each wing-case are four pale stripes, those on the internal edge of each wing-case forming a central stripe down the insect. This colouring varies much in different specimens, as the insects are covered with minute scales which are easily rubbed off, so that specimens which have been much rubbed are nearly black. The thighs are reddish, the shanks and feet reddish brown. The spotted Pea weevil much resembles its striped relative, but is somewhat smaller and greyer, and the wing-cases are spotted with black instead of being striped, and are somewhat hairy.

G. S. S.

## GARDEN BIRDS.

IN my former letter to *THE GARDEN* (No. 511, Sept. 3), which you were kind enough to illustrate by an excellent engraving, I invited the attention of cultivators to a careful study of the nature of birds and their insect food, as most important to the well-being of flowers and fruit. It has been too common to regard birds as garden enemies; whereas they mostly do the work of guardians of the garden, and the greatest misfortune that could befall my garden would be the disappearance of its feathered visitors, who each spring-time come from afar and become my garden guests for the whole of summer. We cannot understand thoroughly the causes and consequences and nature of these visits unless we take a wide view of the nature and organisation of the vast communities of winged creatures which inhabit our atmosphere, and the still more numerous communities of insect life which occupy hidden spots in the vegetable world, and which will become either great enemies or fast friends, according as we treat them, with wise prudence or reckless vengeance.

This subject is too large to be exhausted in a small space. All I want and hope to do now is to obtain the consent of your readers to entertain the conclusion which a long lifetime spent in taking in the direct teachings of Nature herself in my own garden has brought home irresistibly to my mind, viz., that all living things were meant to take a helpful part in forwarding the designs of the universe; that they all are able to be of use to each other, provided the nature of each is thoroughly known, and the functions of each are wisely applied to culture and the common good.

I will try to make good my conclusions by giving you single examples of what is passing before my eyes in my own little garden: and as my former example was a garden guest, the Warbler, so the next shall be the guardian of my garden—the hedge sparrow.

**THE HEDGE SPARROW** is in my garden the whole year round. He is not a visitor, but a neighbour. He takes to his own family use a well defined portion of the garden. At present he is in possession of 40 yards square. Six others who are tenants of my neighbours' gardens, as well as part of mine, occupy altogether some 3000 square yards. About the end of March he sets about building his new family home, but, like the Irish peasant, "she does the work" and he "takes the credit," and he also cheers her at work with his song.

About the middle of April the young ones are hatched, and from that time he does the work of finding and fetching food for the young jointly with his mate. Their food is all found in his portion of my garden, and consists entirely of eggs, flesh, coiffed flesh, and winged game.\*

Neither my vegetables nor my fruit are taken; but, on the contrary, their enemies are taken and eaten, to my great comfort, so that the hedge sparrow and I are mutual helpers, and end in being fast friends. He protects me from those minute pests which I cannot catch; and I, in return, protect his home from the carnivorous cats, who are his decided enemies, and in no way my friends.

When of the age of 14 or 15 days the young ones begin to leave the nest and follow the lead of their parents in selecting their food. When 30 days old they have attained the maturity which gives them their own way, and after that they provide their own food, and select as their parents did before them.

\* These words I use in a popular dialect as free renderings of the scientific terms—ova, larva, pupa, imago, for which see "Entomology," by E. A. Ormerod, F.M.S.



So soon as the female is released from the task of feeding her family, she sets about the task of preparing a second nest, in which she breeds a second family, which comes into the world in the middle of May; and he and she have now to discharge over again all the same duties of tending and rearing, and have to look out for fresh food, which may be different from that of the earlier spring, but is still composed of eggs, flesh, cofted food, and winged game, so that I am still benefited, and none of my vegetables or fruit trees suffer the slightest harm, while the hedge sparrows clear away the enemies of the garden.

This second brood, consisting, like the former, of from four to five young ones, is sent out to take care of itself early in July, and after that follows a third and perhaps a fourth brood. We have thus a sufficient number of young birds to survive till next year and to escape the multitude of cats with which modern civilisation has surrounded our gardens, and which do their best to deprive our yearly garden crops of their best defenders, the hedge sparrow. Luckily, the sparrows have wide fields and country fences to which they resort when the multiplication of cats drives our friends away from us.

There is one more good our friend does us. He never harms our garden crop by feeding either on our flowers or fruit; but there are certain weeds hateful to us, the seeds of which are delightful to the sparrow, and, curiously enough by eating these he clears our gardens of another set of enemies.

How this family of our winged friends survives the winter must be a mystery to those who are not aware of the means by which our enemies survive the winter. In August and later large broods of insect eggs and large numbers of matured insects are preserved in their coffins or hidden in a great variety of convenient cracks, corners, holes, ledges, and bark of the bushes and trees, and also in earth holes. Our hedge sparrow searches and finds these hidden hoards rich in insect food for himself and family: and thus he prevents the sudden swarm of outbursting insect life which would destroy our early crops if they were not thus thinned in the winter months.

The next example will be the family of tits, who are among the most interesting, most ingenious, and the most useful of our garden guests.

GEORGE SWAYSLAND.

4, Queen's Road, Brighton.

## BOOKS.

### MONACO AND ITS GAMING TABLES.\*

THIS is a little shilling book, written in an earnest style, having for its object the exposing, and, if possible, remedying the evil of gambling at Monaco, where, in one of the fairest parts of the Mediterranean shore, a charming garden has been formed and some costly buildings erected for the purpose of making gambling on the most extensive and vicious scale more alluring. The author's remarks under description of the natural beauties of the place will be interesting to our readers. He says:—

"Looking down from the once barren rock, converted into what one could suppose the hanging gardens of Babylon to have been like, there is the little horse-shoe bay, its shingly shore gently laved by the bright blue waters of the Mediterranean, and fringed by the snow-white houses and villas of Condamine, which stretch up to the base of the great mountains behind. The mountains

stretch up to the very clouds, rugged at the top, with great blocks of riven rock projecting from their precipitous sides, which seem as if a touch would send them crashing down into the valley beneath. Far up the mountain, at an elevation of 2000 feet, is the little village of Turbia. Conspicuous in its midst are the ruins of the ancient tower which Augustus Caesar built to mark out the boundary between Cis-Alpine Gaul and Italy. Passing through the little village and winding along the mountain side, like a thin grey line, is the famous Corniche road, which is called 'the finest drive in Europe.' Lower down the mountain, the bare, barren, whity-brown rock is covered with soil, and Vines and Olive trees appear. Lower down still, the feathery, silver-grey foliage of the Olive is interspersed with the dark green leaves and golden-coloured fruit of the Orange or the Lemon; whilst still lower down in the gardens of some of the outlying villas of Condamine, the tall, slender, black Cypress, or the gorgeous Date Palm, or the gigantic flower stock of some great Aloe may be seen standing out conspicuously against the clear sky. All along the coast, both east and west, there are fantastic headlands, and bold promontories, and shelving rocks abutting on the sea. To the west there is the picturesque



View in the Gardens at Monaco.

headland of Monaco, with the magnificent landlocked bay of Villefranche a little beyond. In the hazy distance there is the great sweep of bay where Nice lies, running into the long low promontory of Antibes, with the great range of the blue Esterel Mountains closing in the background. To the east, Roquebrune on the hillside, and Mentone on the coast, with the promontory of Bordighera hiding the bay of San Remo in the distance. At our feet, the gently heaving waters of the little bay, with a few trading vessels lying under the shelter of the rocks of Monaco, and far out at sea, the blue waters of the Mediterranean, seen through the narrow opening of the bay, like a charming picture set in a lovely frame. Add to all this the clear sky and the brilliant sunshine, and we have a *tout ensemble* such as is rarely to be seen. Some one has said, that in ascending the broad sloping terraced walk from the railway station at Monte Carlo to the Casino, he felt as if he were going up to heaven. The place is often called a terrestrial paradise; but I know of only this one case where any one has been so bold as to liken it to the paradise above. But with whichever of the two abodes of blessedness we compare it, something more than natural beauty is needed to make the analogy complete."

The book contains several illustrations, of which the one here reproduced is an example.

## NOTES AND READINGS.

So the penny revenue from the old Hampton Court Vine has ceased, "by the orders of the Board of Green Cloth." The old veteran Vine is said to have borne 1300 bunches this year, or not under 1000 lbs. of fruit—not a bad average, it will be admitted. The most remarkable thing about this Vine is the equable state of good health and fertility which it has always maintained. Its crops have always been produced at the natural season, which no doubt largely accounts for this, but it is nevertheless a noteworthy example in this respect in these days, when from seven to ten years is the span of healthy existence under modern Grape culture in many instances. It has never, we believe, been certified that the sustained vitality of the Hampton Court tree is due to its roots having penetrated a common sewer, but Dr. Lindley said that both this Vine and the one of Cumberland Lodge were examples of Vines growing vigorously and bearing large crops of fruit "with but little or no assistance in the way of manure. Both Vines grow on rich shallow soils." It would

be interesting to learn what root culture, if any, the Hampton Court Vine receives, and we should feel obliged to any of your readers for information on the subject which might be useful. There is rather a dearth of Vine literature just now, and one cannot remember that the subject of deep *versus* wide borders has ever been ventilated. The borders in which the old Vines mentioned grow afford examples of the latter, but if we are not mistaken, 3 ft. is the minimum depth recommended by modern cultivators, and which is too deep under our sunless skies, though not above half the depth of the borders made and recommended as examples in Lancashire, a few years ago, by one of our most energetic horticulturists. Those borders were constructed after the pattern of the "coal measures" in the neighbourhood, but were not quite so deep—bones alternating with layers of turf representing the carboniferous formations of the pits, according to the description furnished of the borders in one of the papers at the time. Mr. Bushby's Vines, it is stated, have their roots in a shallow border nearly three times the length of the Vine rods in width, and his success has been of an exceptional description.

Speaking of borders, it is not exaggerating to say that, as a rule fruit tree borders are made

\* "Monaco and its Gaming Tables." By John Polson. (London: Elliot Stock, 62, Paternoster Row, E.C. Paisley Alex. Gardner.)



too deep in this country, and some few gardeners seem to recognise the fact. Trees planted in deep borders start late and ripen late, if they ripen at all, and ill-ripened wood is the evil to be guarded against in the cultivation of all outdoor fruits in England. McIntosh, in his book of "The Garden," recognised this, but went if anything to the other extreme. Fruit trees planted on his system were set on mounds, and the roots were so lightly covered that the trees would hardly stand alone, and had to be supported by means of stakes. This shallow planting, however, was of no advantage when the soil was deep and the roots could get down into it, and the practice disappointed many who tried it. Nine in. or 1 ft. is not too deep to plant the roots at first, provided means are taken to prevent them penetrating much deeper afterwards. The difference of a few degrees in the temperature of the soil makes a great difference to the subjects growing in it. That everyone knows who has at any time had to cultivate plants requiring "bottom-heat," and noted the effects a few degrees one way or the other make to the plants. It is the same outdoors, and as the temperature of the ground decreases rapidly the deeper we go within a few feet of the surface in summer, it is a reasonable practice to place the roots at that depth, where they will experience the highest mean temperature during the growing season, and this distance is between 9 in. and 18 in. according to circumstances. These remarks apply to the Peach and stone fruits more particularly that require all the heat, root and top, available. In fact, the permanent welfare of the trees is almost a question of temperature alone, to which all other cultural practices ought to be subordinated.

Speaking of Apples in a contemporary a week ago, "A. D." remarks, "The best crop, *because most naturally grown*, was that gathered last week from some standard trees growing in very ordinary market-garden soil, and cultivated only very roughly with the plough. The trees are practically unpruned, and as the huge fruit hanging on the extremities of the branches brought them down in pendent fashion, I was strongly reminded of the pulley training once advocated. Six of these fruits, a fair sample of the whole, weighed 5 lb. 12 oz., and three weighed 1 lb. each and 13½ in. in circumference, showing great size for so light an Apple." Cultivators please note—the best crop *because most naturally grown*—practically unpruned. This is absolutely heretical. That excellent cultivator, Mr. Sheppard, is also permitted to apply the term "barbarous" to the practice of respectable modern authorities, who are committed to the theory that Vines must have their heads cut off in order to put vitality into their tails, and who teach that Peach tree shoots ought to be cut back for similar reasons. He has a Peach tree that covered 100 ft. of space in two years, and is full of bearing wood. These are passages that could be frequently picked out in any of the horticultural papers within the last few years, while no end of practitioners are now being unearthed, who it appears claim to have disregarded the orthodox instructions of restrictive teachers all their lives, and are now desirous of making the fact known. Thus our well-established notions on the subject of pruning, supported as they are by physiologists, by whom the "systems" have been reduced to "scientific principles," are being assailed head and front, and indoors and outdoors, and the changes of theory and practice suggested and advocated are of so radical a nature that one is irresistibly driven to the conclusion that the advocates of either the one system or the other are, or have been, a set of incompetents. I used the term advisedly and no other is admissible.

No stronger condemnation of past practices could be uttered than that of "A. D." that the crops were best because the trees were naturally grown and practically unpruned.

Mr. Temple, of Impney Hall, Worcester-shire, also furnishes some remarkable experiences in Peach and Vine culture on the extension system in another paper, but he draws most illogical conclusions from them. "It is neither worth risk nor trouble to tax the strength of young Vines," he says, "by taking a crop of fruit from them the same year in which they were planted;" and straightway he proceeds to demonstrate by his practice and success that his precept is entirely wrong. We know Mr. Temple to be a good hand at his profession, and his practice, unlike some other people's, is far better than his preaching. This is how he demonstrates the evil effects of cropping Vines the first year. He had, it appears, new vineries to plant one spring, and it was a condition that he was to produce Grapes the same season from the newly planted Vines. He had to buy such Vines as he could get, and he had the very worst soil procurable for his borders, but his Vines bore from 5 to 7 bunches each, and furnished a supply till the end of the year. The following year more of the "worthless soil, it not having produced either pasture or anything else worthy of notice for generations," was used, with the paradoxical result that the Vines reached the top of the house by the end of August, and produced a crop of "as good bunches of Grapes as could be wished," which is saying a good deal, for Mr. Temple is no mean judge of Grapes. Things went on under the same and other adverse circumstances the third year, and "the wood and foliage increased in size rapidly, and the fruit, which gave a good supply from the end of July till the following April, was as good as he could have wished from Vines treated under the most favourable circumstances, the berries being of excellent size and well coloured, and they have continued to do well, and, judging from the foliage and hard brown wood, they show no bad effects from their severe treatment." These are the reasons apparently which induced Mr. Temple to state at the outset of the same article that "to plant young canes, fruit them the same year, and expect them to become first-rate Vines in time to come, would appear more as a burlesque than a system emanating from common sense," and "it is neither worth the risk nor the trouble." We believe all that Mr. Temple states with regard to his success, for we have heard of it from other sources, but his reasoning on the subject and the conclusions at which he arrives are extraordinary. Most successful cultivators encourage others to imitate their practice, but Mr. Temple, although his plan has succeeded in the face of adverse circumstances seldom met with by gardeners, has come to the conclusion that the plan is not worth trying. It has not been considered a wise plan to fruit young Vines, intended to be permanent the year they are replanted, and continue to fruit them afterwards in a constant way, but Mr. Temple has shown it can be done, and his success will help to dispel the doubts from the minds of those who still believe that it is necessary to subject Vines to the severe cutting back process (which is nothing else than a rule of thumb practice) in order to increase their vigour. Looked at in all ways, the system is wrong, save under exceptional circumstances. PEREGRINE.

**Plants in flower in November.**—*Arabis procurrens* has always been far more attractive in November than at any other season. Some large patches of this plant are very conspicuous. There

are, however, but few flowers seasonable just now; they are all before their time, owing, doubtless, to the mild weather which we are experiencing. The various kinds of perennial Candytufts (*Iberis*), notably *I. semperflorens* and *I. gibraltarica*, are very gay. *Senecio pulcher*, too, has made a fresh start; and while one or two flowers are open upon a weakly shoot, there is a beautifully fine flowering stem bearing perhaps thirty flowers near the point of opening. *Houstonia cœrulea* shows a few flowers; in a well-drained sandy peat it increases rapidly enough. Of *Ionopsidium* we have a nice little patch from self-sown plants.

## THE FRUIT GARDEN.

### THE APPLE.

(Continued from p. 530.)

**Pruning orchard trees.**—Standards one year planted in a permanent position and well established at the root will be by this time in good condition for their first and most important pruning, for the shoots left now will form the outline of the future tree. Presuming that the trees when planted were the sorts usually sent out from nurseries for orchard planting, viz., trees cut down once after grafting, they will now have heads consisting of five or six strong shoots left entire at planting time, and in addition thereto will be the growth made during the current year; but as this is usually neither strong nor well ripened, most growers cut back to well ripened wood of the preceding season. The branches are thinned out well, leaving such as point outward, and thinning the centre out well, but not so that too many shoots all start from the same point so as to form a cavity for water to lodge in when a large size has been reached. Better leave two or three tiers, each consisting of two or three shoots. From three to five shoots are plenty to leave at the first pruning, and when they break afresh two of the best leading shoots should be selected and the rest pinched in to form spurs. If left until winter and then cut back they give rise to a quantity of useless spray that might have been converted into fruit buds by timely attention, and the leading shoots will make all the more progress, for the stronger these are, and the better ripened by having plenty of light and air playing round them, the longer they can be left at the second winter's pruning. In respect to this various opinions are held, some allowing the head to grow as it likes after it has been once cut back; others again make it a rule to look over all their trees every winter, shortening the tips of the strong shoots and removing any pieces that may be crowding the centre, the head being kept evenly balanced. I am quite convinced that although good crops of Apples can be grown in both ways, yet by the latter plan one gets better shaped trees, and certainly an equal weight of fruit, which, if not so numerous, is certainly of larger size and of higher market value. It is the high coloured Apples that realise the best prices, and, therefore, in standard trees, the larger the surface exposed to sunshine, and the less the sap is diverted to inferior branches, the better will be the produce. Moreover, trees whose shoots are topped every year with a sharp knife or the secateur never need what the advocates of letting them alone call pruning, i.e., cutting out several faggots of wood from a large tree, an operation that usually gives it a check from which it does not recover for several years. After the trees get eight or ten years old I find the averuncator, or long-handled tree pruner, very useful, for by the aid of a pair of steps or tressels with steps on each side a man can quickly get over an orchard of young trees without putting the ladder against them at all. It is the shoots that rush upwards that



need stopping in order to induce them to branch out into fruitful twigs and spurs. Some Apples, such as Stone's or Loddington Seedling, that are noted for being nearly all flower buds and making scarcely any wood, can only be kept growing by just taking the tips off the shoots every year. If left unpruned they cease to make any young wood; and the same remark applies to some slow growing or tender Apples, like the Ribston and Margil. These certainly make young growth more evenly over the entire surface of the tree when the shoots are tipped regularly every year. Young wood is needed to produce continuous crops of fine fruit. In all cases the centre should be kept open. A well-trained orchard tree should resemble an inverted umbrella, the ribs representing the main shoots, which should be cleared of spray; the latter does not answer any useful purpose, but the outer branches should be left moderately thick. In fact, in trees that have plenty of room to extend all round the outer branches require but little thinning. We clear the centre of the trees each winter, and cut out dead wood or weakly growing branches that are being smothered or covered by the stronger growth of younger wood. The erect shoots at the top of the tree are stopped, but even where that is not done a heavy crop brings them down to their desired position quite as effectually as any kind of training.

**Pruning dwarf trees.**—Where the outline of these is formed, all that is needed is to keep them in good fruitful condition by summer pinching. This not only reduces the necessity for much winter pruning, but it exposes the fruit to increased sunlight, thus improving both appearance and flavour. In the case of dwarf trees it is impossible for fruit to reach even the finish of which our climate is capable if the bushes are crowded with a thicket of spurs, and the whole of the young growth is left to shade the fruit, more especially in market gardens where tall standards are planted so thickly as to completely shut out the sun's rays from the dwarf or bush trees with which they are associated. If we are to keep our hold on the market the trees must have more room, and the pruning of dwarf bushes should be done with the view of producing finer fruit than they have hitherto done. If at the winter pruning the spurs were well thinned out, fresh spurs would originate from the base, and there would always be a succession of young fruitful spurs along the entire length of the main shoots. It is not advisable to pinch the shoots before their bases begin to get firm, or about the latter part of July, and then not closer than five or six leaves, as at the winter pruning they can be reduced to one or two buds. I find the secateur a useful implement for thinning overcrowded fruit spurs, and in the case of those that are old and long neglected, a small pruning-saw will be found best for removing them close to the stem, shaving off the rough edges with a sharp knife, so that the cuts may heal over readily.

**Pruning trained garden trees.**—Having given full instructions in a former chapter as to the various modes of training now in use in gardens, it only remains to say that, having got them into form, it will rest with the pruner to keep them in a fruitful state by the judicious use of the knife. During these last few years this has been greatly assisted by summer pinching, and as the trees grown in gardens now-a-days are mostly on the Paradise stock, there is not anything like the disposition to make such a quantity of superabundant wood, more especially on the upper parts of the trees, that there was in days gone by, when the Crab or free stock did duty for all kinds of trained or untrained trees. Still, careful manipulation is required

to keep trained trees in good condition as regards an equal distribution of vigour, more especially in the case of horizontally trained espaliers and cordons, and to a less extent in that of upright pyramids, the tendency of the upper branches being to monopolise more than their share of the sap. This must be remedied by persistent pinching of the uppermost shoots, allowing those less favourably situated to carry all the leaf growth they can, in order to maintain a proper balance in all parts of the tree; doubtless, however, in time all modes of training that militate against the well-being of the tree will be superseded; in fact they are so already. The old horizontal espalier is making way for the erect trained fan or oblique trained cordon.

**Thinning the fruit.**—Where trained trees, whether on trellis, walls, or in pots, are grown, thinning ought to always form an important part of their culture, for without it the produce will not be much better than that from untrained trees. Who would expect fine Grapes if the bunches were left unthinned? and who can expect fine Apples if they are left in clusters, as they generally are on trees worked on dwarfing stocks? It is not advisable to thin severely at first, but all bunches should be reduced to one or two fruits as soon as they are fairly set, and when they have acquired sufficient size to see which will make the best fruits, enough for a crop should be selected, retaining those most advantageously placed for getting the full benefit of sunlight. Dropping of the fruit, or as it is called "running down," is an effort of the tree itself to reduce its over-abundant crop to reasonable limits, and barren years are caused more by exhaustion from over-cropping than from any other cause; therefore, if the crop is carefully thinned to what the tree can well ripen, the flower-buds for the following year will have a better chance, and the trees may be expected to carry a crop every year, unless some extraordinary visitation overtakes them. We are too apt to lay our losses in the way of crops to spring frost; it is a ready excuse, but do we always take full advantage of the means we possess for overcoming the variability of our climate? If we can grow tenderer fruits that are natives of warmer climes, and that flower at a much more inclement season than the Apple, surely there can be no insuperable difficulty in the way of having a crop every year.

**Top-dressing.**—This must not be done with a niggardly hand if good and constant crops are to be expected; in the case of orchards on Grass, the feeding off with sheep is the readiest means of doing it both effectually and economically, and as the Grass is allowed to get long when the fruit is ready for gathering, it keeps that which falls from getting bruised. By supplementing the Grass feed, too, with roots, hay, and oil cake, orchard trees may be kept in health for an indefinite period, and thus treated they are not so liable to insect and other pests, and the closer the Grass is fed off the better. In some cases pigs are substituted for sheep, and penned off in the same manner, and with excellent results as regards the trees. Cultivated orchards, on the other hand, must depend on the supply of manure given them at the winter dressing, and as such orchards are generally undercropped with bush fruits, it follows that the land thus heavily cropped must be made good, and that in the case of dwarf garden or trained trees a space must be kept solely for their support as wide as the average spread of the branches. Intermediate cropping can only be safely indulged in before young trees come into bearing; after the roots occupy the ground the surface should be annually mulched with partially rotten manure as soon as the crop is set, and in autumn when the leaves

are down they should be raked off with the exhausted material and buried elsewhere, so as to remove all dormant insect life from the surface soil.

**Regrafting established trees.**—After all that can be done in selecting proper situations for orchards, and in getting the most approved varieties, and applying the most careful culture, some failures are sure to occur. Some sorts may refuse to be fruitful, others may be liable to canker or die back, while other sorts good at the time of planting may become worn-out. Soft light Apples possess little market value. Heavy, solid Apples not liable to bruise or show the marks of a little rough handling are at present in most request for culinary purposes, nearly all fruits being now sold by weight. In the case of dessert Apples, high colour is a great point in their favour; therefore whole rows of trees are often headed down in winter for re-grafting in spring with sorts that do well in the locality and that are popular in the market. In Kent old trees are considered to be so much more valuable than young ones, that they are thought worth re-grafting as long as they possess a sound limb, for even if they only last a few years the effect of double or treble grafting invariably renders them so very prolific that they soon repay the labour, and also the loss of crop for a short period. Some kinds of hard sour Apples are planted in orchards solely for re-grafting when they reach a large size, say eight or ten years' growth. The Goff Apple is grown in this way, to be grafted with Stone's, but it does well on any sour hard kind, and thus treated it makes a large tree much sooner than would otherwise have been the case. Old trees are invariably grafted on the crown or rind grafting system, and the grafts are put on shoots about the size of a man's wrist, which heal over and make much stronger unions than when grafted on larger limbs. After they have become united they are treated in all respects as young trees as regards forming the head; but as a rule they are so prolific that very little pruning is needed.

**Regrafting trained trees.**—Since the introduction of miniature trees on the Paradise stock little necessity exists for re-grafting old or unfruitful specimens, but it sometimes happens that in the case of trained pyramids in lines forming a background for walks in fruit or kitchen gardens one or two may prove unsatisfactory, and then re-grafting has to be resorted to, and if done towards the points of each shoot a prolific tree is formed in two or three years' time. I have sometimes, too, found it advantageous to convert pyramid trees into open bushes by grafting the points of the lower tier of branches, leaving the top of the tree for a year or two until the grafts got fairly into growth, when I cut the entire top above the tier of branches away, a spreading bush tree being the result. All fastenings and ties are liable from neglect to cut the bark, especially in the case of young trees swelling rapidly, and therefore must often be examined. In labelling be careful to avoid wire, for if put on main stems it is liable to get embedded in the bark before it is observed. Rather have a rough ground plan of the orchard or garden made, every tree being indicated and its name plainly attached to it, for labels get lost or misplaced and cause endless confusion.

JAMES GROOM.

**Flavourless Pears.**—Pears here have been abundant, but generally small and of inferior quality. Williams' Bon Chrétien, though of a beautiful yellow colour, was almost flavourless. We are using at present Louise Bonne of Jersey and Marie Louise; some of the latter large, fine looking fruit, but both varieties deficient in qual-



ity. The want of flavour I attribute to the long continued wet and sunless weather which occurred during their ripening period. It generally happens after a wet season that the prospects for the coming year are gloomy, owing to the bad ripening of the wood; but this year the wood seems to be pretty well ripened, owing doubtless to the extreme heat which we had early in the season. This advanced growth so far that the exceptionally long wet and dull autumn through which the trees had to pass, has had little effect on them. —A. MACKIE, *The Woodlands, Darlington.*

#### TRANSPLANTING OLD FRUIT TREES.

THIS is an operation sometimes recommended, but not often performed. Old or neglected trees in a bad state are generally grubbed up and destroyed. In some cases this mode of procedure may be right, but in the case of good varieties something else might often be done. New trees are all very well, but many kinds are a long time in coming into full bearing; frequently, indeed, a full crop may be had from renovated trees before the young ones are capable of bearing half a crop. If carefully lifted and transplanted, it is surprising how old trees improve. A few years ago I knew a garden in which both standard and wall trees were in a very bad state. Many were large and overshadowed much of the vegetable quarters; for years young trees had been annually added to the stock, but as these were planted between the large ones, it was not long before they became exhausted and unfruitful. Some would have consigned every tree to the rubbish heap and begun afresh; but this was not permitted. By cutting back and transplanting the most had to be made of what existed, and now the garden in question contains many useful rejuvenated trees. A certain number were transplanted every autumn until the whole had been gone over and not a tree was lost or the crops sacrificed. As to the crop, indeed there was not much to lose, but it is gradually improving, and in a year or two will doubtless be as perfect as can be desired.

All the trees just referred to were transplanted between the beginning of October and the end of November. When the former month was not suitable or convenient the most was made of the latter. Where the trees could be shifted before they lost their foliage, it was thought to be an advantage. Previous to disturbing the roots a quantity of the best loam obtainable was got, and a quantity of half-decayed manure and lime rubbish was also secured, to be used in quantity according to the nature of the soil and the kind of tree to be moved. One large heap was not mixed up and used for Apples, Pears, Peaches, Plums, Cherries, Peaches, and everything alike; on the contrary, a special mixture for each class of tree was provided. Apples and Pears both succeed in the same kind of soil, but stone fruits require more lime, with which it is well to provide them. All fruit trees succeed better in a heavy loam than a light compost, and when they cannot be planted in naturally suitable soil the nearest approach to it should be secured. I have known the soil of a whole border to be removed, but it is only in exceptional cases that this can be done; the majority of cultivators have to do the best they can by cutting out square or round holes for the trees and filling them up with new material. Against this practice I have nothing to say, as when carefully done much good is generally the result.

Before transplanting the holes should be taken out to the required depth and width, and all long fibreless roots cut into within 18 in. or so of the stem. A hole 4 ft. or 5 ft. in diameter will be found suitable for most sizes, and if taken out to the depth of 3 ft. a body of soil, which will remain sound and good for many years, may be put together; part of this depth must, however, be given up to drainage, the amount of which must be regulated by the character of the subsoil. Where the drainage is naturally good, little or no artificial assistance will be required; but perfect drainage is an excellent thing, and it is better always rather overdone than underdone. Rough

ashes, broken bricks, and rough stones all make good drainage. About towns bricks are generally to be had, and in gardens there are always plenty of clinkers from the stoke-holes which may be used. These or similar material should be put in to the depth of 6 in. at least, and never more than 12 in. In deep soil this will prevent the roots from penetrating the subsoil, and in clayey material no harm can occur where such precautions are taken. Every old tree, whether against a wall or out in the open, which I have transplanted has been drained in the manner just indicated. As soon as the necessary depth of drainage has been placed carefully in the bottom, turves with the grassy side downwards should be put over it. The soil in which the roots are to be placed is chopped up into pieces about the size of one's fist, and a quantity of it thus prepared is placed over the turves. Old trees can seldom be lifted with a ball of fibrous roots, and if the soil in which they have been growing is decidedly bad, the less of it moved the better. In replanting every root should be spread out with the hands and carefully covered. When this has been done, the remainder of the soil may be filled in more roughly and readily, and the whole should be finished off with a thorough ramming or treading, as a firm soil induces the formation of fibres. As soon as planting has been finished the trees should be securely staked, as any shifting of the roots through the top being blown about by the wind is much against their well-doing. During the first twelve months severe weather in winter and hot weather in summer may check growth, but this may be in some measure guarded against by placing a heavy mulching of manure over the soil as far as the roots extend. Large trees are frequently top heavy, and the best way to deal with such is to thin out and cut back the top growths well before transplanting, but when the trees are not over large this is as well left undone until the spring. Cultivators are always pleased to see young trees which they plant do well, but I think it is even greater satisfaction to see barren trees become fruitful through being transplanted. After such trees have become established it may be a considerable time before they can be made ornamental as regards top growth, and it may be impossible to get some to look at any time so well as young trees; but appearance is not everything; many ugly in growth are the greatest and surest bearers.

CAMBRIAN.

**Mr. Bushby's Grapes.**—"Cambrian" (p. 509) is not posted up in this matter, whereas I am. Chopping up loam for a speculative purpose is not evidence. I have only my own knowledge and Mr. Bushby's assurances for what I said, and if I choose to do so I could put Mr. Bushby's success in a light that would be quite sufficient to prove that his practice as well as his success was as exceptional as it was his own. I said Mr. Bushby did "nearly" everything about the Vines himself, meaning himself or one of his domestics—the housemaid, who often did the airing, &c., when Mr. B. was not there. No one else did the stoking, airing, and general management throughout the whole summer. Mr. Thomson or his deputy pruned the Vines once a year, which took about ten minutes, and the man only assisted Mr. Bushby to do the thinning of the berries, which took two or three evenings. As Mr. Bushby and myself have sat many times together at this job, surely I should know if anything else was done, but I cannot remember anything but the cow manure being put to the borders in my time; and Mr. Bushby and an old labourer, whom he only occasionally employed to mix up his liquid manure-tub and paid for doing it, put the manure on. I have probed the border scores of times, and know its exact depth and quality originally. What Mr. Thomson did to the Vines when he went there I do not know; I saw them the year afterwards when they were bearing a grand crop, which they have repeated ever since. During eight years the fire never was made up once by men from Dalkeith Gardens that I am aware of, and it was no one's duty to attend to it there. Nor is it managed by anyone but the

owner now. All that I have stated is substantially true, and I question the good taste that would seek to detract from the credit of those to whom credit is due, especially from one who must have had most of his knowledge second hand. I may also state that Mr. B.'s viney is quite outside the park, and not very near Dalkeith Gardens, and as Mr. Bushby, as a rule, carried the key of the viney or kept it in his house, no one else was likely to be able to see after it but those who had it.—W.

—In a recent number of THE GARDEN "W." describes the heavy crop of Muscats taken yearly from Mr. Bushby's Vines. I am glad to see "Cambrian" (p. 509) giving your readers a full account of their management and the formation of the border. "W." questions if the ground was ever artificially drained; if not, I can assure all interested that when Mr. Thomson made the border he would have the excellent natural drainage of the ground in view. I have chopped and mixed a good quantity of turf for Vine borders under his directions, and I know he would be the last man to plant Vines in a wet border. Perhaps "W." is not aware that an old coal shaft exists not fifty yards from the viney in question.—DAVID MURRAY, *Culzean, Maybole.*

—It is well that "Cambrian" starts his account of these Grapes (p. 509) by telling us that in one particular "W." was speaking the truth, for afterwards every fact he records flatly contradicts the statements of "W." (p. 431). I was in Scotland when "W.'s" statements came before the public, and every gardener whom I met then stated what "Cambrian" has recorded, viz., that these Vines never did any good till Mr. Thomson made for them an excellent border, and allowed his men to attend to them, so far as pruning and thinning went. Mr. Thomson afterwards informed me that the border was composed chiefly of turfy sods cut from the roadside. Gardeners know perfectly well what excellent turfy loam can be gathered from the roadside, and they pretty often purloin a load or two of it, not forgetting a trifle of drift sand to bear it company. Gardeners will, I am sure, thank "Cambrian" for the daylight which he has let in on Mr. Bushby's Grapes.—J. C. SPYERS, *Burford Lodge, Dorking.*

**Renewing old Pear trees.**—Having three fine old, well-trained Marie Louise trees upon the walls here, which only bore fruit at the extreme ends of the branches upon the young wood, while the other parts of the trees were taken up with long barren spurs, which no thinning or pruning seemed to make fruitful, three years ago I had all the spurs cut clean off, leaving nothing but the straight branches, and the trees, being healthy and vigorous, sent out a quantity of shoots all along the branches, which were from 15 in. to 18 in. apart. At regular distances shoots were selected along the sides of the branches and laid into the wall, while those upon the outside of the branch were rubbed off, and now after a year's pinching and training we can see numerous fruit buds, which I expect after our rather severe manipulation will give us a good return in the way of fruit.—J. M., *Clumber.*

**Dark or light Apple rooms.**—Should an Apple room be dark or light? Does it make any difference as regards the keeping of the Apples stored in it? [Yes; it does make a difference; all other things being equal, the fruit crop will keep better in a dark than in a light room. At the same time, when building such a room, provision should be made for the admission of plenty of light for the purpose of inspecting the fruit, &c. Windows with movable sashes for ventilation when necessary, and close fitting shutters for darkening the room, is the best arrangement.—W.]

**Root pruning.**—This will not hinder the bloom buds from opening in spring, but the operator will find nearly all of the bloom perish on the top or end branches, the fruit coming from the old wood, which will surprise him in summer for quality and size, and the different character that the tree seems to assume. My Pears are double and treble the size, and in flavour quite different from what they hitherto have been. I took all



prizes where I showed last summer, first and second, and we have some extensive orchards here in our neighbourhood, but all want attention both as regards pruning and root pruning.—J. E. WAITING, *Morccambe Bank, Grange-Sands.*

**Tynninghame Muscat Grape.**—It is true, as has been stated, that this Grape was exalted as a superior variety some years ago, and it was grown and shown by the late gardener at Tynninghame, Mr. Lees, in fine condition, but he never regarded it as other than the old Muscat in good form, and it was extensively planted as a safe kind to grow at that time. It must have dwindled sadly if the present description of it be correct.—NURSERYMAN.

**Keeping fruit.**—This being such an exceptionally mild autumn, it would be interesting to know how Grapes are keeping, and whether the roots are outside or inside; also, how Pears are keeping. I saw in one place a grand lot of Easter Beurré fit for use on the 20th of November. In another Winter Nelis fit for use at the same time. With me Glou Morceau was ready for use the 25th of November. How, therefore, are Pears behaving in other places? The temperature often ranges from 45° to 50° at night out-of-doors, a circumstance which makes it impossible to keep fruit rooms cool.—J. C. F.

**Vines on the extension system.**—The Barbarossa which made a cane over 50 ft. long in two years and bore a heavy crop the first year, the particulars of which have already been furnished, has fruited its whole length this season; 50 ft. has been allowed to carry 40 lb. of fruit, which it has finished and ripened to perfection, the colour being nearly equal to the Alnwick Seedling, which is saying a good deal for it, and the berries have been very large, particularly on the oldest part of the Vine. I have no doubt this Vine would have carried a greater weight if it had been allowed. Cropping reasonably, and cutting back is wholly unnecessary—a mere waste of time and Vines. *A propos* of the idea entertained that leaving whole-length canes the first year weakens the late branches, I may state that in each instance the bottom branches and bottom bunches on our Alnwick Seedling this year and last have been the strongest and largest. This is brought about quite easily by pinching the bottom branches less than the top ones, which balances the vigour in the most satisfactory manner. These Vines can be seen at any time by anyone interested in the matter.—J. S. W.

**General Todleben Pear.**—I have grown this Pear for several years on espaliers. The fruit is large and good looking, but by the end of October it is rotten at the core and useless, although to outward appearance quite green and sound. I got it, expecting it to be a December Pear. I never have had it fit for table at any season; I am afraid it wants more sun than we have had of late years.—D. LUMSDEN.

**Profits of fruit growing.**—Those who, at the instance of Mr. Gladstone and of well-stocked nurserymen, are largely planting fruit trees may read—with all the profit they will ever get—my account of last Saturday's sales in Covent Garden:—

7 bushels Josephine Pears .. ..	£1 7 6
9 bushels Glou Morceau .. ..	2 0 6
4 strikes Knight's Monarch .. ..	0 7 0
1½ bushels late Ganscils .. ..	0 3 0
1½ bushels Ribston Pippins .. ..	0 10 0
5 bushels small Glou Morceau .. ..	0 10 0

I may add that the sales were not made on commission, nor by auction, but at my own stand, and under long endurance. Also that for every bushel thus sold at least another bushel has been thrown away, for Pears perish rapidly this year. No finer English fruit than mine goes to Covent Garden. For the encouragement of vegetable growers let us note that the best Brussels Sprouts are selling at 1s. 6d. per bushel, and beautiful Cauliflowers eight for 6d. When the price of fruit was at its best, and I was comparatively young and sanguine, one of our leading nurserymen observed to me—"Ah, sir, it pays a long way better to grow the trees than the fruit, even when you can get it." Twenty-five years have I now been a fruit grower, and in one season only has the produce paid the wages, let alone manure, repairs, interest on capital, &c.—A VICTIM TO POMONA, in *Gardeners' Chronicle*.

## SEASONABLE WORK.

### FLOWERS AND PLANTS IN THE HOUSE.

G. J., SURREY.

WHEN the early part of November is mild, as it has been this year, some stray blooms belonging to spring give us extra outdoor flowers; they are the more welcome now that but few are left. Of these, *Cydonia japonica*, pink and scarlet, set in good fresh Moss, brilliantly dresses a deep china dish. Polyanthus and coloured Primroses, with a few alpine Auriculas, and some handsome leaves of this year's seedling Primroses make a good bunch, and Wallflowers yield a very sweet and fairly good one. To return to flowers in season, we have white Chrysanthemums cut long, arranged in a tall jar with a bough of *Ilex*. The *Ilex* is one of the best evergreens for use with cut flowers; some of the small sprays are nearly as good as Olive; they do well with all white and pink flowers. There are arrangements of coloured Chrysanthemums in great variety, the colours kept together in groups, such as pale and deep yellow with orange, deep crimson with red, purple and lilac with white, and so on. As pot plants, we have six pots of white Chinese Primroses in a large Italian embossed copper, five of *Calanthe vestita rosea* in another copper, and three pots of *Schizostylis coccinea* in a third.

### FLORAL DECORATIONS.

J. HUDSON, GUNNERSBURY HOUSE.

A BEAUTIFUL groundwork on which to arrange flowers can easily be made where green Moss from our woods and hedgerows can be gathered. With this and a few trailing pieces of small-leaved Ivy a good start can be made for almost any kind of floral arrangement. If cut flowers are wanted for presentation it is in my opinion better to arrange them in a lightly made basket suitable for the purpose than to bunch and tie them up together, thus detracting from their beauty. A handful of Moss placed under the flowers will serve to keep them fresh in a fancy basket for some time. Baskets or vases in which plants are arranged for the house may now be made gay with the earliest Chinese Primroses and white Roman Hyacinths. These associate well together; so also does the Poinsettia with either the Roman Hyacinths or white Primula. For this work also a plentiful supply of green Moss is invaluable. Nice little plants of *Pteris serrulata*, a somewhat hardy Fern, are very useful for mixing with flowering plants during the winter. Where Orchid flowers are used in a cut state for indoor decoration the different forms of *Calanthe vestita* and *Veitchi* will now be especially valuable. With such choice material the utmost should be made. Three or four well developed spikes should be sufficient for almost any vase, with the addition of a few Fern fronds, almost all Orchids producing a better effect when arranged by themselves than when mixed with other flowers. The same remark also applies to nearly all the large family of Lilies. Of Heaths and Epacris, the winter blooming kinds will now yield abundance of cut flowers, and they have the good property of keeping long and well in a cut state. A few sprays of *Erica hyemalis* and *gracilis*, together with a few spikes of *Epacris* of various colours and a piece or two of *Correa cardinalis*, make a pretty arrangement for a trumpet vase. *Begonia insignis* and Moonlight, with other winter-flowering kinds, have a good effect when arranged in a cut state with their own foliage only. Though not so lasting as some flowers, these *Begonias* are nevertheless valuable and must not be overlooked.

### THE ROSE GARDEN.

W. H. F., BEESTON.

PRESUMING that after such a favourable month for planting most if not all of this work is done, let us proceed to stake the standards and to lop off any long shoot, there may be on the dwarfs, thus preventing the action of the wind from playing too freely on them and thereby loosening

them. The tenderer varieties of Hybrid Perpetuals, all Teas, and Noisettes we shall protect by covering them over loosely with bracken, straw, or some old Laurel or Yew boughs. After making our new arrivals secure from frost we shall look round our old beds and borders, covering entirely such as experience tells us require it, but most of our dwarfs we shall earth up with soil to at least the height of 4 in. or 5 in. If this is found to be too laborious, we should cover round the base of the plants 3 in. or 4 in. thick with some long stable manure, which can be removed after the pruning season is over. This latter method has an advantage over earthing, for while the manure used protects the roots and plants from frost, the best part of it is finding its way into the ground. These remarks apply only to dwarfs. Standards and half standards may be protected by strawing the heads or using the long boughs just referred to. Stocks of Brier, Manetti, &c., may now be planted with advantage and with all speed. Pot Roses may now be carried into the house out of cold frames or similar places they may have been in and pushed on at first with but a gentle heat, not forgetting to give plenty of ventilation.

### FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

HOPELESS as seemed to be the efforts of Chrysanthemums at one time to open their blossoms, they have succeeded, and, though late, have been remarkably fine, the weather having favoured them beyond all expectations; but now having lost their beauty, nothing remains but to clear away the stems if the plants are to be left where they are in the borders to grow on again for another year. The best way, however, although involving a little more trouble, is to start afresh with young ones or plant out from among those that have flowered in pots, and in cases where this is intended to be done the plants for the purpose should be taken care of in frames, and not turned out till sharp frosts are over, or many of them may get injured.

The air has been so warm of late that already most bulbous plants are growing fast, and will, if the present exceptionally mild weather continues, be soon through the soil; it will therefore be advisable to be prepared with a good stock of leaf-mould in order that it may be in readiness for purposes of protection should its use be required. Laid on the surface or around the collars of plants, it is surprising what shelter even a handful affords, and where it can be had in quantity nothing answers better as a mulching for all beds and borders, few if any of which should be dug or disturbed. Dressed with leaf-mould, they not only look tidy for the winter, but the plants in them are rendered snug and comfortable, and start vigorously in spring. Not only is there danger in the future to bulbs owing to the excitement they have recently undergone, but trees and shrubs of doubtful hardiness will require extra precautions to carry them safely over the winter, as it is well known that they always suffer more after a season like the present than they do when the autumn is colder and drier. For low-growing shrubs or plants there is nothing equal to leaves for affording protection, and these if thrust in among the branches or about the collars, and kept there by means of bracken or evergreen twigs, will be all that is necessary except for Myrtles, Escallonias, and such like, which may require the assistance of a mat or other help later on.

Roses and other deciduous plants of that class may still be planted, but the sooner they are now got in the better, as they will then have plenty of time to form fresh rootlets, which will enable them to start with great strength in the spring. Brier stocks for budding next season should be collected at once for the same reason, and in planting these it is important that they have good ground away from trees in an open, sunny spot, where they can make strong shoots, instead of being starved and having the bark contracted, a condition that tells much against them, and a check they are a long time in getting over. The best Briers for stocks are those having bright,



clear stems, that look as if they would swell freely; these should be taken up carefully and at once trimmed and shortened to lengths likely to be required to grow as standards or dwarfs. It seems strange that, hardy as Briers are, they sometimes get killed when moved from hedgerows or the shelter of woods, and to prevent this as well as to enrich the soil where they are planted, the ground should be mulched heavily with half-rotten manure, and if this is done, frost will have little effect on them, however sharp the weather may be. For sandy soils, the Manetti forms the best stock, and to be prepared with a supply of these it will be necessary to put in a good lot of cuttings. Those made from wood about the size of a penholder are the best, and in preparing these they should be cut into lengths of about 9 in., and have all the buds removed except one or at most two at the top. In making the cuttings it is important that they have a joint at the base, as there the roots are emitted, and to prevent shrivelling the cuttings should be buried to within 1 in. or so of the points, and if this is done, scarcely one in a hundred will fail. Rose cuttings may be made in a similar way, but instead of trimming out the buds of these, every one should be carefully preserved, that the future plant may be a branching one well furnished below. In putting either Manetti or Rose cuttings in, the best way is to have a line and chop down by its side a long straight drill, in which the cuttings can be thrust at 6 in. or 9 in. apart, and the ground then pushed up and made hard against them by pressing it down with the foot. The present is also a good time for propagating evergreens, many of which strike readily from cuttings if put in bare open places in shrubberies or other situations where they are well sheltered from cold, cutting winds. Thujas of all kinds, and most of the Coniferae likewise may be increased in a similar manner, but these require the aid of a hand-glass or cold frame, in which they can be kept close, when they will callus during the winter and put forth roots in the spring. For striking cuttings of Coniferae, the soil cannot well be too sharp and sandy, and to make it firm about them it should be well watered and left to subside.

#### PROPAGATING.

ATTEND to cuttings of soft-wooded plants struck in the autumn, as a few decaying leaves will often make sad havoc amongst them. Advantage should also be taken of any leisure time to go over the whole of the plants intended for next season, and make an approximate calculation as to the number that will be needed to make up deficiencies. Propagating cases should now have a thorough cleaning, and if necessary the plunging material should be renewed, the best for the purpose being good new Cocoa-nut fibre refuse. This substance is also of great use in striking all kinds of young soft cuttings, such as Fuchsias, Heliotropes, Bouvardias, Verbenas, &c. For this purpose it may be used without any admixture whatever, all that is required being to sift it through a moderately fine sieve to remove the long fibres, and from its open character it is unnecessary to crock the pots. From many years' observation I am convinced that cuttings emit roots in this in a shorter time than in any soil or mixture of soils, but in using it one thing to be borne in mind is that as soon as they are rooted they must be potted off, as in a short time the roots commence to decay. Seedlings of all kinds about which there is any appearance of damping should be kept as dry as possible consistent with safety, and placed on a shelf near the glass. Bouvardias that have done flowering, and that are required for propagating, should be now somewhat rested in a rather cooler temperature, so that when slightly shortened back and introduced into heat in spring they will break out freely and yield a quantity of cuttings. Lapagerias that have finished flowering may now be required if required, in order to increase the stock, for although layering is often delayed till summer, yet if performed now several months are gained. For this purpose take a shoot, and having bent it

down to the soil, or to a pot prepared for it, cut a slit half way through the under part of it, and continue it upwards for about 1 in.; then peg it down and cover it with soil to the depth of 2 in., a little sand being worked in around the cut part, which, from the circumstance of the shoots being bent, will be open, and the sand and soil by getting in will prevent it from closing, thereby inducing the formation of roots. When finished a stake should be put to the part above ground to prevent its being broken off. Lapagerias may also be freely raised from seeds sown as soon as ripe in sandy peat, and placed on a gentle heat till they germinate; but the flowers of seedlings are very variable, most of them being of poor quality, and as it is necessary to grow them some time before flowering only in the majority of cases to have an inferior kind it is scarcely desirable to increase them in that way. As far as my experience goes seeds of the white variety produce flowers almost the same as those of *L. rosea*. T.

#### ROCK GARDEN.

T. D. HATFIELD, BICKLEY.

IN furnishing rock gardens at this season it is important to select only such plants as are hardy and well established. For cultural purposes alpine may be divided into two groups, viz., those which require a soil entirely free from lime, and those which do best on limestone. In giving the following list I am guided as much by practical experience as by books.

#### LIME HATERS.

<i>Alpine rubella</i>	<i>Polemonium confertum</i>
Rosani	<i>Primula Candolleana</i>
<i>Andromeda tetragona</i>	decora
<i>Androsace carnea</i>	Florkiana
Laggeri	glutinosa
glacialis	graveolens
obtusifolia	integrifolia
<i>Anemone narcissiflora</i>	minima
sulphurea	viscosa
<i>Anthemis Biebersteini</i>	tyrolensis
<i>Arenaria biflora</i>	Steiniana
purpurascens	<i>Ranondia pyrenaica</i>
<i>Armeria setacea</i>	<i>Ranunculus Bertolonii</i>
<i>Arnica montana</i>	glacialis
<i>Aronicum glaciale</i>	<i>Rhexia virginica</i>
<i>Bryanthus erectus</i>	<i>Rubus arcticus</i>
<i>Callixene polyphylla</i>	<i>Saponaria lutea</i>
<i>Campanula cenisia</i>	<i>Saxifraga aizoides</i>
<i>Cardamine trifoliata</i>	Aizoon
<i>Cerastium lanatum</i>	aspera
<i>Daphne rupestris</i>	bryoides
<i>Dianthus Fischeri</i>	Burseriana
neglectus	cesia
<i>Draba bruniifolia</i>	cernua
stellata	cochlearis
frigida	diapensoides
gigas	flagellaris
<i>Epigaea repens</i>	Hirculus
<i>Epilobium latifolium</i>	juniperina
<i>Erigeron uniflorus</i>	nervosa
<i>Fritillaria Moggridgei</i>	oppositifolia
Burnati	Tombeana
<i>Galax aphylla</i>	<i>Senecio carniolicus</i>
<i>Gentiana bavarica</i>	uniflorus
excisa	<i>Silene acaulis</i>
brachyphylla	Elizabethae
<i>Haberlea rhodopensis</i>	Schafta
<i>Hutchinsia brevicaulis</i>	<i>Soldanella alpina</i>
<i>Lewisia rediviva</i>	pusilla
<i>Lithospermum Gastoni</i>	<i>Tofieldia palustris</i>
<i>Lychnis Lagascae</i>	Trillium species
<i>Mazus Pumilio</i>	<i>Veronica prostrata</i>
<i>Ourisia coccinea</i>	Wulfenia species

Plants which prefer lime, or, at least, are indifferent as regards it, are so numerous, that a list of them here would occupy too much room.

#### INDOOR PLANTS.

T. BAINES, SOUTHGATE.

NOTHING that can be introduced to a plant stove does so much to create a healthy condition of the atmosphere as a good body of fermenting matter, even if not used for plunging the pots in; therefore, it is always wise economy to have the house so constructed as to admit of a bed 3 ft. in depth being filled with tan or leaves, and if a somewhat greater depth than this can be used it will be all the better, as the greater the body of material the longer it will keep warm, during which time it continues constantly to give off exhalations that invigorate the plants. They are still further benefited by the moist warmth that is continually rising amongst the foliage, acting as a preventive

of red spider; and beyond this, the heat derived from such a source is so much directly saved in fuel, for a substantial bed such as I have spoken of will keep a temperature of from 85° to 95° for several months. There is no better time for getting in new material for this purpose than the present, as it will retain a maximum of heat during the coldest part of winter, and furnish the means for giving bottom-heat to such plants as are benefited thereby. Amongst these may be included *Eucharis amazonica*, *Pancratium*, *Crinum*, *Amaryllis*, and *Lily of the Valley*. Where there does not happen to be a regular propagating house, by the use of ordinary hand-lights, bell-glasses, or even a common frame, the usual spring propagating may be very well done where tan is used. At the time of getting in a supply it is often the custom to sift the old material, and to retain that which is not too far decomposed, mixing it with the new. It is, however, doubtful if anything is gained by this proceeding, as the old generally contains a quantity of worms which get into the pots. Where a good supply of clean Oak or Beech leaves can be had, they are little inferior to tan. The necessary removal of the plants whilst the new material is being got in should be taken advantage of to have the whole inside of the houses well cleaned. Where mealy bug exists, wash the woodwork with paraffin diluted with water to the extent of half-a-pint of the former to a gallon of the latter, and brush it into the joints and cracks. At no time in the year, too, can the plants be so effectually cleared of insects as at this season, when the harder state of the growth consequent upon its mature condition enables them to bear a stronger application of whatever insecticide is employed than it would be safe to use when they are in active growth.

**Azaleas.**—It is natural for these to shed a portion of their leaves during winter; sometimes this leaf-dropping goes so far as to leave the plants almost naked, but where this occurs it is evident that the growth has been imperfectly matured, or that the leaves have been injured by insects or through fumigating. Although Tobacco smoking is a quicker way of destroying insects than dipping or washing, yet the latter is much the safest method, and it can be effectually done now. Thrips may not be found now in a living state, but their eggs are secreted on the leaves under little black spots, which look like specks of varnish, there they remain concealed until there is warmth enough to bring them to life. If the plants are thoroughly washed with strong Tobacco water by dipping the smaller portion of the stock and syringing the larger, the eggs will be destroyed, but to do this thoroughly the Tobacco water must not be washed off in the way sometimes done with clean water, but should be allowed to dry on the plants.

**Camellias.**—Where old examples of these have got thin of branches and straggling, there are two ways of dealing with them: either shorten the branches well back, or bend and tie them down, an operation which induces the plants to break back. This is much the quickest method of getting them furnished with a close growth of young shoots, but for a time the plants have a somewhat formal appearance; yet if there is any deficiency of roots it is a safer course to follow than heading in, as when plants of any description so treated are deficient in root power, cutting back has a still further weakening influence, which it often takes them some years to get over. Where any work of this kind has to be done, it should be seen to at once, as if deferred until near the time when growth commences, they will break fewer shoots. Previous to tying in, if the plants are at all affected with scale, they should have an extra cleaning, so that if not completely eradicated, these troublesome insects may be so reduced in numbers as to give little trouble during the growing season. In every garden an effort should be made through the winter to get the whole stock as clean as circumstances will permit; every insect destroyed now is the prevention of numbers making their appearance in the summer, when so



many other matters require attention, and the time of all engaged is required to attend to the routine of cultivation.

**Berry-bearing Solanums.**—Where these useful decorative plants are required with their berries in a fully ripe coloured state for as long a season as possible, some cuttings should be rooted as soon in the new year as they can be got, for unless the plants are struck early they will not flower and set their fruit so as to admit of it getting coloured in the autumn. These Solanums vary much in their habit when raised from seed, and the best way to secure a uniform profuse-berried condition is to raise the stock from cuttings; if some of these are put in at once and another lot later on, the first will have their fruit ripe by the beginning of October, the later batch coming in to succeed them. If the plants have no young growth about them suitable for cuttings, a few of the best should immediately be put in a little warmth, where they will quickly commence to grow; as soon as the young shoots are 2 in. long they will be large enough, and will strike in two or three weeks if put in genial warmth, after which they should be moved singly into small pots and kept on growing in an intermediate temperature until spring, stopping them two or three times, so as to lay the foundation for a close, bushy form. The small-growing *S. capsicastrum* with its slender drooping shoots is quite as handsome as the bushy habited sorts more usually grown. It requires similar treatment in every way, only that the principal shoot should be supported with a stick, leaving the side branches to droop naturally, which they will do so as to form a pretty pyramid hanging down and all but covering the pot.

#### FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Vines.**—Advantage having been taken of the unusually mild November weather, the early house will now be on the move, and timely attention will be needed, particularly where the Vines are pruned on the modern long-rod system, to secure an even break quite back to the base of the current year's growth. If the terminal buds show signs of taking the lead, tie the points down to a low level and syringe the dormant buds with warm water several times a day. Turn the fermenting material frequently for the twofold purpose of giving off warmth and ammonia, and add fresh leaves and short manure from the reserve ground as the work proceeds. When the buds begin to push, the outside borders may receive a good covering of new Oak leaves in sufficient quantity to maintain a top-heat of 75° to 80°. Let them be in a fermenting state when they are placed on the border, make them very firm, and replace the lights or shutters with a sharp pitch to the front for throwing off water. Admit a little air at the top of the house when the weather is mild, and slightly raise the temperature on bright days, when it may run up to 68°. A minimum temperature of 58° will be sufficient for the present, and 5° less when colder weather necessitates constant fire-heat.

**Succession houses** intended for starting about Christmas should be pruned and ready for shutting up by the end of this month. It does not often happen that bleeding follows November or December pruning, but where there exists a doubt the application of a little styptic, liberal ventilation and the withholding of water from the inside borders until after the middle of the month will be advisable. If inarching or bottle grafting is intended, cut back the rods at once, also the young Vines, and let the two start together for the first operation. Select ripe short-jointed pieces of wood for grafts, and lay them in the ground out-of-doors until the time arrives for putting them on. Bottle grafting may be performed at any time after the wood is ripe, but before the leaves fall or when the buds on the stock begin to swell are perhaps the best periods for putting on the scions.

**Late Grapes** will require constant looking over for decaying berries. Keep the houses dry and cool, free from plants and scrupulously clean.

Avoid all sweeping or other disturbances which will set dust in motion, and have the Grape room fired and aired on fine days ready for their reception at the end of the month. Pot Vines will now stand a little more heat, particularly by day when the weather is bright and fine, but no hard and fast line can be laid down for forcing at this uncertain season, and it is always best to err on the side of low night temperatures until after the turn of the year, when time apparently lost can be redeemed without distressing the Vines. Attend to disbudding and tying out, select the most compact shows for the crop, and guard against leaving too many bunches, as an over-cropped pot Vine is always an expensive failure. From this time forward more care will be needed in the preparation of the additional supplies of fermenting material, as rank steam would prove fatal to the tender foliage. A few of the strongest and best ripened Vines may now be selected from the spring-struck stock for growing into fruiting canes. Cut them down to within 2 in. of the base, and remove them to a cold house where they can be protected from frost.

**Hardy fruit.**—Never, perhaps, have the leaves fallen better than they have done this autumn, a sure sign that the wood is ripe, and other conditions being favourable, a profuse blossom will follow in due course. Where advantage has been taken of the mild weather a great deal of the bush pruning, Gooseberries excepted, will have been brought to a close, and the ground will be ready for the annual supply of manure when frosty weather sets in. From bush trees we prefer going to the Plums, thence to Pears and Peaches. When pruning old trees upon which the spurs have become unsightly, a general system of thinning and shortening back should be followed up, or, better still, if vigorous and healthy all the leading branches of a few trees may be entirely denuded of old spurs every autumn, and, the climate being good, they will break abundantly the following year. In cold districts, where the choice or tender kinds barely ripen their fruit and buds, this system is not recommended, as the shock would be too severe upon half-ripened wood. If Peaches and Nectarines have not been unnailed, pruned, and drawn away from the walls, it is more than probable that the blossom and many of the wood buds are becoming prominent, and as a matter of course liable to be seriously injured by severe frost. In some gardens where soil and climate are all that can be desired, these trees are often left to take care of themselves through the winter months. In this garden, which lies cold and damp, we are obliged to root-prune every other year, and the general thinning of the shoots is performed immediately after the fruit is gathered, shortening back being deferred until after Christmas. If planting is still in arrear, no time should be lost in getting the trees into their places, provided the soil is in fair working condition; but on no account should this be followed up when cold, adhesive soils are full of water, as is the case with us at the present time. In gardens of this kind where the elements are against the fruit grower, unremitting attention should be devoted to the burning and charring of all kinds of refuse for use as a top-dressing and mixing with cold, heavy soils.

**Strawberries in pots.**—Where very early fruit is a necessity a few of the most promising plants of Vicomtesse Héricart de Thury may be taken into a light, airy pit where they can be placed near the glass, regularly syringed and supplied with tepid water. If a body of fermenting material can be introduced, fire heat will hardly be needed, at least until we have a change to colder weather, when a night temperature of 45° with a rise of 10° by day will suffice until we get over the shortest day. Where convenient pits or suitable Strawberry houses are not available, the shelves in early Peach houses and early Vineries may be filled with plants; but this practice is not recommended, as they invariably leave a legacy of red spider, which does more injury to the permanent occupants than the ripe Strawberries are worth. The unseasonably mild

weather is causing early kinds on sheltered borders to throw up an abundance of flowers, and unless they are kept as cool as possible, the same easily excited varieties in pots will soon follow; it will therefore be well to keep the lights off plants which have been stored away in pits, and to defer the housing of others until the weather becomes colder. On a dry day examine maiden plants by the margins of walks, from which next year's runners are to be obtained. Tread them firmly into the soil, and feed and protect the roots from frost by mulching with rich rotten manure.

#### KITCHEN GARDEN.

R. GILBERT, BURGHEY.

**THE** early Peas on our south border are now above ground, and the first precaution is to cover them up with coal ashes. This prevents slugs from coming near them, and preserves their tender tops from frost; when we see them above the ashes, they are staked at once, and in addition to staking we put a few Yew branches up each row. A little extra work is thus bestowed on what may be termed winter-sown Peas, but among the many methods I have tried, both here and elsewhere, I have always found the crop more abundant and the Peas earlier under this system than when sown in spring, whether in pots, on turf, or in any other way. Broad Beans, when young, have become a fashionable dish. Our first lot is above ground; they are very much improved by a slight covering of coal ashes. The second lot should be put in at once. Vegetables of all kinds this year are good and abundant. Snow's Broccoli (the king of all mid-winter Broccoli) is now fine. This and all kinds of greens are plentiful. We are gathering French Beans, Mushrooms, Cucumbers, and Tomatoes, and shall have Seakale and Asparagus immediately. This year, therefore, will long be remembered as a fruitful one. Digging and manuring all vacant quarters will form the principal work at this season. Our Mushroom house has not yet had any artificial heat, so that we get good fat Mushrooms. Our beds are now all made inside, but we grow the bulk of our Mushrooms on outside beds or ridges, which are preferable. Cucumbers this season, thanks to the fine sunny weather, look exceptionally well; the young shoots are throwing out their tendrils (a capital sign) well above the foliage; we are cutting them by the dozen weekly.

#### TREES AND SHRUBS.

##### LARGE TREES NEAR HOUSES.

It would be well if the advice given by the Rev. A. C. Rowley (p. 478) was duly considered by planters, as in too many instances large trees may be seen towering over dwelling houses and other buildings, threatening too surely their destruction or serious injury in the event of a storm occurring of sufficient violence to uproot them. No tree should be planted nearer a building than the height to which such tree will be likely to attain; thus, a species which may be known to reach an altitude of say 80 ft. should not be planted at a less distance than that from a building. As regards suburban residences, it might seem that the application of this rule would exclude the planting of many of the finest conifers and other ornamental trees, but there exists abundance of handsome trees and shrubs of dwarf growth in all respects better suited to such situations than tall ones. In nearly all parts of the country large and valuable trees have been prostrated by the late gale; in many instances, however, such trees have or at least might have been raised, the large balls of earth which in most instances adhered to the roots materially assisting in this operation. I heard, indeed, of at least one tree so uprooted which, on the severance of one or more of its heavy boughs, suddenly, to the surprise of the workmen, actually righted itself, *i.e.*, resumed a perpendicular position without any further assistance. Many valuable trees, however, which have had the misfortune to be prostrated have been thought-



lessly made into faggots which might without much trouble have been set up, and would have been found to have sustained but little injury. For instance, I was sorry to see a fine old Mulberry tree near where I write treated in this manner, the setting up of which might have been an easy matter, but the owner, or those in charge of the property, either unaware of this fact, or not considering the matter worthy of attention, allowed the tree to be cut up for firewood. As an example, however, better worth following it may be mentioned that a fine specimen of *Picea Pinsapo*, possibly one of the finest in the country, growing upon the lawn at Culford Hall, near Bury St. Edmunds, like many other fine trees, was prostrated by the gale of the 14th ult. It had been planted upwards of 30 years, and measured 48 ft. in length as it lay upon the greensward. The soil there is unfortunately of a light character, and did not adhere to the roots, which were consequently considerably injured. The tree has, nevertheless, been carefully set up, and is now well secured with abundance of ropes formed of strong wire, and, it is hoped, may recover. Neither trouble nor expense will be spared to render the experiment a successful one.

P. GRIEVE.

*Bury St. Edmunds.*

### Spring Grove Cemetery, Cincinnati.

—Dr. Sterry Hunt, of Montreal, whom we have lately had the pleasure of seeing in London, tells us that this famous cemetery is now exceedingly well stored with hardy trees, and particularly coniferous trees. Many of our readers may have heard of it before, owing to the admirable management and the efforts that have been made to keep it a beautiful garden, as free as possible from the too numerous monuments that disfigure most cemeteries.

**Rosemary twigs.**—Burning a twig of Rosemary is perhaps the most simple and agreeable way of filling a room with incense, which it indeed appears to be. It is a pity this fine old plant has succumbed so often to the severities of our recent winters, but we must go on raising it from cuttings and placing it in warm corners, near walls, or anywhere it will grow, for even if it has to be grown indoors it is well worth growing.

## THE KITCHEN GARDEN.

### EARLY PEAS.

VARIOUS ways are adopted in order to get Peas early; some sow in pans or boxes under glass, and afterwards plant them out, and others sow in the ground in the autumn where they are to remain. The first plan entails the most labour, but it has the advantage of being the surest, as the Peas are more out of the way of birds, rats, and mice, as well as slugs, than when in the ground. The latter are such pests in some soils that it is almost impossible to prevent them from devouring all early green crops. In light warm lands, free from slugs, Peas may be sown any time now with every chance of success, but to make sure of them germinating it is not only necessary to secure good, sound, fresh harvested seed, but to have the ground in good order before putting them in, for if wet, they are almost sure to rot, and to prevent this it is advisable to cast over them a little dry ashes or earth; either of these absorb the excess of moisture, and give the Peas a chance to make a fair start. To ward off mice I have known them covered with chopped Furze, but the best way is to trap the vermin, which may easily be done by means of a brick or tile with a piece of Raffia Grass and a bait tied in it, in endeavouring to get which the mice bite through the Grass and let the tile or brick down. The way to set the tile or brick is to place a stick in the ground for the purpose of tying the Grass to, and having secured the lower end on a level with the earth, the brick or tile should be stood on it so as to bring the bait about 1 in. up the face, when the other end may be made fast at the top of the stick, leaving the brick or

tile sloping at an angle of about 45°. Good traps may also be made by the use of pieces of lath, cut to form the figure of 4, and very small steel spring traps, made like those used for rabbits or rats, are sold at ironmongers, which are famous for catching mice and small birds.

The best place to grow early Peas is on a warm border sloping to the south, where they should be sown in drills drawn about 3 in. deep, and from 3 ft. to 4 ft. apart, according to the kind grown; but whether tall or short, it is always advisable to give plenty of room between, so as to let in sun and air, on the full influence of which success in a great measure depends. After trying many sorts, I find none equal as a first early to Kentish Invicta, which not only is the earliest by some days or a week over all the newer kinds, but it is a prodigious cropper, and the Peas are of a fine deep colour and most excellent in flavour when cooked. To succeed this I should recommend William I., which should be sown at the same time; and to follow on after William I., Day's Early Sunrise is the best. This is a fine robust dwarf Pea of the Marrow-fat class, and comes in close on the heels of those named.

In cases where sparrows are troublesome and eat the young tops of Peas, the safest protection are the Pea guards, made of galvanised wire, which, although apparently dear at first, are cheap in the end, as they last a lifetime; but where these are not used a few strands of cotton run up and down each of the rows will generally keep these bold depredators from doing much harm.

S. D.

### WINTERING POTATOES.

ALL Potatoes will now be in their winter quarters, and if stored when sound and dry they should, with ordinary care, still be in that state, but the open, humid, mild weather which we are continuing to have may be acting on them differently from what dry, cold weather would have done, and it may therefore be well to keep an eye on them. It is just in weather like this that they are apt to start into growth, and when that occurs flavour degenerates, and the growth engenders moisture which quickly causes decay in large heaps. Apart from actually rotting there is nothing so injurious to Potatoes in winter as starting into growth, and it is this that must be guarded against now and afterwards. Champions, Rocks, Queens, and Magnum Bonum are as yet safe, as they are always late in beginning to grow, but early and mid-season sorts are ever ready to grow on the slightest excitement. The larger the heaps the more their contents seem inclined to grow, and for various reasons it is best if Potatoes can be spread pretty well out. By this I do not mean that they should be in single layers, but a mass of them 1 ft. or so in depth is deep enough. In high hillocks or ridges, eating Potatoes lose much of their flavour, and those intended for seed are not benefited thereby. Seed Potatoes and those for eating are better kept separate, and all who wish to care for them both properly, generally try to treat them differently. Potatoes for eating should be kept well in the dark now, as when exposed to light for any length of time they soon become green and bitter. This takes place as quickly now as it would have done when they were newly lifted, and although very little light may be admitted to them, this may be sufficient to taint them.

When Potatoes are in houses or sheds a continuance of wet weather may make the place in which they are stored very damp, and to dry up this it may be necessary to let air and light in, but openings to do this should only be made on a dry day, or better still when dry at night. In some places, however, they may be stored where the doors or the windows have to be opened frequently, and then sufficient straw or some other covering should be thrown over them to keep the light from them. Eating Potatoes which have been put in pits and covered with soil may be looked into occasionally, and when it is seen they are all right in one part further search for failures need not be made, but they should not be left too long without knowing how they are keeping, or much loss may occur. If there is no

decay sometimes they may be sprouting, and therefore will require attention.

Seed Potatoes may be kept in any light place, as it does not matter how green they become, but they must not be allowed to sprout until just before planting time. Many early kinds are showing white growths now, but they will be rubbed off before they are an inch long, and this will be repeated if necessary until March, when they will be spread out thinly and allowed to grow from 1 in. to 2 in. before planting. Frost must be carefully excluded from all Potatoes, but covering them up thickly to keep this out before it comes is only inducing them to start prematurely into growth.

CAMBRIAN.

**Plant fertilisers.**—Mr. Peter Henderson (p. 507) throws some doubt upon the value of special fertilisers for plants. A little more consideration might perhaps induce him to believe that manures specially suited for cereals may not be the best for roots or other dissimilar plants. It is because our agricultural chemists know this that manures of varied compositions are manufactured to suit the special requirements of each kind of crop. The very basis of crop rotation lies in the fact that one kind of vegetable abstracts one form of food from the soil and another kind another. I can state from practical experience that phosphatic manures specially prepared are far more valuable for Potatoes than nitrogenous ones that admirably suit cereals. In stable manures all the required foods wanted are more or less provided, and each plant has to find for itself. With specially prepared manures, the food of the plant is provided in a concentrated form, and there is no waste.—A. DEAN, *Bedfont.*

**Deep and shallow Mushroom beds.**—Mr. Muir is doubtless correct in attributing the fertility of his Mushroom bed to the extra depth of material of which the bed is composed. We generally make our beds 12 in. in depth, but sometimes when we have not had sufficient material we have made them 6 in. deep. Such beds have produced crops equal to those of beds of greater depth during the time they continued bearing, usually about six or seven weeks from the first gathering, but the beds which are 12 in. deep continue bearing for three months. It is therefore evident that beds from 12 in. to 24 in. deep are more fertile than shallow beds, and consequently cheaper, as they do not require any more attention or spawn for a given space than shallow beds.—WM. NEILD, *Wythenshawe, Northenden.*

**Kelway's Gladiator Pea.**—This new Pea I have had on trial this autumn, and I must say that I find it to be an excellent late kind. From a row about 50 ft. long we picked Peas nearly every other day for eleven weeks. How long it would have continued to bear if the gale of the 14th ult. had not laid the crop flat on the ground I cannot tell, as it was then in full bearing. It is a tall Pea, branching out from the stem, and constantly renewing itself with young growth. In flavour it is equal to Veitch's Perfection.—J. C. CLARKE, *Cotthelstone.*

### SHORT NOTES—KITCHEN GARDEN.

**New Peas.**—Amongst those grown here this season I consider John Bull the best. It grows to a height of 2½ ft., is an abundant bearer, pods in pairs, and the quality is excellent. Although the pods are not quite so long as those of Stratagem, the plants are more productive, and the quality quite equal to that of Stratagem. All things considered, this Pea is the best of all. In this neighbourhood it has done well.—D. LUMSDEN, *Bloxholm, Sleaford.*

**Early Peas**—I have grown William I. Pea for my first crop for several years, and I find its cropping quality to be good. The Peas are of a beautiful green colour, and excellent in flavour; I consider Alpha next in flavour, and the Shah comes in a good third. The above three Peas will disappoint no one, neither for quality nor quantity, if grown for an early crop.—D. LUMSDEN, *Bloxholm.*

**Peat charcoal.**—Have any of your correspondents found this effectual either as a fertiliser or as an insect destroyer? Also where and at what price can it be obtained in quantity?—J. NICOL, *Belsfield, Windermere.*



## UTILITY OF OCTOBER GALES.

REGRETS are often expressed regarding the ill effects of gales, but never a word as to their usefulness. I am particularly struck this year as to their value where vegetation of certain kinds is concerned. Here in this humid valley such things as young Tulip trees, Alders, Planes, &c., as a rule do not ripen their tops, and in average seasons these tops are killed in winter. This season the drying, driving winds which we experienced in October have had the effect of carrying off all superfluous moisture, and in many cases the leaves also, and now we have sound hard tops, apparently able to withstand any weather which we may encounter. In fact a few hours' driving wind has apparently accomplished more than weeks or months of genial autumn weather. The effects appear to be not by any means confined to Tulip trees; fruit trees and trees and shrubs generally appear to be equally benefited, and it will be interesting to observe whether next season's fruit crop is in any way affected by the rapid ripening of the summer's growth under the violent influence of an autumnal gale.

T. SMITH.

Nenry.

The storm which prevailed here between the 18th and the 28th ult. has done a considerable amount of damage amongst forest trees and shrubs. In the woods around Ardgowan alone over 2200 have been uprooted, and in the surrounding district the damage is very extensive. Common and Portugal Laurels have suffered very much from the heavy hail which occasionally accompanied the wind. Their sides most exposed are quite brown, and the foliage all torn to shreds.—W. LITTLE, *Ardgowan, Greenock*.

—As evidence of the terrific force of the great gale that swept over the north of Ireland on the night of November 21 and morning of November 22, I have to report that on the Duke of Abercorn's demesne, at Baronscourt, upwards of 5000 valuable trees were uprooted, and immense numbers of those left standing so much disfigured, that they must be cut down. This is independent of some thousands that shared the same fate in the outlying plantations on the same property.—A. DICKSON, *Baronscourt, Newtownstewart*.

**Storm-broken trees**—During the storm of October 14, 1877, a large sweet Chestnut which stood in a prominent position in our pleasure grounds was sadly disfigured through the gale, and yet we could not well spare it, the tree being vigorous, sound, and healthy, and 15½ ft. in circumference. We therefore decided to shorten the remaining branches, so as to make the head more symmetrical, and now, after four years' growth, it has nearly returned to its original form, but during winter, when the leaves are down, it does not look quite so well as it does in the summer. In a few more years, however, it will regain its primitive form, as it is now making growths over 2 ft. long in a season.—J. M. C.

**St. Martin's summer** has returned to us after the terrific gales of Saturday and Sunday. These, though as powerful as those of the 14th of October, have done little or no damage here, as the trees are now stripped of their foliage and afford little purchase for the wind. The latter, however, lasted longer and seemed to have more force than that of last month. The weather is most favourable for planting and all outdoor operations; in fact, we have hardly ever had such a November. Nature is being deceived. The birds sing at morn and eve, and buds begin to swell and cast their outer coats. Roses in the open go on flowering, and by removing the tarnished outside of buds that have been battered by the blasts in the morning, the flowers expand clean and fresh before night. It is astonishing how soon they hasten into full bloom when freed from their semi-dead and tight encumbrance. Not a moment, however, must be lost in protecting Roses. It makes one almost tremble to see them growing away so vigorously with winter so close upon us. They will doubtless need all the help we can give them to carry them safely through. It has also been a favourable time for hunting up and planting Briers, and we have

almost doubled our usual number, as well as put in quantities of Rose cuttings in the open this year.—D. T. FISH.

**The mild autumn.**—So far, this has been the mildest autumn anyone remembers here. It is welcomed by the farmer because there is still plenty of food for the cattle in the fields, thus saving winter's keep, but in the garden it does not promise to be an unmixed good. Celery (Lawson's Crimson), which we never knew to run to seed before, planted in June and July, will "bolt" every head of it if the weather continues as it is a week longer; most of it has run within the last few weeks. Cabbages, Savoys, and Brussels Sprouts are showing the same tendency, and many of the Savoys have already pushed seed stalks up through their hearts, which are large and firm this year. The winter and spring Broccoli are coming in fast, and Backhouse's and Osborn's Winter White are all but over. Neither has ever produced a head until March before. The plants have grown so much since they were lifted and heeled over, that they have quite turned over to the sun again. One day in the middle of November the thermometer stood at 60° behind a north wall, and registered 80° in the sun 5 ft. from the ground in the open quarter, and it was only slightly less warm for days together at a time. To-day (Nov. 28) it is exceedingly mild with a continuous and unusually low barometer.—J. S. W.

—As indicative of the exceeding mildness of the weather, I may mention that I noticed the other day growing in the open air in the gardens at Woodside, Darlington, a few ripe Strawberries of the Black Prince variety—rather an unusual occurrence in this northern locality.—A. MACKIE.

—Amongst unseasonable flowers I notice at the present time the white and blue Grape Hyacinth and Triteileia uniflora. Bulbous plants of all kinds are pushing up in the most vigorous manner; and very curiously, the latest blooming Daffodil, Narcissus Bulbocodium, is in advance of all the others so far as leaf growth is concerned. T. SMITH, *Nenry*.

**Yew Berries—A Caution.**—A case of poisoning occurred this week at Glasnevin from eating Yew berries. The victim, a little girl, aged six years, picked the berries from some of the Irish Yews that border the walks in the Glasnevin Cemetery, and swallowed them. Other children who were with her do not appear to have suffered, though in all probability they, too, ate some of the berries; but it would appear from the inquest that the little victim was constitutionally delicate.—*Irish Farmers' Gazette*.

**Hardy Plant Catalogue.**—The idea of a new catalogue, interleaved with plenty of room for cultural notes, is very good. Should it not be arranged botanically? A considerable number of new species can be added to the present catalogue.—J. W.

**The Bruce Findlay Testimonial**, announced in our columns last week as having been presented in the Town Hall, Manchester, was accompanied by the following highly complimentary address:—

To Mr. Bruce Findlay, curator and secretary of the Royal Manchester Botanical and Horticultural Society.

DEAR SIR,—Your career as curator of the Manchester Botanical Society commenced in the year 1858, twenty-three years ago.

The zeal and energy which you have exhibited for the prosperity of the society, as well as for the general extension of the science of botany, floriculture, and horticulture, have been watched with interest by your numerous friends.

Your suggestions to the Council of the Botanical Society have been characterised by rare judgment. The annual Whitsuntide exhibitions converted a small local exhibition into one of an extensive national character, with the result of giving pleasure and instruction to 40,000 or 50,000 visitors, and also causing a considerable improvement in the financial position of the society. The autumn international display held by the society in 1873 was only second to the grand international exhibition which took place in August of this year in celebration of its jubilee. This

latter exhibition your friends recognise as your crowning achievement.

In the position of curator and secretary of the Manchester Botanical Society you have at all times laboured devotedly, and your friends feel that the present year is an appropriate time to mark the esteem in which you are held by them, not only by reason of those works to which allusion has been made, but for the invincible resolution, quiet perseverance, and business-like qualities you have displayed during your long and arduous career. Your health suffered somewhat from the labour and anxiety for the success of the recent great exhibition. We hope, however, that the beneficial influence of this show, and the appreciation we now acknowledge with pleasure of your work, will be some solace to your mind, and will aid in your restoration to health.

As a token of the esteem of a large circle of friends, we desire your acceptance of a purse containing £1000, and the accompanying gold watch and chain, which we hope may continue to record for you the flight of time during many years of health, happiness, and prosperity. We also desire you to present our best wishes to your wife, together with the gold watch and chain provided for her.—We are, yours faithfully,

(Signed) THOMAS BAKER, Mayor of Manchester.  
JOS. BROOME, Chairman.  
SAMUEL BARLOW, Treasurer.  
ROBERT TAIT, Hon. Secretary.

Town Hall, Manchester, November 23, 1881.

We have received from Messrs. Warne and Co. the following new works published by them for young people: "Shakespearean Tales in Verse," "Comic Insects," "Pinafores, Red Coats, and Blue Jackets," and a new edition of the old and familiar "Puss in Boots," and "Little Red Riding Hood," both great improvements on those we have known for so many years; although small, they are prettily illustrated and tastefully got up. "Red Coats and Blue Jackets" is calculated to please very young children, from its bright and numerous pictures. Some of the illustrations in "Comic Insects" and "Shakespearean Tales" are exceptionally well done for books of this kind. The printing and paper are also good, and altogether they are worthy a place in any juvenile library.

**Single Kerria and Rhododendron Russellianum**—Can you help me to obtain the following plants (one of which has been mentioned in your columns more than once during the past year), and for which I have applied in vain in this neighbourhood, viz., Kerria japonica (single form) and Rhododendron Russellianum, the latter being, I believe, one of the earliest and brightest varieties of this beautiful shrub?—E. H. E.

**Preserving fruits.**—Can any of your readers inform me of a book or periodical, chemical or otherwise, that gives the process by which fruits, &c., are preserved?—CONSTANT READER.

**Himalayan Rhododendrons.**—In last number (p. 517) read—"These two last (*R. calophyllum* and *Maddenii*) are now to be considered as one species," instead of "not to be considered," as printed by mistake.—J. H. MANGLES.

*Pyrus*.—Apply to Messrs. Carter & Co., High Holborn, W.C.

**Naming Plants and Fruit.**—Four plants, fruits, or flowers only can be named at one time, and this only when good specimens are sent.

**Names of plants.**—W. B.—*Lælis autumnalis*.—C. M. O.—*Symphitum caucasicum*.—E. F. L.—*Nephrolepis exaltata*.—Mac.—*Veronica Andersoni*.—Colonel Paget.—1, *Schinus Mulli*, commonly called the Pepper Tree—seeds will germinate in time, but considerable time elapses before they grow; 2, *Smilax mauritanicus*—seeds will germinate readily if freed from the pulp previous to sowing.—Anon (No. 6.).—Apparently *Cotoneaster affinis*, though the material you send is scarcely sufficient to determine accurately, as the difference between *C. affinis* and *C. frigida* is but slight.

## COMMUNICATIONS RECEIVED.

W. S.—G. M.—W. J. J.—J. S. W.—F. M.—W. B. & Co.—R. McC. & Co.—A. D. W.—H. C.—T. D. H.—H. J. B.—D. L.—J. C. C.—F. W. B.—J. C. L.—C. D. G. C.—W. J. M.—W. T.—Col. P.—W. V. F.—F. L.—G. S.—J. S. W.—Cambrian—B. S.—G. J.—W. H.—E. H.—T. B.—J. M. C.—J. S. W.—M. N.—M. N.—R. S.—J. B.—S. D.—P.—J.—T. C.—D. G.—C. W. D.—W. W.—R. D.—J. H.—J. S. W.—J. H.—R. McC. & Co.—E. H. E.—J. N. M.—M. L.—C. R.—W. T.—A. D.—J. D.—B.—J. L.—F. H.—F. S.—C. D.—M. N.—N.—D.—E. W. & Sons—V. W.—D. T. F.—J. G.—E. B.—K. & Co.—C. & C.—W. G.—E. F. L.—Mac.—S. & Co.—J. C. S.—A. M.—J. B. & Son—S. & Sons—J. D.—D. T. F.—J. T.—W. D.—Walter D.—Jas. E. W.—G. C. G.



No. 525. SATURDAY, DEC. 10, 1887. Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare.*

## DRAINAGE OF FLOWER BEDS.

ALLOW me to correct a misunderstanding into which "V. H." seems to have fallen respecting my notes on making flower beds. On page 545 of THE GARDEN "V. H." expresses an opinion that a Lily root seeking nourishment would not like to come in contact with an old coal-scuttle. I quite agree with him, and say further that it is not the object of drainage, placed not less than 3 ft. beneath the surface, to give nourishment to the roots of Lilies or of any other plant. Drainage is believed to promote healthy vegetable growth; first by affording a ready escape for water which would otherwise become stagnant about the roots of plants, and secondly by aerating and ventilating the soil from below; therefore, provided that there is a ready outflow for water from the bottom of the drainage, the more and the larger the cavities that can be kept beneath the soil the better. My directions provided for fully 3 ft. of good soil above the top of the drainage. If the soil is sufficiently retentive, I doubt whether below that depth flower beds can be over-drained, though "V. H." seems to think they can, or whether it matters what draining material is used for beds, provided that it is able to hold up the soil. I know it has been said that some Lilies and some other plants have been known in some soils to send roots 4 ft. down, and I have formerly made beds for Lilies with 4 ft. of soil instead of 3 ft. above the drainage. But I have often investigated the depth to which the roots both of trees and of plants descend, and have been surprised to find, when the food near the surface is good and the soil moderately retentive, to what a little depth they go. I have never been able to trace a Lily root 2 ft. beneath the surface. I submit, therefore, that in default of other materials, which in a clay district are difficult to obtain, the rubbish I mentioned, with 3 ft. of soil over it, answers the purpose quite well.

It is true that material with which the roots of plants delight to come in contact, and which, for some reason, promotes healthy growth, is often used for or is called "drainage;" but it is effective by collecting and retaining moisture, as well as by getting rid of it, and it must be put at a depth far less than 3 ft. If I had described the planting of the bed of which I lately described the making, I should have told how all my choice plants, double Primroses, Hepaticas, spring Gentians, dwarf Phloxes, and Campanulas have nests of rough stones a few inches below the surface, and that some seem to prefer sandstone, some limestone, some broken brick. I believe the cause of preference to be mechanical difference of surface and substance; not chemical difference in the nourishment supplied. So much has lately been written about the chemical requirements of plants and about lime-loving and lime-hating alpine plants, that I have looked through my plants and compared them with the lists given by Kerner and others who have written on the cultivation of alpine plants. I find many plants flourishing and happy in my garden which have no right to be alive at all—lime-loving plants in beds of pure peat, and lime-haters in crevices of a limestone rockery. I own that the latter fact helps me to believe that the roots of plants do not derive any nourishment directly from the stone with which they come in contact, but get their lime if they need it from the surrounding soil, impregnated

with the substance of the stone, decomposed by ages of exposure to the air and rain. I venture an opinion, in conclusion, that for mixed gardening the chemical composition of soils is a subject where ignorance is bliss.

Edge Hall, Malpas. C. WOLLEY DOD.

## HARDY PLANTS.

RETROSPECTIVE NOTES.—At the close of the year it is a usual thing to take stock, and it occurred to me that a few notes of a retrospective character might not be unwelcome to your readers, and might suggest similar communications to some of your other correspondents, by the discussion whereof we may all be benefited.

1. RAISING PLANTS FROM SEEDS has proved very successful with us. A large assortment of seeds were purchased from Mr. W. Thompson, of Ipswich, in the spring, and we have succeeded in raising therefrom a valuable lot of plants, which enabled us to exchange freely with others, as well as to rear our own stock for the coming year. Androsaces, Aquilegias, Erinus alpinus and Hispanicus, Lychnis alpina, Dianthus, and a great many Primulas and others have done remarkably well. Our own seeds saved from last year's plants have also produced good crops of seedlings. It is in this way, therefore, that a large stock of hardy plants must be kept up, as the mortality is great, and you cannot always fill up the gaps as they occur by purchasing from the florist. It is far more satisfactory and very much more pleasant to raise one's own.

2. It is quite practicable to have alpine plants forwarded from their native districts. My daughter sent a good many by post during a Swiss travel in the early summer, and although that was not a good time of year, a large proportion of them, fully two-thirds, survived, and have grown into good plants. All alpine tourists should provide themselves with paper boxes which pack flat in the portmanteau, such as are used by Cannell, of Swanley, for sending plants by post. One of these will hold a dozen plants and come by post for about fivepence, and be delivered in about three days, so that it is quite easy to have plants sent to you in this way. We have had a good many plants from Friebe, of Zurich, by post, and all have done well. Plants received from Woolson & Co., of Passaic, U.S.A., have also done exceedingly well. If ordered in the autumn they arrive in perfect order, and although the carriage from America is dear, the plants are supplied at a reasonable price, so that for Cypripediums, Liliiums, Trilliums, hardy Ferns, and a great many interesting hardy plants, we have proved this to be a good operation.

3. A very noteworthy item for the past year has been the establishing of a simple association of the amateur cultivators of alpine and hardy plants for the interchange of duplicates and for correspondence. By the circulation of an address book a large number of names has been obtained, and a system set on foot by which it is easy to open a correspondence for these objects. By exchanging our spare plants about 30 per cent. of new ones have thus been added to our collection, and many floral friendships have grown out of the correspondence.

4. There can be no doubt of the great increase, not only of the growers of alpine and hardy plants, but also of the number and value of the plants which are now available. Having pursued this hobby for six years, I can see it widening until it is difficult to keep pace with its requirements. The largest numbers of varieties are with the amateurs, and some collections are quite remarkable. It is a pity there is not some way in which these collections of specialities could be seen occasionally; of the Primulaceæ

for instance, or Narcissi, or Saxifrages, all most interesting, but very seldom to be seen by the public.

5. If I were asked which plants had given me most pleasure during the past year, I should say that first of all came the Narcissi or Daffodils. It usually happens that the various sorts of these succeed each other in flower over three or four weeks, but last spring, owing to the exceptional character of the season we had them nearly all in flower at one time, and they remained much longer in bloom than usual, so that the enjoyment was superlative. The Primroses also were grand last spring, and so were Rhododendrons. It was also a good year for the Campanulas, but, as a rule, the summer bloomers were not a good show, and especially the Roses, which with us were a failure altogether. It has been a bad year for autumn flowers, and especially the Asters, which have been very poor, and the Phloxes and Gladioli were not so good as usual. The Anemone Honorine Jobert was, however, in grand form, and continued for a lengthened period. Here again far into December we have the spring flowers, Primulas, Polyanthus, Wallflowers, Scillas, and even here and there a Narcissus in bloom on the 3rd of December. I tremble to think what will happen if one of the hard winters follows.

6. The mention of winter reminds me that when I recommended the use of sawdust manure in autumn as a covering for flower borders and rockeries, some of your correspondents urged that it was not a good manure, because it encouraged fungus growths in the soil. After two years' experience we have, however, adopted it again, and all our borders and rockeries are carefully covered over with it, the plants having it all round their roots. After very careful examination I am sure that the objections urged against it do not obtain, and that there is no better or cleaner looking material for mulching than this. It lies on the borders for five months or so, during which time the rain carries down most of its manurial contents into the soil, and whether the sawdust which remains be turned into the soil when spring comes or is removed to the manure heap matters little, as it is good manure in the end and does no harm to the soil. As a non-conductor of cold it cannot be excelled, and this is the important point after all. It is entirely to its use in this manner that I account for the very few losses we had last winter in our rockeries and flower borders.

7. LASTLY.—After the experience now of two or three years, I am quite sure that it is practicable to work a beautiful garden almost entirely with hardy flowers. The only difficulty is the autumn, and for this late season we still use the scarlet Geranium and the yellow Calceolaria, and with these I have no wish to dispense; for the rest I am quite convinced that more beautiful shows are attainable from hardy flowers than by the old half-hardy bedding-out plants.

Didsbury.

BROCKHURST.

## FINE LILY OF THE VALLEY TREE.

SOME at least of your readers will, I am sure, be interested in the untimely fate of that veteran Lily of the Valley tree (*Clethra arborea*) which until quite lately grew at Valentia Island, the seat of the late Knight of Kerry. It was blown down (broken off close to the ground) on the night of the 30th October—so I hear from Miss Fitzgerald, who has kindly supplied me with particulars of its measurement. The girl just above the ground where it broke was 3 ft. 3 in.; at 2 ft. from ground it broke up into one main and four secondary branches; the main one at 3 ft. from ground measured 1 ft. 9 in. in girth, and the total height, before some 7 ft. was cut



off its top last year, was 27 ft. 8 in.; it had braved the frosts of recent years without any injury whatever, and flowered every season in the most profuse manner. I am not aware if any photograph of the tree exists, but it is always a pity not to have pictures of exceptional trees like this one, for one never knows what will happen to them.

Fortunately, there exists another specimen in the same garden, though a smaller one, and curiously enough this stands in a much more exposed position than the big one did, and was not injured by the gale; in fact, the wind was registered at the observatory as only just short of a hurricane. The very large Fuchsia, of which a description has appeared in *THE GARDEN*, was not in the least injured, but a smaller one with four branches radiating from a central stem was completely demolished, all the branches lying in different directions as though a sudden squall had come down on it. From many disasters that occurred to trees and shrubs at that time and by the more recent storms, it appears that the most destructive currents are generally very narrow ones. A tree standing in the line of the current goes down, while those to the right and left of it are uninjured. T. SMITH.

Newry.

#### DUMESNIL'S MOSS.

THIS, which has been so much talked of, has at last been introduced into this country, and we have a plant growing in one of our rooms treated in this way which seems to thrive fairly well. But the time is very short in which we have tried it, and a trial on a larger scale with a variety of plants would only settle its value. We notice, by the way, after watering the plants that a somewhat disagreeable odour arises in the room. It may be remembered, perhaps, that the author's plan is the preparation of common Moss by some chemical solution, so as to enable it to support plants wholly without the aid of soil. As Moss in dry rooms dries very quickly, it appears that frequent watering is better than occasional heavy doses. It is claimed that where many plants are grown in apartments this Moss is advantageous in allowing the plants to be in many positions, which could hardly be the case if they were all growing in heavy pots; besides, they are much lighter and more easily managed. It is sold at present by M. F. de Fommervault (sole consignee for Great Britain), who has called our attention to it, and whose address is, 28, Frith Street, London, W.

#### EDITOR'S TABLE.

THE BLUE VANDA FROM CREWE HALL.—We have to thank Lord Crewe for a very beautiful and very wonderful head of flowers of his blue Vanda, which Mr. Whittaker appears to have the secret of cultivating as it is seldom seen! We cannot call it a spike of flower; the blooms stand out so bold and free that one loses thought of anything but of large azure blossoms floating in the air. There were fourteen of them on the one stem! If fine blue flowers are somewhat rare generally, they are much more so among the Orchids, and this large and lovely flower might without exaggeration be called a queen in this interesting race of beautiful flowers.

ODONTOGLOSSUMS FROM WORTLEY.—These come to us from Wortley, well grown, Mr. Simpson asking, as regards *O. crispum* and *O. cirrhosum*, "which is the best?" Well, as he grows them, we are very much inclined to say *cirrhosum*. The forms of this that are large and bold are very beautiful, because so wild and free,

twisting and pointing all their elegant divisions of the flower, which laugh to scorn, as it were, all our little laws based on globes and circles, and withal making a wreath of flowers of exquisite beauty. A coloured figure from a well grown specimen of such a form as that sent us from Wortley would tend to make this beautiful plant more popular. If it can be freely grown by all, as we suppose, it will be a great favourite for the house.

HOLLIES FROM HARDWICKE.—Mr. Fish sends Holly shoots wreathed in berries, but while he rejoices in these legitimate products of the season he is angry with the sham summer we have had of late. Well, there is no doubt that the English Holly, which unhappily many cold countries inhabited by our race cannot produce, is a shrub of which we should all be proud and take intelligent care. It wants no care, it is true, to endure in our climate. One may see it now on hill or in valley, north, south, east, or west, in bare hedgerow or sheltered wood, glistening in green and coral, good alike in all soils and positions; and yet it cannot withstand the choke-muddle shrubbery where many a fair Holly has died for want of space and peace. Mr. Fish might well use his eloquence by telling us how to enjoy more and more this priceless evergreen that breaks into so many varieties, silver, gold, and green, differing from each other in so remarkable a degree that they have the same value for the garden as if they were all different species from various countries.

ZYGOPETALUM FROM GUNTON.—A vigorous shoot over 2 ft. long, carrying for the greater part of its length blooms which make this fragrant Orchid so welcome an ornament to the warm house in winter. Mr. Allan seems to grow it very freely, and it is well that cultivators are noticing its fine qualities as a winter plant. Whether we grow Orchids or not (and it is a pleasure to hear how their cultivation is spreading both in this country and in America), lovers of winter flowers should not fail to have plenty of this fine old plant. How to grow it freely Mr. Allan can tell us. The habit is so bold and so different from that of other things that one can hardly make it look dumpy like so many plants of the greenhouse and stove.

ANEMONES IN SURREY.—"St. Bridgid" has not all the Anemones to herself, for they come in bright flower to us from Rokefield, near Dorking, only the Surrey plants are large single kinds, and do not include among them those free semi-double ones which "St. Bridgid" on her Hill of Howth is so rich in. One could make a very fair garden of Anemones alone, but I have never seen a real garden of Anemones. Why should we not have special cultivators of these plants? not only of the various forms of the Poppy Anemone alone, but a good collection of the whole race of Windflowers from alps, chalk downs, copses, woods, or sunny plains. A noble northern family not requiring much care beyond gathering and planting. How seldom one sees a healthy type of the beautiful Pasque flower which adorns our own chalk downs in various parts so well! Good old plants of it are handsomer than the small pinched wild plant. If one could only show the pictures that are made by Windflowers in countless green, rocky, and woody places all over the northern wilds, no further incentive for their culture would be needed.

DARWIN'S BARBERRY IN DECEMBER. This comes in charming bloom from Surrey (Rokefield). What a fine hardy shrub, and how suitable for our climate! Only we cannot expect it

to flower in spring and winter too, and it is infinitely better that it should keep those golden buds and blossoms in their place until the cold is passed and flowering time is more sure. All our beautiful shrubs and low-flowering trees should be treated more like this, which one often sees grown by itself or in a group for no special reason that does not apply to others. We have many other things that would repay for the same attention.

DENDROBIUM FORTIOSUM GIGANTEUM.—Singularly noble as regards the form of flower, and an Orchid extremely well worth growing. Its fine marble-like texture and hue, as well as its form and size (3 in. across and 3 in. deep), point it out as a valuable flower for rooms, and I have never seen more beauty in any single blossom than in this from Wortley. Only one must in some cases look to more things than a mass of colour or first impressions, and this well repays examination in various positions by day or by artificial light, and is a perfect type of flower-building in both "design and workmanship." I had it in a variety of different positions on the table before me, and also in the hand, and in every one it is a charm in form and in "light and shade."

POINSETTIA FROM WORTLEY.—To see this plant well grown we generally look to the market grower, who supplies our dull cities freely enough in the winter. Nothing contrasts so much with their gloom and grimness as a broad healthy crest of this. Such comes to us from Wortley over 15 in. across the head, with leaves 7½ in. without the stalk, and as green and healthy as those of a young Brassicaceous dicotyledonous exogen to use the language of a certain school and not to make too abrupt a comparison between the useful and beautiful. We have seldom seen a handsomer thing, and trust Mr. Simpson will tell us how he gets such fine vigour and colour into it. What has become of the double Poinsettia which poor Arthur Veitch once brought to this office in a box—an immense rosette of brilliant bracts.

A ROSE FROM SCOTLAND.—A lady sends a most fragrant Rose from Achaierdh, in far-away Nairnshire. It is a bloom of Louise Peyronny cut in the open air on December 2. We are too apt to assume that all the favoured spots are in the south.

FLOWERS IN YORKSHIRE.—We see and hear so much of the flowers in the "milder districts" that it is pleasant to know the recent geniality of November and December has been extended to the cold north. We were agreeably surprised by a handsome bunch of hardy flowers gathered at Wortley Hall, near Sheffield, on the 5th December—Stocks Wallflowers, Marigolds, Carnations, Mignonette, Roses, various Christmas Roses, Starworts (*A. Amellus*), Mezereon, Primroses, double and single, yellow Jasmine, Heaths, and Auriculas. We are glad to welcome Mr. Simpson among the reformers, and believe he has a reward already in these sweet Wallflowers in winter and many-budded Christmas Roses. A little more out of the swaddling clothes in which we have all been bound so long, and we shall find our leading gardeners the best advocates and expositors of an artistic, natural, and English system of flower gardening.

SCHIZOSTYLIS FROM GUNTON.—We have never seen flowers of this so good as from Gunton on December 6. Mr. W. Allan grows it in a way not common, and which others may be glad to hear of. "The plants are divided in spring and planted out in a prepared bed of peat, leaf-mould, and loam. In this mixture they grow so



freely that the balls of soil and roots can only be put into pots of large size. To avoid the labour of potting a three-light pit is filled with new leaves in the first week in November, and the plants are placed thereon quite thickly. A little leaf-mould is worked in between the roots and a minimum temperature maintained of 45°. For some time the plants so treated have been most brilliant with eighteen to twenty spikes each. The above plan is a great saving of labour and space, and gives a splendid lot of cut blooms."

**CONVOLVULUS CNEORUM AT BITTON.**—Mr. Ellacombe sends this silky and pretty dwarf Bindweed from Bitton as an unexampled evidence of the weather and its effects. Though never showy, this is a distinct and good kind, and does not ramble too much like some of its race. It is not free on cold soils.

## ORCHIDS.

**WINTER ORCHIDS AT UPPER HOLLOWAY.** THE rich collection of Orchids in Mr. B. S. Williams' nursery is now highly attractive, a wonderful variety of the winter flowering kinds being in full beauty. The really desirable kinds may, however, be reduced to about fifty. Besides a host of the commoner Orchids, such as *Calanthes* and *Cypripedes*, which on account of their large numbers make the houses gay, there are many of unusual interest. Among these are

***Zygopetalum hybridum***, an extremely beautiful variety in the way of *Z. Gantieri*, but abundantly distinct from that kind, especially in growth. The flowers are large, the sepals broad and of a rich metallic brown, the lip wide and of a bright rich purple. It is a showy plant, and appears to be both a free grower and a prolific bloomer. Another beautiful variety is *Z. Clayi*, though not perhaps so fine as the preceding, the flowers being smaller and the colour not so brilliant. The old *Z. Mackayi* and its finest form *superbum* is represented by some remarkably fine specimens

***Dendrobium Goldiei***.—This handsome Australian Orchid we found beautifully in flower, and had an excellent opportunity of comparing it with *D. superbiens*, with which it is thought to be too nearly related. Whatever its claim may be to be botanically distinct, it is abundantly so for garden purposes, the sepals of the flowers being broader, the lip more pointed, and the whole tint of colour a much richer tone of amethyst. Side by side, *D. superbiens* has a decidedly inferior appearance, though it is one of the most beautiful of all *Dendrobies*. Another Australian species, *D. bigibbum* and its superb variety, were finely in bloom. It is a most satisfactory Orchid to grow, as it never fails to produce a good supply of bloom in the dull winter season, and, besides, it may be grown in a much lower temperature than that suited to the majority of *Dendrobies*.

***Cœlogyne barbata***, one of the most distinct Orchids of the season, is beautifully represented. It is certainly one of the handsomest of the *Cœlogyne*s, the flowers being large pure white, except the concave lip, which is bronzy brown and copiously bearded with fine hairs. The flower-spikes are borne erect, quite different from the other species.

**Lady's Slippers**, though always more or less in bloom in such a collection as there is here, are now particularly conspicuous. Amongst them are huge masses of the old *Cypripedium insigne* and its varieties, and also of *C. villosum*, some of which are furnished with several dozens of flowers. Maule's and Chantini's forms of *C. insigne* are likewise finely represented, though it must be admitted that the distinction between them is very slight when both are seen in their true characters. Both are so superior to the original that they should in all cases be preferred,

the purity of the white in the dorsal or back sepal in both renders the flowers very handsome. Of the choice little *C. concolor*, there is some well-flowered plants, the creamy white blossoms being excellent companions to the waxy white blooms of *C. naviium*. Those who like Lady's Slippers should by all means become possessed of *C. Boxalli*, if they have it not, as it bears handsome flowers, similar to, but quite distinct from those of *C. villosum*, being darker in colour and altogether more richly spotted.

**Cymbidiums.**—The very handsome *C. Lowianum*, the species having large flowers with orange and red lips and green sepals, may be found here in perfection, one plant of it having a long spike furnished with two dozen flowers drooping gracefully from the base of the stem. *C. Mastersi* with lovely white blossoms on erect spikes is a charming Orchid that everybody admires, and even when not in flower the elegant grassy foliage is ornamental. The somewhat despised *C. sinense* with its dull coloured flowers fills the house with its powerful perfume, which is similar to that of *Violets*, and for this alone it is worth a place in every garden.

**Cool Orchids** form a prominent portion of the bloom. Of *Odontoglossums*, that chastely beautiful variety *O. Roezlii album* is uncommonly fine, and the exquisite aromatic perfume emitted by the snow-white blossoms renders it all the more charming. Among such a numerous and beautiful genus it is a difficult matter to select the finest, but this should be entitled to the first consideration. The lovely *O. nebulosum*, too, cannot fail to be admired by everyone, particularly such a fine variety as we saw in bloom here, the flowers being unusually large and abundantly spotted. The rarely-to-be-met-with *O. Uro-Skinneri* is a desirable winter Orchid, and if a good variety can be obtained it is a really fine Orchid. Of course *O. crispum*, *cirrhosum*, *maculatum*, *Rossi*, *gloriosum*, *odoratum*, and others of the commoner kinds make a fine display. Among the *Masdevallias* the orange tinted form of *M. ignea* is the chief attraction, and it is indeed a beautiful variety, showy in flower, free in growth, very floriferous, and always blooms in the dull winter season. The charming snow white *M. tovarensis* is in fine contrast to the preceding, and, like it, is one of the most valuable of winter Orchids, being particularly useful for cut purposes, and ladies have a great partiality to it for personal adornment. Among other *Masdevallias* in flower were noticed *M. Wagneri*, *polysticta*, *Estradae*, and *melanopus*, highly interesting, though not very showy.

**Lælias and Cattleyas.**—The graceful and pretty *L. alba* with its ivory white flowers with rosy lips was charmingly in flower. On account of its delicate colour it is now in great request for bridal bouquets, and for this purpose it is admirably adapted, as the flowers are all borne at the tip of a slender stem. *L. peduncularis* is another beautiful species with soft blush tinted blossoms with conspicuous dark centres. *L. anceps* and varieties, *L. autumnalis* *atrorubens*, of which we have said much lately, make a beautiful display, as does also an extremely fine variety of the magnificent *Cattleya exoniensis*.

Other Orchids in bloom include the pretty *Barkeria Lindleyana*, the noble *Angraecum eburneum* with its large ivory white blossoms, various *Vandas* of the *suavis* and *tricolor* types, *Lycaste lanipes*, a handsome species with noble blooms of a greenish white; *Compæretia falcata*, a neat little epiphyte with bright magenta flowers; *Oncidium Forbesi*, and the charming little *O. cheiroporum* with its sparkling yellow blossoms that are sweetly scented. If any Orchid deserves to be better known it is this last, as it differs from the majority of the *Oncidia* by thriving and flowering well in a cool house. It comes from the volcano of Chiriqui, where it is found at an elevation of about 8000 feet. W. G.

**Thinning out bulbs of *Cœlogyne cristata*.**—I recommended this practice in THE GARDEN about two years ago in the case of

plants crowded with old and flowerless bulbs, and the utility of the practice was disputed. Our large plants which were so severely operated upon are now jammed again with fine bulbs of more uniform size and bristling with flower-spikes. I certainly think a plan which enables one to replace old and useless bulbs with new flowering ones a good one.—J. S. W.

## SHY FLOWERING ORCHIDS.

THE season has now arrived when Orchids that make their growth during summer should be put to rest. In the case of those that get the name of being shy flowerers, an opinion used to prevail that they could be induced to bloom by subjecting them to a long course of dry treatment, by withholding water and keeping them in a dry atmosphere, such as would cause them to shrivel, a process through which premature loss of leaves and weakening of the plants usually resulted. It is needless to say that this excessive drying up was injurious and inconsistent with the natural habits and requirements of the plants, the flowers produced under such conditions being but a feeble reflection of what follows more intelligent management. The species usually submitted to this over-drying process are generally those that require during the growing season more air and light, with a drier condition of the atmosphere, than that needed by the majority of Orchids. Amongst them may be included considerable numbers of the West Indian species, and others from both the western and eastern hemispheres, that come from districts where with a moderately high temperature the air is drier than that of the localities where the greater portion of cultivated species are found. Beyond such exceptional species as the above, there are, too, not a few of the long bulbed *Dendrobiums*, like *D. Wardianum*, that when grown with less shade and more air, conditions such as are found in an ordinary plant stove, will produce flowers on double the length of their bulbs that the same kinds generally do when treated in the manner usually followed in houses exclusively devoted to Orchids. There is a considerable difference in the naturally free flowering disposition which some Orchids possess compared with others, but it often happens that species which get the name of being shy flowerers do not deserve it, the fault being in the treatment.

**Reputed shy bloomers.**—The following are a few that represent the so-called shy bloomers, but which will flower freely and regularly if treated as they require to be during the growing season: *Vanda teres*.—The reeking atmosphere and over-shading to which nearly all the species that came under the head of East Indian Orchids were subjected prevented the possibility of a plant like this *Vanda* flowering satisfactorily. It requires more air and less shade and moisture than many species from the eastern hemisphere. *Cymbidium eburneum* is another plant that for a long time did little good with most growers, blooming sparsely and oftener than otherwise dying out, but now when the necessity for its being grown cooler is understood, it not only grows and flowers satisfactorily, but has a vigorous appearance that gives promise of continued health. The pretty *Bletia Shepherdii*, from its being a native of the West Indies, was often grown in so hot an atmosphere, that it rarely produced more than a few stray flower-spikes, but with a lower temperature, plenty of light, and a free admission of air daily through the growing season, as well as less moisture in the atmosphere—conditions under which it is common with many other West Indian Orchids do better than when treated like the warmest of the eastern plants—it flowers as freely as could be wished. *Broughtonia sanguinea* has been killed by the thousand through the steaming close treatment to which it has often been subjected, yet where the management is such as to correct these conditions it goes on increasing in strength and producing its distinct highly coloured flowers regularly. *Cattleya citrina* grown in a temperature approaching that of a warm greenhouse continues to increase in strength, the bulbs



and leaves getting double the size they attain when kept hotter, and it flowers as freely as any of the genus. *Dendrobium speciosum* used often to be grown until it was 2 ft. in diameter without the sign of a flower, through being subjected to too much heat, shade, and vapour. The beautiful little *D. pulchellum* is likewise often given up, or allowed to keep on making puny growth and few flowers; nothing, indeed, but its tenacity of life prevents its being killed by the lengthened drying up it gets in futile attempts to correct in winter that which has been wanting in its summer treatment. *Lælia albida* and *L. majalis*, the former a lovely flower, and the latter one of the most beautiful of small growing Orchids, are often all but bloomless when grown under conditions that suit the majority of the genus to which they belong.

**Miltonias** belonging to the *spectabilis* section, including the grand *M. Moreliana*, unequalled for its shade of colour, have almost disappeared from collections through the inability of their leaves to bear even an amount of light that is insufficient for nearly all other Orchids, but when given as much air as is admitted to a warm vinery, their foliage suffers little if slightly shaded, and they then are amongst the most useful and long enduring of autumn bloomers. *Renanthera coccinea* is a plant that can scarcely be killed either by over-drying or any other bad treatment, yet more fail to bloom it than succeed, although when its wants whilst growth is being made are supplied, it blooms as regularly as *Dendrobium nobile*, and is undoubtedly one of the most enduring and distinct in its flowers of all Orchids. These are only a few of the many species that present themselves to my memory, and which go to illustrate what I have said about not a few Orchids getting the name of being shy flowerers when in reality they do not receive proper treatment during the time when their growth is being made; consequently, all the punishing through lengthened drying to which they are subjected in winter fails to make them bloom. It is needless to say there are some genera that will bear without injury a long and severe drying ordeal that would be ruinous to others; the *Dendrobiums*, especially those that are deciduous in habit, mostly require to be kept dry for a considerable length of time, but if the treatment whilst growth is being made is not such as to cause a disposition to flower, there is nothing gained by over-drying the plants whilst at rest, with a view to induce them to bloom, for the small amount of flower that in this way they can be forced to produce is little in proportion to the injury it does the plants. In the resting of Orchids it is necessary to take into account the ability of the different species to bear a lengthened dry period.

T. BAINES.

#### CYPRIPEDIUM INSIGNE MAULEI.

I THINK if I were restricted to one variety of the *Cypripediums* I would select this beautiful kind before any of the others. I wonder that it should ever be confounded with *insigne*, to which it is far superior, and besides it is at least five weeks later in blooming grown on the same shelf with *insigne* in a cool house. A dealer in Orchids told me lately that its fault was that it was a shy bloomer, but with me it flowers just as freely, if not better, than *insigne*, which is certainly an unfailing and free-flowering variety enough. I divided a little plant of *Maulei* two years ago (in order to increase stock) into seven pieces, each piece consisting of only one good scape (the divided plant only occupying a 5-in. pot), and this year five plants, two having been given away, have on them twenty-eight flowers, and probably those given away have done as well. If so, it would make about forty flowers. This is nearly a flower to each scape, which is more than *insigne* produces. The vagaries of some Orchids are perplexing. Can any grower tell me why one plant of *Dendrobium Wardianum* grown beside another from which it is hardly distinguishable in its flowers begins to show bloom before the leaves are off, and the other goes to rest a bit?

It is a fine strong plant with numerous stems nearly 3 ft. long, which are showing regularly at every joint. While the leaves were yet quite green at the points of the stems, and the stems themselves not ripe to the end, the flowers were pushing through the bark. At the end of October the plant was moved to the cool end of the cool division among the *Odontoglossums* to retard it, and kept dry enough to cause the stems to shrivel, not being quite ripe, but it keeps moving, and will apparently be in flower long before its natural season. I have no objection to its flowering in mid-winter, but it is a peculiarity of the plant. It has not been pushed or started early, for it was kept back last year and was not started into growth till March at the cool end of the stove, where it stood all summer subjected to the ordinary degree of heat and moisture, moderation being the rule in both.

J. S. W.

**Cool Orchid culture.**—The following note received from a friend the other day contains some valuable facts relating to cool culture: "I have," he says, "Masdevallia Lindeni, ignea, and Harryana superba in bloom for the second time this year. I am of opinion that the British public have a good deal to learn yet about cool Orchid growing. I have a few *Odontoglossums* growing in an ordinary dry greenhouse; they have never been washed or syringed since I had them, now three years ago. I never saw Orchids do better; the size of the bulb increases with each growth, and there is no living *Sphagnum* about them, as I give them too much air, and the house is too dry to agree with its constitution. My plants are grown quite against all the directions given in books on Orchids." This corroborates Mr. Bain's practice of years ago, and, in a great measure, my own experience of to-day. It is difficult to emancipate one-self from prejudice and the practice of the majority, but here is a case where it seems to have been done with considerable success. One thing in Orchid growing seems now fairly settled, and that is, heat, air, and moisture being duly proportionate, it matters but little what in compost the plants are anchored. Cocoa-nut fibre, charcoal in nodules and crocks form a first-rate compost, and for many Orchids which like rather a dry rooting medium, Hypon Moss forms a far better surfacing material than *Sphagnum*; I allude to such Orchids as *Trichopilia*s, *Cattleyas*, *Lælias*, *Mormodes*, *Catasetum*, *Brassavolas*, and others of the Mexican house or dry and moderately warm growing kinds.—ANONYMA.

**Zygopetalums at Gunton.**—In Mr. Fish's account (p. 531) of this place, instead of one plant of *Zygopetalum Mackayi* mentioned, it should have been plants, as we have two, each bearing fifteen spikes of flower. I send you a spike with eight flowers, the greatest quantity that has ever come under my notice. This Orchid still deserves a place in every collection; it flowers at the duldest season when flowers are scarce and when country houses are filled with company. For indoor decoration it is unsurpassed. A plant of it will fill the whole house with its delicious perfume. A little rough usage does it no harm. Our plants have some seasons been in the room for a fortnight, though a week is long enough. Fourteen years back these plants were in small pots, now they are growing in No. 1, or the largest size, and have been used each year for indoor decoration.

—W. ALLAN.

**Sowing Orchid seed.**—When, how, and in what soil should the seed of *Cypripedium spectabile* be sown? Does it require heat to germinate? W. S. F. [Sow the seed as soon as ripe on the surface of soil consisting of equal parts of live *Sphagnum* Moss chopped fine and fibrous peat broken tolerably fine. Place the soil in well-drained pans or pots, water well, afterwards sow the seeds, then put a bell-glass over pan or pot, and place it in an ordinary greenhouse.]

**Vanda cœrulea.** A friend tells us that he has recently seen among the Orchid collections in the north of England plants of this lovely Orchid with spikes between 2 ft. and 3 ft. in length.

**Book on hardy Orchids.** Is there any cheap book on this subject? W. S. F. [That we know of.]

#### NOTES OF THE WEEK.

**FLOWERS FROM BELVOIR.**—A fragrant box of open-air flowers from Colonel Stuart Wortley, gathered by him and by Mr. Ingram in the Belvoir Castle Gardens, December 6. We hear so much of the flowers of mild districts that it is delightful to us to find so many from Belvoir's woody knoll in the midlands. The following are the names:

Stocks	Auriculas
Winter Heliotrope	Fragrant Honeysuckle
Pentstemons	White Arabis
Scarlet Avenas	Hepatica
Chinese Pinks	Greenland Poppy
Mesembryanthemum	Escallonia
Periwinkles	Forget-me-nots
Barberries	Yellow Alyssum
Starworts	Cornish Heath
Chimonanthus	Creeping Forget-me-not
Lamiums	Yellow Jasmine
Single Rockets	Purple sea purses
New Zealand Speedwell	Large Erodium
Alpine Phloxes	Andromeda
Poppy Anemones	Morina
Irish Heaths	Arbutus
Yellow Wallflower	Lycnis
White Cardamine	Potentilla
Rhododendron dauricum	Drummond's Phlox
Gibraltar Candytuft	Leadlily
Vernal Gentian	Blue Lobelia
Broad-leaved Saxifrage	Mignonette
Yellow Rock Yarrow	Geranium, &c.

**COCHLOSTEMON JACOBINUM.**—One of the most noteworthy plants in the Victoria Nursery, Upper Holloway, is a fine flowering specimen of this noble Spiderwort. Even when not in flower, it is very handsome on account of its huge vasiform tuft of broad, bright green leaves, edged with purple. It produces its blossoms from the base of the tuft of leaves in long, irregular, loose clusters, furnished with large membranous rosy-purple bracts. The blossoms, which are pleasantly scented, are deep rich purple, and curious in shape, the petals being beautifully fringed. They do not continue long in perfection, but any defect in this respect is compensated by the large number of buds which open in quick succession. It is an admirable plant for placing on a pedestal in a room, the flower-spikes being pendulous. In the nursery in question it is grown in a warm, moist stove, and the fine development and healthy appearance of a large number of plants here indicate that the treatment they receive suits their requirements.

**ASPARAGUS LETHIOPICUS.**—A fine specimen of this is now in flower in the succulent house at Kew. It is planted in a mixture of loam and leaf mould, and the shoots are trained along a rafter—too stiffly perhaps for so graceful a plant. The collection of greenhouse *Asparagus* seems to be in this house, and amongst them is a pretty species called *A. decumbens*, which, a few weeks ago, bore a profusion of little white flowers, which hung like sparkling dew drops among the small and graceful leaves, or cladodes, as they are called. It is now bearing a number of fruits, and although these are now as large as Peas, the stamens still remain at their base, and the orange coloured anthers brighten them up almost as much as they did the flowers.—B. [Graceful and pretty as *A. ethiopicus* is, it has unfortunately a most detestable smell.]

**WINTER FLOWERS AT CHISWICK.**—Considerable care is taken at the Royal Horticultural Gardens to display in a well grown condition the various kinds of flowering plants as they come in season, but at no time of year do the collections create so much interest as in winter. Now the houses are gay with *Chrysanthemums*, zonal *Pelargoniums* of the finest varieties, brilliant *Poinsettias*, winter-flowering *Salvias*, *Begonias* of various kinds, the beautiful old *Linum trigynum* with golden blossoms, blue-flowered *Browallia*, *Abutilons* in variety, and *Justicias*; while among Orchids there are quantities of the grand old *Cypripedium insigne*, and



Lycaste Skinneri in themselves make a fine display. These are but a few of the things that may be seen just now at Chiswick.

**BUTTERFLIES IN DECEMBER.**—It may be interesting to know that I have this day (Wednesday) taken a perfect specimen of the brimstone butterfly (*Conepteryx rhamni*) in this garden, such mild weather as we are now having causing it to leave its winter abode at least four months before its time. I know it is quite a common occurrence on any fine day in winter to see our old acquaintance the common tortoiseshell (*Vanessa urticae*), also the common garden white, or as it is sometimes called, the Cabbage white (*Pieris rapae*), but I think it is worthy of note to see at this time of the year the brimstone. The latest I remember having taken it before was on Oct. 29, and that at Ashford, in Kent, considered to be a warm place. I may add that Mignonette is full out, and so are Roses, intermediate Stocks, Wall-flowers, and many other summer flowering plants, all in bloom out in the open air.—J. E. WHITING, *The Heath, Hampstead*.

**SALVIA BETHELLI.**—This autumn and winter-flowering Salvia, which has been finely in bloom for some time, is very desirable for conservatory decoration. Why it should be catalogued as synonymous with *S. involucrata* is always a wonder to me, as there are three distinctive differences. The blossoms are of a purplish rose shade of colour, the foliage decidedly smaller than that of *S. involucrata*, and the stems of a reddish purple tint, while *S. involucrata* (which does not come into bloom until very much later) has much brighter rosy blossoms, large cordate foliage, and green stems. They are both worth growing, as one succeeds the other. Anyone who has seen *S. involucrata* grown out-of-doors in the south of France can testify to its grand effect for massing.—J. T. Poë, *Riverston*.

**SENECIO OXYRILEFOLIUS.**—The Cape of Good Hope Groundsels seem to have a peculiar tendency to mimic other plants. Last week we mentioned one (*S. macroglossus*) that might be easily mistaken for an Ivy; indeed, it is called German Ivy, and a few days ago we noticed a species in the Victoria Nursery, Upper Holloway, whose foliage represents in a striking manner that of the little *Oxyria reniformis*, a Himalayan plant of the Polygonum family. *S. oxyrifolia* has slender stems and round leaves, and on account of its trailing habit is well suited for growing in hanging baskets, a purpose to which it is put with good effect in the nursery just named.

**PEAR DIRECTEUR ALPHAND.**—Messrs. Croux, of Sceaux, send us fine specimens of this Pear, which, however, are not yet in a state to judge of their quality, without knowing which we can only speak of them as the raisers do. At first sight the Pear has somewhat the look of Uvedale's St. Germain, but Messrs. Croux point out that it is quite distinct. It was obtained from Doyenné d'Hiver and Duchesse d'Angoulême. This Pear is fit for use from March to May. The stalk of the Uvedale is thin, short, and indented, while that of the Alphand is thick, fleshy, and swollen, as in the Doyenné d'Hiver. We are sure that this Pear will have a fair trial at the hands of good growers, and when we are familiar with its eating quality we may speak of it again.

**LOBELIA LITTORALIS**, or *Pratia angulata*, as it is also called, is a pretty little New Zealand plant, very desirable for cultivating in suspended pots during summer and winter, as its slender wiry shoots are laden with small, plum-coloured berries. It is quite hardy, and makes a pretty object in the rock garden in summer when thickly studded with small pure white flowers. It is grown as an ornamental pot plant in the

Victoria Nursery, Upper Holloway, and just at this season the berry-laden tufts are especially welcome. It is of simple culture; if grown in pots it requires the cool, moist atmosphere of a frame or house.

**ACHIMENES COCCINEA** AS A WINTER BLOOMER.—This useful plant, with its small, but brilliant scarlet blossoms, is now perhaps the best plant in bloom in the stove here. The corms were kept in a dry state for a considerable time longer than the other varieties, and when planted were grown under cooler treatment, with the result that after being placed in the stove late in the autumn they soon became a mass of bloom, and have continued so for a long time. Several pans and pots of them have made the stove wonderfully gay, and been the admiration of many visitors.—J. T. Poë, *Riverston*.

**LUCULIA GRATISSIMA.**—This beautiful and deliciously scented shrub is not so often grown in the form of small pot plants as it might be, though it would be difficult to conceive anything more valuable or charming at this season than well-flowered plants of it of a size that would admit of their being employed for room decoration. Such, however, we saw the other day in one of the cool greenhouses in Mr. B. S. Williams' nursery at Upper Holloway. These plants are in pots of various sizes, but none larger than 9 in., and each plant bears a profusion of blossoms which scent the whole house.

**VACCINIUM ERYTHRINUM.**—This is one of the few amongst the many species of *Vaccinium* in gardens that are worth cultivating. It is really a pretty plant well calculated to enliven this dull season. In Messrs. Cutbush's nursery, at Highgate, it forms just now a conspicuous object among the commoner kinds of greenhouse plants. It is a dwarf rigid shrub with numerous thick ovate leaves; each twig is terminated by a dense one-sided raceme of conical deep red blossoms. It is a plant which now-a-days one seldom meets with.

**THE NEW DOUBLE BOUVARDIA** (Alfred Neuner) is now a special object of interest in the Victoria Nursery, Upper Holloway, where it is better in flower than we have yet seen it, every branchlet being terminated by a cluster of pure white blossoms resembling tiny rosettes. Its floriferousness is a high quality apart from its chaste beauty, and it is evidently a "good doer," as gardeners say, for an ill-grown plant is not to be seen in the whole collection. It will certainly become a most profitable market plant.

**ERODIUM HYMENODES.**—This beautiful Heron's-bill has been by far the most persistent flowerer with us this season; it commenced blooming in June and is covered with blossoms now on the 4th December. This is all the more extraordinary from its delicate and unusual appearance, resembling as it does a delicate French white-spotted Pelargonium, but with tiny flowers of bluish pink with purple centres. It altogether resembles a Pelargonium, but is perfectly hardy.—BROCKHURST.

**NARCISSI IN DECEMBER.**—The very mild state of the weather has caused many spring bulbs to appear out of due season but the most marked instance I have observed is that of the *Narcissus odoratus plenus*, which now (Dec. 3) has bloom buds 2 in. high above ground. If we are to have such a winter as last year, there will be no hope for such precocious members of the *Narcissus* family. Snowdrop blooms also are visible in the borders.—J. T. Poë, *Riverston*.

**THE WEATHER** here has been unseasonably mild—spring-like, in fact. We have ripe Strawberries out-of-doors, Roses, Clove Carnations,

and double Primroses, and as I was pruning my Gooseberries the other day I was surprised to see several of the little rough red kinds showing fruit the same as in March or April; our trees are also quite in green leaf. The aspect of this place is south-east.—EDWARD STOCKWELL, *Swindon, Wilts*.

**FLOWERS IN DECEMBER.**—I have this day gathered the following flowers from the open ground, in which they have not had the least protection, viz., Roses—Gloire de Dijon, Homère, and alba rosea (Teas); Jules Margottin and Auguste Rigotard (H. P.'s); Violets—Czar, Neapolitan, and double dark Violet; *Myosotis dissitiflora*, Geraniums, Heliotropes, Verbenas, *Tritoma Uvaria*, Auriculas, Polyanthus, double and single Primroses, dark red and yellow Wall-flowers, Hydrangeas, scarlet Carnations, red and white Stocks, Helichrys, Cornflowers, Pyrethrums, Mignonette, Paris Daisies, Sweet Peas, Antirrhinums, *Dianthus chinensis*, also Laxton's Supreme Peas, but the late gales have blown them about very much, otherwise I should have been able to pick pods in abundance. The Violets (Czar and Neapolitan) and *Myosotis* are quite blue, as in spring.—RUPERT MILLER, *Southdown Nursery, Shoreham, Sussex*.

**PTERIS SCABERULA.**—This charming little New Zealand Fern certainly ought to be met with more frequently in private gardens than it is, as it is one of the best for cool greenhouses in which there is just a little artificial heat. In such houses it seems to revel, running its slender wiry stems out widely, and developing abundantly the elegantly cut fronds that more resemble some of the Hare's-foot Ferns than a *Pteris*. It is largely grown in Messrs. Cutbush's nursery, at Highgate, where it is much valued for cutting from. In this nursery, where all kinds of Ferns are grown extensively and well, we noticed two extremely elegant gold and silver Ferns (*Gymnogramma Wettenhalliana* and *decomposita*). The first, a variety of pulchella, has the fronds handsomely tasselled at the tips. It is of dwarf growth, and the fronds are copiously covered with a white mealy matter. *G. decomposita* is likewise an elegant species, the fronds being very finely cut and powdered with a golden mealy substance.

**THE CHINESE CHIRITA** (*C. sinensis*) is a very pretty plant, having the habit of growth of the stemless Gloxinias; the leaves are broad, deep green, and marked with broad silvery lines along the veins. From the base of the dense tuft of foliage the flower-stems are produced about 9 in. in height, bearing a loose cluster of numerous tubular blossoms of a delicate lilac purple. It is a charming plant for any light position in a warm moist stove, where it seems to thrive admirably. In the Melbourne Nursery, Anerley, we saw a quantity of healthy plants of it, several of which were in flower. It is one of Fortune's numerous introductions from China.

**MUHLENBECKIA COMPLEXA.**—We did not think this New Zealand Polygonaceous plant was hardy enough to weather the winter unprotected, but we saw it the other day in good condition in the Highgate Nursery, and we were assured that it remained out unprotected the preceding two winters. It is a most elegant plant with tiny roundish leaves on wiry branches, and is an excellent subject for planting in the rock garden, or in such a position as to fall over the ledge of a rock.

**HELLEBORES IN BLOOM.**—Nearly all my Hellebores are coming into bloom. I never remember them so early as they are this season; even colchicus, which is one of the latest, will be out if this weather continues much longer.—B. HOOKE, *Hillingdon*.



**JAPANESE QUINCE IN FLOWER.**—Enticed into expansion by the comparative warmth of the season, the blossoms of the favourite old *Cydonia japonica* enliven the shrubbery in several places about London, but we have not noticed the bloom so plentiful as on the sturdy young plants in Messrs. Cutbush's nursery at Highgate, where with some fine-flowering bushes of *Jasminum nudiflorum* it is very conspicuous.

**PITCAIRNIA FERRUGINEA.**—A noble specimen of this South American Bromeliad is flowering among the large succulent plants at Kew. The tall branching flower-spike arises from a huge tuft of leaves, and though the flowers are not very showy, the plant arrests the attention of the visitor on account of the noble port of the plant and the peculiar brown velvety substance that invests the blossoms.

**DRACÆNA GOLDIEI.**—This fine ornamental plant will shortly be in flower in the Melbourne Nursery, Anerley. We believe that it has not yet flowered in this country, and therefore considerable interest attaches to the circumstance, particularly as it is still an open question whether it is a true species of *Dracæna* or a member of some allied genus.

**ORANGE BUSHES IN POTS.**—We notice that the smaller fruited Oranges are now grown in Mr. Cutbush's nursery, Highgate, for decorative purposes, and well they are suited for it. The small golden fruits mixed with green unripe ones, and very often expanded blossoms as well, have a very pretty effect, and the delicious perfume of the flowers considerably enhances their value.

**ROYAL HORTICULTURAL SOCIETY.**—The following are the dates of the exhibitions and meetings of this society in 1882—Ordinary meetings: January 10, February 14, March 14 and 28, April 11 and 25, May 9 and 23, June 13 and 27, July 11 and 25, August 8 and 22, September 12, October 10, November 14, December 12; Great Summer Show, May 23, 24, and 25. The date of the Evening Fête is not yet fixed.

**GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—The Lord Mayor will, we understand, preside at the next anniversary dinner of this institution, which will be held at the Albion, Aldersgate Street, on June 29, 1882. His lordship will be supported by the Sheriffs of London and Middlesex and the Court of the Fruiterers' Company.

**WHITE CLOVE CAERNATION SUSAN ASKEY.**—Cultivators of Clove-scented Carnations would do well to procure this fine variety. It has large creamy-white blooms of good substance, highly scented; and some plants of it grown in a cool house have continued blooming for a considerable time, and been much liked by many friends.—J. T. Poë, *Riverston*.

**THE WEATHER AND ROSES.**—A rapidly growing shoot of Sultan of Zanzibar Rose comes from Hardwicke House, Bury St. Edmunds, with regrets from Mr. Fish that our "sham" summer weather should be likely to do so much harm to Roses in inducing tender growth at the wrong time.

**GALANTHUS ELWESI.**—This handsome bulbous plant, the finest of all the Snowdrops, is already in flower in Mr. Kingsmill's garden at Eastcott, Pinner, a circumstance no doubt attributable to the exceptional mildness of the season.

It is anticipated that the meeting of the Fruit and Floral Committees at South Kensington on Tuesday next will be a most interesting one. There will be a brisk competition for the prizes offered on this occasion by Messrs. James Carter and Co. for vegetables. Messrs. Carter intend themselves making a large display.

## THE INDOOR GARDEN.

### AGAVE DASYLIRIODES.

In the succulent house at Kew it is seldom one does not find at least one species of *Agave* in flower, and indeed the rich collection of these plants contains many species whose attractions reside as much in their habit and beautiful foliage as in their flowers. It would be difficult to explain the great reluctance there seems to be on the part of cultivators generally to get beyond the possession of more of these curious and in some cases grand types of vegetation than the old American *Aloe*. Any one who cares to spend a few minutes in the house just mentioned will see a great variety of forms amongst *Agaves*, ranging from the graceful little *A. geminiflora* or the *Lachenalia*-like *A. virginica* to the gigantic *A. Hookeri*, *A. kewensis*, and *A. americana*. Yet the last mentioned is the only one that is cultivated to any extent, whilst many others with greater claims to favour are still comparatively unknown.

*A. dasylirioides* is perhaps one of the most beautiful. Its foliage is narrow and sword-shaped, the whole plant bearing a close resemblance to that of some *Yuccas*. But it is the beautiful silvery appearance of this species that is so very effective in the group amongst which it stands at Kew. Another character to recommend this species is the frequency with which its flowers are produced instead of flowering once and then dying, as so many species do. The spike borne by the plant at Kew is long and drooping, and is clothed half its length with bell-shaped flowers, the whole of which remain on the spike until all have opened.

*Agaves* are, with very few exceptions, so very easily cultivated, that any one with a shed to which a little light could be admitted during winter, and from which the frost could be excluded, could succeed with them, as during the summer they might be set out-of-doors, where, if tastefully placed on lawns or amongst dwarf growing shrubs, they would add considerably to the beauty of the whole.

### AUTUMN TREATMENT OF CYCLAMENS.

DURING the summer it is absolutely necessary to screen young growing *Cyclamens* from the sun during the hottest portion of the day, but after the middle of September, unless the season is exceptionally fine, they should be exposed to its full influence. Sun and air, plenty of both, are required during the autumn months to impart substance to the foliage and strength to the bloom buds, which in the case of plants that have been started early into growth, should, at that period of the year, be forming rapidly. Green-fly, the one great enemy to the *Cyclamen*, will not be so likely to injure plants which have been hardened by full exposure to light and air, and it will also be found that such plants will better respond to gentle forcing than those that have been grown in a more confined atmosphere, or have been more or less densely shaded throughout the early autumn months.

Crippled or small flowers are often the result of too much coddling in the growing season, but I should observe that the best of specimens may easily be ruined by the application of too much heat in early winter. I have remarked that many appear to think that the *Cyclamen* should be hard driven during November and December, keeping their plants in a temperature of from 60° to 65°. These figures would not be too much if air were freely admitted every day, but when, as is often the case, the plants are placed on shelves in an early vinery or stove, the confined moist atmosphere not only causes the foliage to draw, thereby depriving this naturally neat, compact-habited flowering subject of one of its characteristic features, but the flowers too come weak, spindly, and deformed. The *Cyclamen* must have gentle treatment; it may be coaxed, but will not submit to forcing; therefore when the plants are housed in October—the latter end of the month is soon enough—let them have a light position, with a free circulation of air, avoiding draughts, on fine

days, maintaining the temperature at 55° to 60° by day, letting it drop to 50° or even a little lower at night.

Plants from seed sown early in the previous autumn and grown along briskly in spring will, by the latter end of September, be throwing up their first blooms above the foliage. Treated in the manner above indicated, they will be carrying quite a score of good flowers by Christmas: subjected to a hurrying temperature, they will by that time be simply ruined. During September and the early part of October we make a practice of fully exposing the plants at night when the weather is still and warm, for we know that nothing invigorates them so much as this dewy bath: and if the lights are pushed on before the sun reaches them, its invigorating influence is prolonged far into the day. We also like to throw them open during a period of rainy weather, for as soon as the roots touch the sides of the pots and the leaves cover the surface soil, a good soaking, twenty-four hours' rain will do them good, plumping up the buds, filling out the foliage, and thoroughly cleansing it.

J. CORNHILL.

### Balsams from home-saved seed.

Allow me to add my testimony in favour of home-saved Balsam seed over Continental strains. This spring we had a packet of home-saved seed which was sown in pots and placed near the glass in a frame with but little artificial heat. When up and large enough, the young plants were potted off singly, and when well rooted shifted into 8½-in. pots, using a compost consisting of equal parts loam and old Mushroom-bed manure, and potting rather lightly. As soon as they had got hold of the soil they were set in the open air, and well supplied with water, and when coming into flower they were transferred to a pit. By this mode of treatment we obtained strong stocky plants; the colours were good, and the flowers truly *Camellia*-like, being as double as any one could desire—far superior to any I ever saw produced from Continental seed.—GEO. POTTS, JUN., *Hookfield Grove, Epsom*.

**Wormia Burbidgei.**—This is likely to prove a valuable addition to plants remarkable for the size and noble appearance of their foliage, such as the *Coccolobas*, *Pentagonias*, *Theophrastas*, &c., plants which, whether grown as ornaments in a stove, or for placing out-of-doors in summer—a use to which they are put in Battersea Park, deservedly stand in the foremost rank. At Kew there are several fine specimens of the *Wormia* in one of the stoves, and as the plant is of but recent introduction, I would direct the attention of those in search of fine foliaged plants to its merits in this respect. Besides, however, its claims as a fine-foliaged plant, its flowers are handsome, and are freely produced by young plants. These flowers are about 4 in. across, beautifully crisped, and bright yellow in colour. They are produced in pendent racemes from the axils of the leaves.—B.

**Winter-flowering Begonias.**—Permit me to observe that my object (p. 455) was not so much to give a list of desirable kinds of *Begonias* as to direct attention to them as valuable winter blooming plants. The four varieties named by me are, however, good for winter bloom if well grown. In "S.D.'s" list (p. 515) no mention is made of *fuchsoides*, perhaps the most graceful of the genus, especially when trained to the rafters of a warm house. Liberally treated, it will bloom all the winter. There is also *Dregel*, a kind having a compact, neat habit, and one of the most useful plants that we possess for the decoration of vases and jardinières at this time of the year. The flowers are small, but so numerously produced as to render this kind very effective.—J. CORNHILL.

**The best Chrysanthemums.**—Will some authority name twelve of the best habit and most distinct colours of the following sorts of *Chrysanthemums* for general purposes?

12 Pompones	12 Japanese
12 incurved	12 flat-flowered

12 summer varieties. E. W.

**Chrysanthemum La Petite Marie** (p. 54).—We understand this is not yet "sent out," but will be in spring.



## LILIES OF THE VALLEY.

OF all the plants that have hitherto been submitted to the gentle art of forcing, none perhaps are more grateful for it, none more graceful, than this old inhabitant of our gardens. Long before men knew how to force plants under glass, or had a pane of glass to put them under, it was a famous plant, loved of those who sought it in its native wilds, and those who grew it in gardens. Every garden used to grow it, and ought to have it now, though in gardens it was a common thing to see it very badly grown in some odd corner, owing partly to the free, hardy habit of the plant itself. Utterly unlike our old friend the Fraxinella, which may remain in the same spot for a lifetime, it spreads about so freely that it soon forms a dense "mat;" as the habit often was to leave it in mats and beds, it became attenuated and poor as regards the flower, so that it was rather exceptional to see in gardens a good bloom of the Lily of the Valley. In Nature, in the hill woods it often fared a little better, inasmuch as there the struggle for life prevented it living on itself, so to say. The "mat" of plants was not so dense as in the garden bed, where there was nothing to interfere with it, and often a few plants grew alone, as it were, and flowered well. Not very many years ago the forcing of the plant began to be popular, and this gradually led to a better culture and higher appreciation of our old friend. Plants grown in the matted manner before spoken of, although they flowered when put in pots or boxes in a warm house or frame, never produced a good result; they were starved and weak from overcrowding. Soon it was found out that plants specially prepared for this purpose, or, in other words, well and firmly grown, forced beautifully and gave fine and numerous blooms. The simple fact was that these plants had been fairly well, so that the little buds were enabled to fill up, each with a flower in its heart. A very considerable trade was done with the Continent for years, and is done still, in the preparation and growth of the Lily of the Valley for forcing. The despised and too vigorous little plant got, in fact, a chance, with a result greatly to the ad-

vantage of the foreign growers. No doubt, as in many similar cases, this was put down to the climate; but there is nothing at all in that. The same thing is now being done by our own growers. Some of the best of the forcing gardeners that we know used to grow excellent Lilies of the

the open air. It has come about that we shall be able to enjoy more and more, and know how to grow better the Lily of the Valley by reason of its vicissitudes in the forcing house. Among the growers who bring Lilies of the Valley to the London flower market, where it is sold in great

quantity, the most successful is Mr. Hawkins, of Twickenham, a man who combines a rare sympathy with flowers with the knack of growing them charmingly. He brought us the bunch of beautiful Lilies, from which we culled a few sprays for the annexed engraving, drawn exactly life-size, and which tells its own story. We wish, however, that all our readers could see one of these handsome bunches. Mr. Hawkins calls the variety which he grows "Victoria," but we fancy there is not so much in that as in his superior cultivation. But that there are different varieties of the Lily of the Valley is now a recognised fact. The sooner we know all about these and pick out the best from among them the better. They differ much in the length of the raceme. The greatest charm would be if they were found to differ in the period of blooming, so as to prolong the outdoor season of this flower. We hope Mr. Hawkins will some day tell us in his own words his mode of growing the Lilies for the London market at various seasons of the year.



Lily of the Valley (life-size). (From plants grown by Mr. Hawkins, of Twickenham.)

Valley by carefully attending to the forced plants after they had passed out of bloom, and, as we stated last week, at least one grower actively engaged in the production of Lily of the Valley for the home market. Obviously, the system which enables growers to get good plants for forcing will enable us to get good plants for blooming in

heat of a vinery just put to work. Syringas, Guelder Roses, Deutzias, Lilacs, and hardy Azaleas may be helped forward by being plunged deeply in a bed of fresh gathered leaves, where, feeling the slight warmth they afford, roots are set in motion, and the buds swell up by steady degrees, and produce much finer bloom than is generally

**The common Syringa forced.**--If plants of this are taken up very early, that is, immediately after the leaves fall, they will be found to force well, as then they have time to get root hold, but by far the best way of managing them is to keep them in pots plunged during the summer, as when they are established, they are the more able to push forth and open their blooms. Syringas will not stand hard forcing, but should be brought on gradually by standing the plants in any cool house or pot for protection till the turn of the year, when they may be introduced to the gentle



seen without such assistance. Why Syringas are not more grown, I think, for forcing is that the scent of the flowers is too strong for most people, but one or two plants in a greenhouse or conservatory are not overpowering in the perfume they exhale.—J. SHEPPARD.

#### SHOW AND OTHER CHRYSANTHEMUMS.

As an exhibition plant the Chrysanthemum in all its forms stands unrivalled in dreary, dark November. During the last decade the numbers and importance of exhibitions have very much increased, and the interests of horticulture have been greatly advanced by them. In districts where Chrysanthemum exhibitions are held, the flowers are grown to greater perfection than they are in places where there is no such stimulus. At the same time it must be admitted that there is some danger of too exclusively studying the flowers from an exhibition point of view, to the neglect of those capable of being useful indoors at home. Certain it is that the plants most favoured at exhibitions are not those best adapted for decorative purposes. I have seen Chrysanthemums at many exhibitions this year and in widely separated districts, and the style of plants most favoured are formally trained specimens, whether they are Japanese, or the more prim incurved flowers, or the little Chusan Daisies. All are made to assume the form of pyramids or standards with round heads, and the flowers closely tied in, or dumpy specimens, the growths of which are also closely tied down and the flowers spread over the surface. Of late years, however, more latitude has been allowed exhibitors than there used to be. At most of the exhibitions prizes are offered for groups of plants arranged for effect; but how do the exhibitors take advantage of this? They either exhibit a certain number of the usual formally trained specimens or a quantity of plants that have been grown to one or two stems to produce a few large flowers for exhibition. These are crowded together to produce a level surface, sloping from the back to the front, without any attempt at artistic arrangement—if such were possible with the material available. I would not recommend too much alteration in exhibitions at once, but if prizes could be offered for a certain number of plants grown naturally, without any training or tying, except so much as would be required to keep the shoots in their proper position. In this case there need be no limit to size, but it would be well to stipulate that the plants should be grown with single stems. Then the Japanese section should be developed into specimens, a purpose for which a considerable proportion of them are well adapted, and managers of the principal exhibitions should arrange their schedules so that both plants and flowers of the Japanese varieties may be exhibited by themselves or mixed with the large flowered section.

I think upon the whole the best exhibition of Chrysanthemums I have seen this year was that held in the Victoria Skating Rink, at Southampton; I do not mean by this that the cut flowers or plants either were better than those seen at some of the best exhibitions near London, because they were not. The superiority of the Southampton exhibition consisted in the greater variety observable among the cut flowers, plants, fruits, and vegetables shown. There was ample opportunity for plant growers to show their skill in cultivating the various sections of the Chrysanthemum family, but besides this a series of prizes were offered in two sections for groups of plants arranged for effect; and here the Chrysanthemum could be exhibited as it ought to be, amongst other plants. One exhibitor, who gained a first prize, had a very fine plant of the old, but seldom seen, *Epidendrum purum*, bearing over twenty very fine spikes, and altogether a novel feature in such an exhibition. The peculiarly fringed labellum is pure white and divided into two parts. Ferns and other seasonable plants in flower served to complete the group. There were six or eight of such groups, and no doubt the same number of exhibitors would come forward at other exhibitions if they had the chance. Prizes were also awarded for a group of Orchids,

and a charming selection of them was arranged on a table at one end of the room. Thirty-six plants were sent by Mr. H. J. Buchan, Wilton House, amongst them being conspicuous a plant of *Zygopetalum Mackayi*, with five strong spikes; the perfume of its flowers pervaded the room, and its large flowers were very showy. There were also four good plants of *Oncidium tigrinum*, the flowers of which, though not very striking, were agreeably scented. It is not worth while to describe the other Orchids, many more of which could be exhibited; and their introduction to a show at this season would add very greatly to its attractions.

The arrangement and growing of the plants should be left in the hands of some one who knows something of the business, and exhibitors should be required to fulfil their engagements. If they undertake to fill a given space, it is not fair that they should withdraw at the last moment and thus embarrass the manager. One of the best arranged exhibitions this year was that at Tunbridge Wells, under the management of Mr. John Charleton. On this occasion he had good material to work with, but it was made the most of. There were groups of admirably grown Chinese Primulas and *Poinsettia pulcherrima*, table plants and *Celosias* for the centres of long tables, with other plants in season, and very fine groups of Chrysanthemums all round the room. Managers must go in more and more for artistic arrangement, and flowering plants of other things in season besides Chrysanthemums must also be included to still further promote and sustain the interest already felt in such exhibitions. J. DOUGLAS.

#### NEW CHRYSANTHEMUMS.

EVERY year we have large numbers of Chrysanthemums sent to us from the Continent as new varieties, most of which, except in the case of the Japanese kinds, are in no way an advance on existing varieties; but the Japanese section has received many notable additions of late years, especially from the French growers. Having flowered many of the sorts sent out for the first time this season, a few words concerning them may, therefore, be interesting. *Agréments de la Nature* is a very full flower, the petals being long and slender, of a bright yellow colour, sometimes marked with crimson. *Alphonse XII.* is large, but too regular in outline, and the colour (chestnut-red) is at the best but dull. *Belle Gabrielle*, a rose-coloured flower, is not equal to *Duchesse de Gerolstein*; in colour the latter is rather lighter, but it is larger, bolder, and less regular than the preceding. *Etoile du Midi* is a good variety with showy bright crimson flowers, shaded towards the centre with orange, the outer petals drooping gracefully; the plant is of a medium habit of growth. *Elegance* is violet in colour, but not equal to the now well-known *Rosa Bonheur*, which for pot culture has few equals, its habit being good and the colour pleasing. *Flambeau* is a variety that should become a universal favourite. The flowers are large, and composed of broad, reflexed petals of a dark velvety crimson, resembling in colour that well-known kind, *Julie Lagravère*, except that the reverse side of the petals is yellow. The plant is of medium habit of growth, and, in my opinion, this is the best Chrysanthemum of the season.

Illustration is a broad-petaled flower, of a dull crimson colour, shaded with yellow, but in no way striking. *M. Bousquet*, dull yellowish salmon, is small, and of no particular merit. *M. Castel* resembles *Garnet* in form, but instead of being wholly blood-red, as that is, the bases of the petals are yellow, and the whole flower is more or less shaded with that colour. This appears to be an unusually dwarf-growing variety. *M. Eugène Pourquie* has long narrow petals, often turned and forked at the points, and of a bright crimson colour, shaded with yellow. It is distinct and effective, owing to the irregular arrangement of the petals. *M. Juan Cruz d'Eguileor*, though long in name, is a first-class kind of the Red Dragon type, but much brighter in colour; in fact, except To-

Kio, it is the brightest with which I am acquainted; the colour of both is an intensely bright crimson, but on close comparison To-Kio is still the best. *Riche Bouquet* is a light pink flower in no way superior to many others, but being one of the shortest of the Japanese section, it may be useful for some purposes. *Rubrum striatum* has very large flowers, with unusually broad petals, pale yellow in colour, striped and flaked with violet-crimson; a very distinct kind. *Souvenir de la Reine Marie*, a light pink flower, possesses no very distinctive features. *Striatum perfectum* in shape and size resembles the well-known *Striatum*, but the colour is pure white, irregularly striped and flaked with violet; the unusual marking of this flower gives it a distinct appearance. *Triomphe de St. Martin* is a large loose flower of a light rose colour, distinct from, but not equal to, many others already in cultivation.

The whole of the above belong to the Japanese class, and of them I would recommend six varieties as well worthy of a place in any collection, viz.: *Duchesse de Gerolstein*, *Etoile du Midi*, *Flambeau*, *M. Eugène Pourquie*, *M. Juan Cruz d'Eguileor*, and *Striatum perfectum*. Mention may also be made of some four kinds which, although not new, are of great merit, and but seldom seen. The first is *To-Kio*, sent out two or three years since, and up to the present unequalled for brightness of hue among the whole of the Chrysanthemums. *Marguerite Monarch*, a large flower of a peculiar bright bronzy crimson colour, tipped with yellow, is a remarkably conspicuous variety. *Madame Rieux*, intermediate in size between the incurved and *Pompon* varieties, is a pretty and distinct flower, very useful for cutting purposes. The colour is a soft pink, and the petals, which are partially incurved, are fringed like those of *Laciniatum*. The last is *Marie Crozat*, a crimson-purple *Pompon* tipped with white, and very distinct from any of the others; the habit of the plant is also good. H. P.

**Forcing Spiræas.**—In a general way these are forced too rapidly to produce sturdy, short stems and fine heads of bloom. The way in which I have always found them to do best is plunging them in a pit or frame where they can get only a slight heat from gently fermenting leaves, which keeps their roots actively at work, and assists in gradually swelling up and developing the crowns. Even a cold frame kept shut up and close is a great help to *Spiræas* and similar plants which, though they may be ever so hardy, require some kind of protection, as in pots they are very differently circumstanced from what they are when growing with their roots deep down in a border. If they cannot be accommodated in a pit or frame, they should be plunged and partly covered over with some non-conducting material, such as Cocoa-nut fibre or half rotten leaves, in some dry, sheltered spot under a wall, where they can be drawn from for forcing when wanted. As they do not require light when first started, they may with advantage be placed among other plants on the greenhouse shelf, or even underneath it, if placed so as not to catch too much of the drip after watering. Here we find the Mushroom house very useful, and we generally forward our *Spiræas*, *Lily of the Valley*, and other things of that class a stage by putting them in there on the floor, or in some of the bins on fermenting manure. Starting them gradually in this way is much better than hard forcing, as it always leads to more satisfactory results.—S. D.

**Lapageria rosea.**—Considerable difference of opinion has been expressed as to whether this charming climber should be grown in shade or sunlight, and results of success on both systems have been brought forward. May I, as an outsider, suggest that, perhaps like the Grape Vine, it is very accommodating, and will succeed under a variety of systems? I sometimes hear theories of Grape growing propounded and their success illustrated, but I come across another grower, who says to me, Come and see my Grapes, grown on precisely an opposite principle and yet succeeding. I am induced to think that it is the same with the *Lapageria*.











Let me give my little experience. I have a small greenhouse, well exposed to the sun, and I was ambitious enough to attempt this year to grow a *Lapageria*. Mr. Howard, of Southgate, sent me one of his plants; it was in a 10-in. pot and had two growths. I placed this on a shelf at the end of my house. It sent up a shoot which ran about 12 ft. in length, and this I trained as it grew up to the roof along some wire netting fixed to the rafters. Already I have had upwards of thirty large sized flowers on the plant. About half way on the young growth there are in a space of 18 in. as many blossoms hanging in twos and threes from each axil, and I see a good many more coming; now the only shade this has had has been from the glass being whitened, and if this is the result in a small way from a plant in a pot, what might we not expect in a place well suited for them and planted out? As this splendid creeper is now to be had at so reasonable a rate, and is evidently of easy culture, we may expect to see it very largely grown? In the milder portions of our islands it does well out-of-doors against a wall. *L. alba* does not seem to be so vigorous a grower, but is amenable to the same culture, and its lovely purity of colour makes it a most desirable plant.—DELTA.

**Chrysanthemums from seed.**—Allow me to say that *Chrysanthemum* seed has been saved in Guernsey for many years past, and that thousands of seedlings are raised there. The majority of the varieties brought out by the late Mr. John Salter were purchased by him from the Guernsey raisers. The raising of new Japanese varieties has been taken up by Major Carey with great success. I would be glad to see a list of the varieties actually raised and brought out by the late Mr. J. Salter from seeds saved in Algiers. Several of the Pompon varieties now in the catalogues were sent from Jersey to Mr. A. Forsyth and other London growers, some of them being of French origin; amongst those sent I can call to mind *Lilac Gem*, *Model of Perfection*, *Dick Turpin*, *Marguerite de Coie*, *Souvenir de Jersey*, and *Crimson Perfection*; whilst our old friend *Bob*, if I mistake not, was the first good seedling raised by Mr. C. Smith, of the Caledonia Nurseries, Guernsey.—B.

**Chrysanthemum Societies' Rules.**—As a reader of THE GARDEN, I take the liberty of applying for information which I cannot otherwise obtain. I have been a lover always, a grower for many years, and for the latter two or three an exhibitor of *Chrysanthemums*. I have imported plants from both the leading English and Continental growers, but I am sorry to find that many of my plants are evidently wrongly named; even the better catalogues do not agree as they should do in descriptions of standard varieties. Are there any catalogues or manuals that possess any thing of authority upon this subject? How can I obtain the rules of the various *Chrysanthemum* societies, or of the best of them?—F. & P. WALCOT, *Cambridge, Mass.* [If secretaries of *Chrysanthemum* Societies will kindly forward us their rules, we shall have much pleasure in forwarding them to our correspondent.]

**Propagating *Trichinium Manglesi*.**—Several notices of this interesting plant have appeared lately, but in none of them do I remember to have seen anything relating to its propagation, which is generally considered to be very difficult, and so it is in any other way but by means of the roots. The latter if cut up and placed in sharp sandy soil under a bell or hand-glass soon make nice little plants. The best time to separate and divide the roots is early in spring, as then they quickly break and push out young shoots. Some years ago I tried this *Trichinium* out in the open border, but after passing safely through one winter under the shelter of a slightly tilted bell-glass, it succumbed to the severe frost of the next year.—S. D.

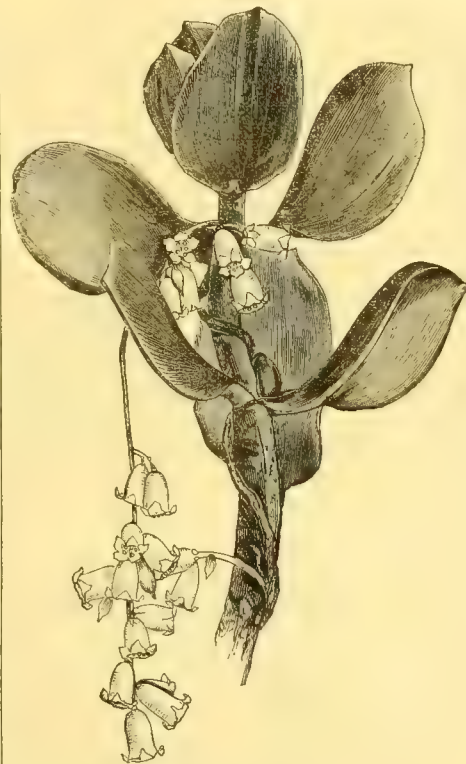
**Cineraria leaves curling.**—I have a very good *Cineraria*, the leaves of which curl up and droop. Thinking that the pot—a 6-in. one—was too small, I shifted it into a 9-in. pot about three weeks ago, and in doing this I saw quantities of small

white worms round the roots. Thinking these were the cause of the leaves curling, I watered with very strong soot water, but it made no difference as regards the curling. The plant is coming into flower, but the buds now do not make much progress. I shall be glad of any advice as to how to treat the plant, which I should be sorry to lose.—J. H.

**Propagation of *Asparagus plumosus*.**—This I find strikes freely from cuttings. About five weeks ago I put in some of the young fronds, not the thick stems, but quite small pieces from the ends of the branches, and now these are struck and pushing up young shoots. This is satisfactory in the case of so valuable a plant as this *Asparagus* is, especially as several of my friends who are anxious for a stock of it are waiting until they may divide their plants under the belief that it cannot be increased otherwise, except, of course, by seed.—B.

### BELL-FLOWERED DODDER.

*CUSCUTA REFLEXA*, an elegant plant, comes to us from the College Gardens at Dublin, growing on a *Crassula*. It is a true parasite, living



Dodder (*Cuscuta reflexa*) parasitical on *Crassula*.

wholly on other plants, being pretty omnivorous in its tastes, and "cutting into" the plants on which it lives pretty severely! However, a few common *Geraniums* or pots of *Irish Ivy* are well worth growing and sacrificing for it, as nothing can be more elegant than the little strings of silver pearl-like bells which are scattered over its hair-like strings in winter. It would be well worth while finding out the plant on which it grew and flowered best, and to grow a batch of it for winter. We believe it would thrive well in the window of a dwelling-house, at least during the winter months. A number of plants could be grown on a batch of *Irish Ivy* in pots and then transferred to the house in autumn. We have grown it freely in an intermediate house and in a dry greenhouse. Placed out of doors in summer, it runs over *Willows* freely. We have not noticed it flower so freely as in winter when in the house. The plant has been about our Botanic Gardens for a long time, but

it has not often been taken up by private growers. It is delicately fragrant, and the flowers slightly resemble those of the *Lily of the Valley*, though somewhat longer and narrower in proportion.

## THE ROSE GARDEN.

### TEA ROSES IN POTS.

THE growth which young vigorous Tea scented Roses make in the genial Madeira-like climate of a lightsome, well-ventilated glass structure must surprise all who are not aware of their nature and habits; but to grow Tea Roses well in pots requires considerable skill and experience, and as it must be conceded by all lovers of the queen of flowers that Roses never look so fresh and lovely as when hanging from the tiny branch that gave them birth, and that it is in this form that they add the chief feature and charm to the Rose show, it may not be out of place to offer some remarks concerning their cultivation in pots. In the first instance young trade grafted plants in 4-in. pots should be procured of the leading sorts and colours; these should be purchased in the months of April, May, and June, and turned out of the pots when got home, the balls being reduced and planted out in the Rose border, great care being taken that the raffia tying the grafts be not cut or broken. The little plants should be planted so that the point of union of stock and Rose is about 2 in. below the surface, as in nine cases out of ten if properly managed the Rose will root from the heel of the graft and be then on its own roots—a great matter in pot Roses, the raffia tying rotting gradually and bursting finally when the stem swells. Soon after the young Rose tree will send up from one to three or four vigorous shoots, and these when about 1½ ft. to 3 ft. in length should be bent or arched point downwards and stopped; they will then break nicely, and when ripened, the original grafted stem should be cut away, and the new growth staked as upright as possible. These Roses will flower well if well fed in the summer.

**LIFTING AND POTTING.**—Now comes the next operation. In November they should be lifted, and according to the size of the roots they have made, potted in say from 8-in. to 10-in. pots, but there ought not, if possible, to be more than from 1 in. to 2 in. to spare round the side. As mentioned subsequently, for the sooner the roots touch the sides of the pots the better, and remember that if the plant will not sit nicely in the centre, the long tap roots should be cut until it can, taking care not to injure the fibrous roots. Place the pot on a bench, and having placed the plant as before stated, and secured a vacancy of 1 in. to 1½ in. between the ball as raised and side of pot, and placing the Rose fairly in the middle, the loam should be tumbled in all round, and, having armed yourself with a flat-headed stick, ram down the earth all round as hard as asphalt, then in with more and ram down as before until the pot is full; then stake firmly and label and soak with rain water copiously. Keep the lifted plants in the shade for a few days, and water *ad libitum* for a fortnight. Young fibres will soon begin to push their way into the compost and reach the sides of the pots. The potting compost must be full of nourishment and sweet and not likely to sour. If any way procurable, it ought to be composed of the reddish yellow fibrous loam found attached to heather sods, full of fibre and rich; if such can be got, do not trouble yourself about manure, bones or anything else, as it contains ample nutriment. If not, get the top spit of maiden pasture land, a little well-rotted manure, leaf-mould, and silver sand, which will



do, and do not forget to make ample preparations for drainage; cut off all withered branches and worthless old wood, so as to give air, and level the surface nicely.

**FREDDING AND TRAINING.**—Now, remember that when the Roses were in the borders they could in a measure look out for themselves, so to speak, but now you have to feed them; they have to depend entirely upon your care, for their delicate fibres are surrounded by a brick fortress. Yet be cautious lest you give manure water too strong and sour the earth; rather let it be given often and weak, like good pale ale, and I would not by any means counsel guano water, unless when the plants are just coming into bloom before an exhibition. Always keep the pots standing on slates or planks to guard against entry of worms and roots growing from the bottom. Next the by no means unimportant question of training and staking will have to be considered. As far as possible let the plants preserve a natural and graceful habit; training them too much like Azaleas or stove plants is out of all true taste, but it should be remembered that the shoots should, if possible, be kept rather horizontal, as they will then break freely and consequently flower better. The too floriferous kinds should also be disbudded, as it weakens a plant to bear a more than due proportion of bloom.

**TEMPERATURE.**—As regards heat, all oil lamps, &c., are nothing less than an abomination; neither flame nor fire in any shape should under any circumstances be brought inside the house, but a well regulated service of 4-in. pipes may be of service. After all if the situation is south or south-east, it will be found in the end more satisfactory to dispense with all artificial heat; of course this does not apply to the case of market gardeners or preparing them for the early shows. Few Roses force well as regards purity of bloom; however, there are exceptions, such as Niphetos, Madame Falcot, and perhaps Maréchal Niel. In cases of heat being used a northern aspect for a Rose house is best, as the Roses get rest in summer. Such Tea Roses as Catherine Mermet and Souvenir d'un Ami lose the exquisite tints of colour and general character of bloom if violently forced, and it produces no end of scourges in the shape of vermin and injury to the constitution of the plants. Remember that Roses need rest, and anything in the way of driving Nature cannot command success. If heat be used the temperature must be gauged by the state of the weather; 45° or 50° at night, and say 60° by day will be amply sufficient. The sun will produce in a cold or unheated house, if due south or south-east, 60° to 70° by day in winter, and in summer far more, but this does little or no injury compared with fire-heat, as there is pure air in the case of solar influence. An investigation daily of the plants themselves is, after all, the best test, and a short experience will educate the eye as to whether the temperature is too hot or too cold.

**MILDEW.**—Remember great variations of climate produce to a certainty that pest mildew. If it occurs, I can, from experience with hundreds of Tea Roses, confidently advise the following application as being invariably efficacious: Place  $\frac{1}{2}$  lb. flowers of sulphur and  $\frac{1}{2}$  lb. slaked lime in a vessel (an iron or earthen one), with six pints of water; boil the compound gradually, and when cold, strain it, and bottle the fluid, and keep it in a dark place; any chemist will make it for you. Take  $\frac{1}{2}$  pint of the liquor and mix it in from 10 to 12 gallons of rain water, and to it add  $\frac{1}{2}$  lb. dissolved soft-soap; mix all up together with a stick or pole, then bring your pot Roses out of the Rose house, place them on the walk or Grass, and syringe on back, sides, and front, move them in again and leave the

liquid on for forty-eight hours or more: it will look like milk. Repeat the operation two or three times and it will cure the worst cases without any injury. If the blooms seem to come to maturity in advance of a coming exhibition, get some old hoops from a worn-out barrel, cut them and place them in a semi-circle across the Rose trees, cover over with calico canvas, &c., and syringe this roofing daily, keeping it wet; this will keep the blooms from opening. In conclusion, if you want Roses in perfection, have your Rose house unheated, depending wholly on the shelter of the glass and the heat of the sun. If it has a southern aspect, you can also grow white Camellias, and on the roof Lapageria alba and rosea, tender Clematisses, &c., while on any convenient shelf will flourish Liliun auratum and longiflorum, Amaryllis Belladonna, Schizostylis coccinea, Babianas, &c., as well as Zinnias, Sparaxis, Hyacinths, and similar plants.

Donnybrook.

GEO. CHAS. GARNETT.

## GARDEN IN THE HOUSE.

**Simple floral decoration.**—I heard the other day of a gardener who was so anxious to exhibit all his floral treasures that even at this season, "with dark December's bareness everywhere," he managed to fill upwards of 50 flower glasses (they must have been very small) on his master's dinner table. His arrangement was doubtless somewhat confusing. You may have too much of a good thing. As this is a dull time of the year, and there is little variety in flowers, many of the vases must have been alike; besides, eating is the affair of most consequence when you sit down to dinner, and it is absurd to have the table overloaded with pretty ornaments. I have before my eyes a lovely old china bowl; it is fringed with Maiden-hair and other small and delicate Ferns; resting on these are a few Primulas, white and lilac, supported by their own leaves, sprays of crimson Fuchsia, and Tradescantia hanging down over the edge of the bowl, while the middle is filled up with yellow Roses, a bloom of Eucharis with its pointed leaf, three or four Christmas Rose, a little Heliotrope, and some bits of scarlet Geranium, despised in summer, but prized now when we need brightness. This bowl is a "thing of beauty."—HORTULANUS.

**Coloured leaves and berries.**—At the Bristol Chrysanthemum Show the other day I was very favourably impressed with the beautiful display of baskets and vases filled with hardy foliage and berries. To my thinking the class for these was one of the best features in a generally excellent exhibition, and must have had a good effect on those of us whose province it is to decorate the dining tables and rooms of the wealthy, as well as in suggesting to those without the resources of the wealthier classes the means of beautifying their rooms free of expense. I have seen competitions with vases and baskets of choice flowers at various metropolitan and provincial shows, but in no one instance have I noted any I should prefer to those filled as above mentioned. Beautiful as the latter were by daylight, they were still more so by gaslight, and what is of great importance, they are not easily injured by the fumes of the gas. Of foliage the most effective were branches of richly variegated Hollies and Berberis vulgaris foliis purpureis, highly coloured leaves of Berberis Aquifolium, Ivies, Virginian Creepers (Ampelopsis Veichi and hederacea), Hazel, Beet, Carrot, &c.; and of berries, branches of such as Barberries (Berberis vulgaris), Hawthorns, including the Pyracantha, Snowberry (Symphoricarpos racemosus), Dogwood (Cornus sanguinea), Common Yew, Privet, Christmas Cherries (Physalis Alkekengi), Rose hips, and the Bitter Sweet (Solanum Dulcamara). The latter, however, ought not to be included, as it is one of the poisonous Nightshades, and the beautiful bunches of scarlet berries have a very tempting appearance. With the above Grasses were freely used, the whole

presenting a charming appearance not easily forgotten.—FROME.

**Fern fronds.**—Will any reader of THE GARDEN who has had experience say what is the best mode of preserving these, so as to retain their colour?—J. M.

## THE GARDEN FLORA.

### PLATE CCCXIV.—HUMBOLDT'S LILY.

(LILIUM HUMBOLDTI.)

THE beautiful Panther Lily was, it will be remembered, recently illustrated in THE GARDEN, and now we give another Californian Lily equally handsome and quite distinct from it, though at first sight it may appear somewhat similar. It is one of the most graceful of all Lilies in growth; the singular beauty of the blossoms, and the elegant manner in which they droop from their slender stalks, combine to render it a most desirable plant, and, what is more, its flowers, on account of their great substance, are more lasting than those of any other Californian Lily. It differs from Liliun pardalinum in many important particulars. The bulbs, instead of being rhizomatous, are ovoid, and have the thick im-



Liliun Humboldtii, showing habit of growth.

bricated scales of a purplish tinge. They are from 2 in. to 4 in., and sometimes 6 in. in diameter, and as much as a pound in weight. Though generally globose, the bulb is sometimes elongated like that of L. Washingtonianum, and it is most variable in this respect. The stems are stout, purplish, and attain a height of from 4 ft. to 8 ft. The leaves are in whorls of from 10 to 20 each, and of a bright green. The flowers are few or many, and differ considerably with respect to colour and markings. What is considered the type is represented by the four expanded blossoms seen in the annexed illustration; the other dark flower is the form found on the island of Santa Rosa, opposite Santa Barbara, and was called by Kellogg L. Bloomerianum ocellatum. Besides differing in colour, the leaves are a brighter green, more pointed, and the habit of growth dwarfer and more dense than that of Humboldtii. The typical form is found in dry, open localities in the foothills of the Sierra Nevada, at from 2500 ft. to 3500 ft. elevation, and southward to San Diego County.

**CULTURE.**—Though quite hardy in this country, this Lily is somewhat fastidious in the matter of cultural treatment. Sometimes it thrives admirably under conditions that have accidentally suited its requirements, while at other times it fails under the most careful management. It requires more time to establish itself than most Lilies, and the bulbs do not generally develop strong flowering stems till after two or three seasons; therefore patience is required to allow



them to become established. With regard to the most suitable soil and position for this Lily, perhaps the best advice might be gleaned from the following note on the condition in which it naturally grows. In his notes on Californian Lilies, Dr. Bolander, of San Francisco, says, "The soil in which the bulbs are found is of a rather compact character, consisting of clay with an admixture of broken rocks, and a small portion of vegetable mould. It grows in open park land, or land entirely cleared, and therefore exposed to a hot and burning sun, and surrounded by a dry and exsiccating air. The bulbs are also found at considerable depths." In the Hale Farm Nursery, Tottenham, where our plate was drawn last August, it grows well in an open border of rich peaty soil of a good depth. W. G.

## THE FLOWER GARDEN.

### TRITONIA AUREA AT GLASNEVIN.

**BULBOUS** plants of many sorts are frequently a source of great vexation. They often absolutely

worth a favourable place, and should be in every garden. When established it commences flowering in July, and even in October it is not without flowers. When the first bloom is over the old peduncles throw out fresh shoots, which produce a succession of flowers till stopped by frost. The blossoms are bright orange. When well grown they measure about from  $2\frac{1}{2}$  in. to 3 in. in diameter, and are invaluable where cut flowers are required. F. MOORE.

### INFLUENCE OF SOILS ON ALPINE PLANTS.

"CANONICUS" and others of your correspondents have lately appealed for correct and detailed information on the question how far difference in soil, first as to the mechanical, and secondly as to the chemical quality, affects alpine plants; and I have frequently been asked the same question by others. To anyone who is familiar with the views of the German botanists and horticulturists it seems curious that so elementary a feature should have so little occupied attention in this country. I would refer en-

and the like. Kerner's own opinion, after reviewing these classifications, is that a much simpler division suffices for the purpose of practical culture. Even he, however, attaches the greatest importance to two main features in the soil proper for different alpine, and as my own observations lead me entirely to concur with him, I will endeavour to give a very concise summary of his views for the benefit of those who are not German scholars, or may not be able to consult the original. He remarks, with perfect truth, that in the lowlands the alluvial and diluvial soils represent a mixture from the detritus of the rocks of mountain ranges. The chemical composition of the soil is more equalised, and the influence of soil on the distribution of species sinks into the background. On mountain ranges, on the other hand, "the geognostic sub-strata are more sharply contrasted," and the flora also divides itself, not only, according to the chemical composition of the underlying rocks, into distinct groups, but also according to the physical or mechanical conditions of the surface. Three points, therefore, require to be taken into account for the culture of alpine plants. *First*, the relative proportions of humus and inorganic matter; *secondly*, the chemical composition; and *thirdly*, the physical condition of the soil.

In relation to the *first* point, alpine plants may be divided into three groups, the first consisting of those plants which undertake the colonisation of ground or rocks previously barren and destitute of humus, and establish themselves on heaps of pebbles or boulders (Geröll) on the banks of streams, on groundslips, and on rocks and moraines. These plants of the first generation by their decay form a soil scantily provided with humus, on which growths settle themselves, which mostly have a tendency to cover the ground with vegetation of a close character. They are mostly grassy or creeping species, particularly Grasses, Carices, and with them certain Rhinanthaceæ and Orchidaceæ, which flourish in a closely growing turf of grass. From the growths of this second generation, in the course of time the ground becomes provided with a greater quantity of humus, and at last the humus predominates over the inorganic earth, the third generation of plants takes the place of the second, and these continually by their decay increase the humus, until at last the roots penetrate only a brown, turfy soil, which, if burnt, leaves hardly any remnant of inorganic matter.

Later on I will give a table showing the different proportions of humus in which a considerable number of alpine plants are found growing, and for those not named it may be assumed that they may be arranged according to the group in which the greatest number of their congeners are found. Perhaps the following general remarks may be found useful: To the first group of plants, those which grow in soil poor in humus belong the species of Epilobium, Papaver, Salix, Valeriana, most Composites, Alsines, Silenes, Crucifers, and Crassulaceæ. To the second group growing in soil composed equally of humus and inorganic substances belong Potentilla, Draba, most Primulas, Gentians, Rhinanthaceæ, Orchises, leguminous plants, Ranunculi, Umbellifers, Grasses, and Cyperaceæ. To the third group found in soil rich in humus belong Lycopodium, Luzula, Juncus, Eriophorum, Vaccinium, most Heaths, Lonicera, and Ferns.

*Secondly*, as to the chemical composition of soil. Much that has been written by the German authors seems to me to go into a needless elaboration and subdivision. The main feature bearing upon culture is that which several of your correspondents have noticed, namely, the division



*Tritonia aurea*, from specimen grown at Glasnevin, Dublin.

refuse to thrive, and if after much attention they push up a few leaves they do not always flower. Refractory examples of this description are generally conquered by planting them at the foot of a sunny wall, where they flourish beyond expectation. In such a position *Tritonia aurea* quickly establishes itself, and takes possession of all the space available in a few years, driving out of its way weaker growers such as *Sparaxis*, *Ixia*, *Anomatheca*, and similar plants. This beautiful South African Iridaceous plant is well

quiers to Kerner's "Cultur der Alpenpflanzen," published at the Verlag der Wagner'schen Universitäts Buchhandlung, Innsbruck, 1864. In this work the views of other previous authors are discussed, and the author's own opinions and experiences are very fully set out. By some of these authors plants are divided into numerous groups, in relation to their proper soils, under such names as flora of the slaty formations, flora of the crystalline, of the granitic, &c., mountains, limestone plants, gravel plants,



into plants growing in calcareous earth and those growing in soil destitute of lime. On this point there seems to have been some misapprehension. True it is, doubtless, that the chemical composition of the soil as a source of nutriment to plants is important, but not exactly in the sense often understood. For comparatively few plants is any particular inorganic substance indispensable for their nutriment. Most plants, the distribution of which has been observed to be governed by the nature of the soil, are rather *banished* by the presence of some particular inorganic substance, or else are *changed* in form, and appear as *parallel forms*. The simplest experiments in culture show that most so-called limestone plants flourish also in soil destitute of lime, while many plants from slaty formations perish if planted in soil containing lime, or if water containing lime is applied to them. It has been frequently remarked that in peat-bogs dressed with lime certain plants perish, and also that many species when removed to gardens in which they receive water containing lime cannot live. There are few plants which are found in limestone alone, and never elsewhere; on the other hand, there are many to which lime is injurious. And there are plants which change their character according to the soil in which they grow, that is according to the absence or presence of lime, whence no doubt have arisen the numerous species which exist as parallel forms. It has been observed that these changes have a character of some constancy, for instance, that the forms growing in limestone have often more hairs than their parallels in soil free from lime, as, for instance, *Rhododendron hirsutum* as compared with *R. ferrugineum*, and that their leaves are apt to be glaucous, while those in soil free from lime are rather grass green; that their leaves are more deeply divided, their flowers grow in larger crowns, and have flowers of a lighter colour. Thus if the forms growing in limestone are white, the parallel forms often appear blue, yellow, or red. A long list of these parallel forms appears in Kerner, of which the following are a few instances:—

In Limestone.	In Soil free from Lime.
<i>Androsace lactea</i> (L.)	<i>Androsace carnea</i> (L.)
<i>helvetica</i> (Gaud.)	<i>glacialis</i>
<i>Anemone alpina</i> (L.)	<i>Anemone sulphurea</i> (L.)
<i>Dianthus alpinus</i> (L.)	<i>Dianthus glacialis</i> (Haenk.)
<i>Primula Auri-cula</i> (L.)	<i>Primula villosa</i> (Jacq.)
<i>Ranunculus alpestris</i> (L.)	<i>Ranunculus crenatus</i> (Bert.)
<i>Silene alpestris</i> (Jacq.)	<i>Silene rupestris</i> (L.)

*Thirdly*, as to the physical condition of the soil. In this respect, the important point is the degree of mechanical subdivision of the detritus of the underlying rocks by weather and other agencies, and, resulting from this, the firmness and consistency of the soil, and with it the hygroscopicity or capacity to absorb and retain atmospheric moisture.

These degrees may be divided into three classes, the first consisting of rocks in a state not broken up in small pieces, "fells" (*Gerölle*) of rough stone, and the like; the second, of stone worn into fine grains, adhering together but loosely, or not at all, constituting soil termed sandy; the third, of stone divided into excessively fine particles, constituting the soils termed clayey. The first class hardly concerns us, for on bare rocks the only vegetation consists of Mosses and Lichens. If more highly organised plants seem at first sight to root on bare stones, closer observation shows that their roots grow in the fine detritus or mass of humus which fill the clefts and interstices of the stones. These plants root properly, not in the fells or *Gerölle*, but in the slimy detritus, clay or sand which lies deep under the interstices. It suffices, therefore, to deal with soil in regard to mechani-

cal condition as sandy or clayey. Experience shows that an incorrect application of clay or sand causes many alpine plants to perish quickly. Many plants requiring clayey soil, for instance, *Saxifraga biflora* and *stenopetala* die off in a few months if planted in sandy soil even if it is kept continually moist, and they thus obtain that equal humidity which is one of the properties in which clay excels sand; on the other hand, many plants, such, for example, as *Herniaria alpina*, require the loosest possible sand, and if planted in close soil quickly become yellow and wither. What are the causes working here is a matter difficult to ascertain scientifically. But for practical purposes, the classification of soils in the table below, which is taken from observation, will suffice.

The importance of the quality of the soil in relation to its capacity for absorbing humidity from the atmosphere and retaining it can hardly be overrated in the culture of alpine plants. The fatal effects of irregular and periodically diminished moisture in the soil at the roots, or occasional drying up of the soil, are a matter of frequent and positive experience, and the avoidance of such irregularity is one of the aims to be sought by the cultivator, and one of much difficulty. Pure humus retains moisture long, but in lowland gardens it hardly suffices even for those plants which have their habitat in such soil. The cooler temperature of the alpine regions seems to give a different chemical effect to humus. It is found that in gardens clayey soils may with advantage be substituted to a great extent, owing to their capacity for retaining water. This difficulty is not so great in England, owing to our moister climate, as in Germany, except during the occasional periods of drought which occur even in the western and southern districts, especially in spring. Kerner recommends chopped Sphagnum to be mixed with the soil, but in this country I should hardly think it necessary, except perhaps for such plants as *Gentiana bavarica*, which should always have the soil about it moist. I have found that an empty flower-pot sunk in the ground near this plant, which slowly gets out through the bottom, keeps the soil moist enough in dry weather; but certainly if Sphagnum could be kept growing by this means it would help.

To provide different plants on a rockery with the soil suitable for each, all that is necessary is to construct the rockery with a large number of separate compartments divided by stones. One part must be made of stones not being limestone. For the part appropriated to plants requiring lime, the stone need not be limestone if the compartments are filled with matter containing lime. The "lime chippings," which are often in this neighbourhood used for garden drives and walks, are useful to form a substratum for these compartments, and an admirable substance to mix with the soil for limestone plants is "mortar rubbish," or the mortar from old houses or walls when pulled down. The best humus is the decayed pins of conifers, found in Pine or Larch woods, but peat or any kind of leaf mould is also useful.

In the following table, in the first column, the figures 1, 2, and 3 signify the first, second, and third "generations" of plants, according to the proportions of humus, as above explained. In the second column the letter L signifies plants which succeed best in soil containing lime; the letter F signifies plants which must be planted in soil free from lime; and the letter E signifies either soil. In the third column, S signifies sandy soil, C clayey soil, and E signifies that the soil may be either sandy or clayey.

Table of the requirements of alpine plants, as regards soil:—

Names of Plants.	Generation.	Chemical quality.	Mechanical quality.
<i>Achillea Clavenne</i> , L.	1	L	C
<i>Clusiana</i> , Tsch.	1	L	C
<i>Ethiopia saxatile</i> , R. Br.	1	L	S
<i>Allopus crispus</i> , Bernh.	2-3	F	C
<i>Alyssum alpestre</i> , L.	1	F	S
<i>Wulfenianum</i> , Bernh.	1	F	C
<i>Androsace carnea</i> , L.	2	F	C
<i>Chamaejasme</i> , Hst.	2	L	E
<i>glacialis</i> , Hoppe	1-2	F	C
<i>Hausmanni</i> , Leyb.	2-2		S
<i>helvetica</i> , Gaud.	2		C
<i>lactea</i> , Vill.	2	L	S
<i>obtusifolia</i> , All.	2	F	C
<i>Anemone alpina</i> , L.	2	L	C
<i>balcanensis</i> , L.	2-3	L	S
<i>narcissiflora</i> , L.	2	L	C
<i>sulphurea</i> , L.	2	F	C
<i>trifolia</i> , L.	2	L	S
<i>vernalis</i>	2	F	C
<i>Anthemis alpina</i> , L.	1	L	C
<i>Aquilegia alpina</i> , L.	2	E	S
<i>atrata</i> , Koch.	2	L	S
<i>Bauhini</i> , Schott.	2	L	S
<i>Arabis bellidifolia</i> , Jacq.	1	L	S
<i>caerulea</i> , Haenk.	1	E	C
<i>pumila</i> , Jacq.	1	L	S
<i>ovirensis</i> , Wulf.	1	F	S
<i>Arctia Vitalbana</i> , L.	2	L	E
<i>Armeria alpina</i> , Willd.	2	E	E
<i>Arnica montana</i> , L.	2	F	C
<i>Artemisia Clusi</i> , Koch.	1	E	C
<i>glacialis</i> , Rehb.	1	E	C
<i>serpyllodes</i> , Koch.	1	E	C
<i>Artemisia lanata</i> , Willd.	1	L	C
<i>metellina</i> , Vill.	1	F	C
<i>nana</i> , Gaud.	1	F	S
<i>Aspidium Lonchitis</i> , Sw.	2-3	E	C
<i>Asplenium Bryoni</i> , Retz.	2	F	S
<i>serotinum</i> , Sw.	2-3	F	S
<i>Saxosa</i> , Leyb.	1-2		S
<i>filix</i> , Kit.	1-2	L	S
<i>viride</i> , Huds.	2-3	E	E
<i>Aster alpinus</i> , L.	1-2	E	E
<i>Azalea procumbens</i> , L.	3	E	E
<i>Bartsia alpina</i> , L.	2	F	C
<i>Bellidifolium Micheli</i> , Cass.	1-2	L	S
<i>Campylopus alpina</i> , Jacq.	2	L	E
<i>barbata</i> , L.	2	F	C
<i>caespitosa</i> , Scop.	1	L	E
<i>Moreliana</i> , Rehb.	1	L	S
<i>palla</i> , L.	1	L	S
<i>pumila</i> , Haenk.	1	L	L
<i>thysodora</i> , L.	2	E	C
<i>Zeyssii</i> , Wulf.	2	L	S
<i>Cardamine alpina</i> , Willd.	1	F	S
<i>Cerastium alpinum</i> , L.	1	E	S
<i>latifolium</i> , L.	1	E	S
<i>Chamaecochis alpina</i> , Rich.	2-3	E	C
<i>Cherleria sedoides</i> , L.	2	E	C
<i>Chrysanthemum alpinum</i> , L.	1	F	S
<i>Coronilla vaginulata</i> , Link.	1-2	L	S
<i>Cortusa Matthioli</i> , L.	2	E	S
<i>Cyclanum europaeum</i> , Mill.	2	L	E
<i>Cypripedium Calceolus</i> , L.	2	L	S
<i>Cystopteris regia</i> , Presl.	2-3	L	C
<i>Daphne striata</i> , Tratt.	3	L	C
<i>Dianthus alpestris</i> , Stbg.	2	L	S
<i>alpinus</i> , L.	2	L	S
<i>glacialis</i> , Haenke	1	F	S
<i>Draba aizoides</i> , L.	2	L	S
<i>fragilis</i> , Saut.	2	F	S
<i>interfl.</i> , Hopp.	2	L	C
<i>nervosa</i> , Walbr.	2	L	C
<i>Wahlenbergii</i> , Hartm.	2	F	S
<i>Zibulana</i> , Knecht.	2	F	S
<i>Drosera longifolia</i> , L.	3	F	C
<i>ovata</i> , M. K.	3	F	C
<i>rotundifolia</i> , L.	3	F	C
<i>Dryas octopetala</i> , L.	1-2	L	E
<i>Epilobium alpinum</i> , L.	1-2	E	S
<i>oiganifolium</i> , Link.	2	E	S
<i>Epimedium alpinum</i> , L.	2	E	E
<i>Erigeron alpinus</i> , L.	1-2	E	E
<i>alpinus</i> , L.	1-2	F	E
<i>Erinus alpinus</i> , L.	2	E	E
<i>Eritrichium nanum</i> , Schrad.	2	L	S
<i>Gentiana acutis</i> , L.	2	L	E
<i>asclepiadea</i> , L.	2	E	E
<i>bavarica</i> , L.	2	E	S
<i>brachyphylla</i> , Vill.	2	E	S
<i>cacina</i> , Presl.	2	F	C
<i>frigida</i> , Kke.	2-3	F	E
<i>fimbriata</i> , Fil.	2	L	C
<i>latea</i>	2	E	C
<i>nana</i> , Wulf.	2	E	C
<i>nivalis</i> , L.	2	E	C
<i>pumila</i> , Scop.	2	E	C
<i>prostrata</i> , Hke.	2	E	C
<i>pumila</i> , Jacq.	2	L	C
<i>pumilata</i> , L.	2	F	C
<i>purpurea</i> , L.	2	E	C
<i>trifolia</i> , Roth.	2	F	C
<i>viridis</i> , L.	2	E	C
<i>Globularia cordifolia</i> , L.	1-2	L	E
<i>indicata</i> , L.	2	L	C
<i>Gnaphalium Leontopodium</i>	2	E	S
<i>ovalegium</i> , Gm.	2	F	C
<i>sappinum</i> , L.	1-2	E	C
<i>Gypsophila repens</i> , L.	1	E	E
<i>Haequetia Eppactis</i> , D. C.	2	E	E



Names of Plants.	Genera- tion.	Chemical quality.	Mecha- nical quality.	Names of Plants.	Genera- tion.	Chemical quality.	Mecha- nical quality.
Hedysarum obscurum, L	2	E	C	Saxifraga stellaris, L	2	E	S
Helianthemum alpestre, Rich	2	L	E	stenopetala, Gaud	1	E	C
Horminum pyrenaicum, L	2	L	C	tenella, Wulf	2	E	S
Hypericum alpinum, W K	2	F	S	Scabiosa lucida, Vill	2	L	E
Hutchinsia alpina, R Br	1	L	S	Scheuchzeria palustris, L	3	F	C
brevicaulis, Hpp	1	F	E	Scirpus caespitosus, L	3	F	C
Iberis saxatilis, L	1-2	L	S	pauciflorus, Lightf	3	F	C
Linaria alpina, Mill	1	E	S	Scorzonera rosea, W K	2	F	C
Linnaea borealis, L	3	F	S	Sedum annuum, L	1	F	E
Linum alpinum, Jacq	2	L	C	atratum, L	1	E	S
Lloydia serotina, Salisb	3	F	S	dasyphyllum, L	1	E	S
Lychnis alpina, L	2	E	S	hispanicum, L	1-2	L	S
Lycopodium alpinum, L	3	F	C	reflexum, L	1-2	E	S
Scalpo, L	3	F	C	repens, Schleich	1	F	S
Myosotis suaveolens, Kit	2	E	C	Selaginella helvetica, Spring	1	E	E
Nigritella angustifolia, Rich	2	E	C	spinulosa, A Br	2-3	F	S
Notholaena Marantae, R Br	2-3	E	S	Sempervivum arachnoid, L	1	F	S
Oxytropis campestris, D C	2	F	C	Brauni, Funk	1	F	S
cyanea, M E	2	F	C	Funki, Braun	1	F	S
foetida, D C	2	F	C	montanum, L	1	F	S
Halleri, Bung	2	F	C	Wulfeni, Hpp	1	F	S
laponica, Gd	2	F	C	Senecio abrotanifolius, L	1-2	E	S
montana, D C	2	L	C	carniolicus, Willd	2	F	S
triflora, Hoppe	2	F	C	cordatus, Koch	2	E	C
Pedicularis Agria, L	2	L	E	incanus, L	1-2	F	S
Bonarota, L	2	L	E	nebrodensis, Guss	1-2	E	S
Petrocallis pyrenaica, Brw	1-2	E	C	uniflorus, All	2	F	S
Phaca alpina, Jacq	2	E	C	subalpinus, Koch	1-2	E	C
astragalina, D C	2	E	C	Sibbaldia procumbens, L	2	F	E
australis, L	2	E	C	Silene acaulis, L	2	E	S
frigida, L	2	E	C	Pumilio, Wulf	2	F	S
Phyteuma comosum, L	1-2	L	S	quadriifida, L	2	E	S
Halleri, All	2	L	C	rupestris, L	1	F	S
hemisphaericum, L	2	F	C	Soldanella alpina, L	2	E	E
humile, Schich	2	F	S	minima, Hopp	2	E	E
Micheli, Bert	2	F	C	montana, W	2-3	E	S
orbiculare, L	2	L	C	pusilla, Baumg	2	E	E
pauciflorum, L	2	F	C	Streptopus amplexifolius, D C	2	F	E
Schencheri, All	2	L	C	Teucrium montanum, L	1-2	L	S
Sieberi, Spreng	2	L	C	Thalictrum alpinum, L	2	F	S
spicatum	2	L	C	Thlaspi alpestre, L	1-2	L	S
Pinguicula alpina, L	1-3	E	E	alpinum, Jacq	1-2	L	S
Polygala amara, Jacq	1-2	L	S	rotundifolium, Gaud	1	L	S
Chamaebuxus, L	2-3	L	E	Frientalis europaea, L	3	F	C
Potentilla alpestris, Hall, fil	2	F	C	Trifolium alpinum, L	2	F	C
aurea, L	2	E	E	Valeriana celtica, L	2	E	S
caulescens, L	1-2	L	S	elongata, L	1-2	E	S
Clusiana, Mr	1-2	L	S	montana, L	1-2	L	S
frigida, Vill	1-2	F	C	salicina, All	1	L	S
grandiflora, L	1-2	F	C	saxatilis, L	1	L	S
micrantha, Ram	1-2	L	E	supina, L	1	L	S
minima, Hall, fil	1-2	L	C	tripetris, L	1-2	E	S
multifida, L	1-2	F	C	Veronica alpina, L	1-2	E	C
nitida, L	1-2	L	E	aphylla, L	1-2	L	C
nivea, L	1-2	F	E	bellidioides, Wulf	2	F	S
Primula acaulis, Jacq	1-2	L	C	fruticulosa, L	1	F	C
Auricula, L	1-2	L	E	saxatilis, Jacq	1	L	S
carniolica, Jacq	1-2	L	S	urticifolia, Lmk	2	E	E
Clusiana, Tsch	1-2	L	S	Vicia oroboides, Wlf	2	L	S
farinosa, L	1-2	E	E	Viola alpina, Jacq	2	L	C
glutinosa, Wulf	1-2	F	S	biflora, L	1-2	E	S
integrifolia, L	1-2	F	S	calcarata, L	2	E	S
longiflora, All	1-2	E	C	lutea, Sm	1-2	F	S
minima, L	1-2	E	C	pinnata, L	1-2	L	S
Ranunculus alpestris, L	1-2	L	S	Woodсия hyperborea, Koch	2-3	F	S
anemonioides, Zahlb	1-2	L	S	glabella, R Br	2-3	Dolomite	S
crenatus, W K	1-2	F	S	Wulfenia carinthiaca, Jacq	2	E	C
glacialis, L	1-2	F	S				
hybridus, Bir	1-2	L	C				
montanus, W	1-2	L	E				
parnassifolius, L	2	E	C				
pygmaeus, Wahl	2	F	S				
pyrenaicus, L	2	E	C				
rutaefolius, L	2	F	C				
Seguieri, Vill	2	L	C				
Trautvetterii, Hoppe	2	L	C				
Villarsi, D C	1-2	F	S				
Rubus saxatilis, L	2	L	E				
Salix herbacea, L	1-2	F	E				
retusa, L	1-2	E	C				
reticulata, L	1-2	E	C				
serpyllifolia, Scop	1-2	F	C				
Saponaria lutea, L	1-2	F	S				
ocymoides, L	1-2	E	S				
Saussurea alpina, D C	2	F	C				
Saxifraga adscendens, L	1-2	L	S				
aloides, L	2	E	C				
Aizoon, Jacq	1	L	E				
androsacea, L	3	E	C				
aspera, L	2	F	C				
biflora, All	1	F	C				
bryoides, L	2	F	C				
Burseriana, L	1	L	E				
cesia, L	1	L	E				
controversa, Stbg	1	F	S				
crustata, Vest	1	L	E				
cuneifolia, L	3	E	C				
elatior, M K	1	E	C				
exarrata, Vil	2	F	E				
Facchini, Koch	1-2	L	S				
hieracifolia, W K	1-2	F	S				
muscoideus, Wulf	2	L	S				
mutata, L	1	L	C				
oppositifolia, L	1-2	E	C				
petrea, L	1-2	L	S				
planifolia, Lapeyr	1-2	F	S				
rotundifolia, L	2	E	S				
sedoides, L	1	L	C				
Seguieri, Spr	1-2	F	C				
squarrosa, Sb	1	L	C				

Ferns we must be in the right path, both enjoying shade, good drainage, and atmospherical moisture in their native haunts. Mr. Wilson in his experimental garden at Wisley has obtained excellent results by planting—naturalising, I would say—both double and single Primroses on grassy banks, in old hedgerows, and amongst a natural growth of Furze. On an old bank facing the east, and skirting an Oak wood with a ditch in front, just such a place as one finds the male and lady Ferns growing abundantly and freely in, large patches of the double lilac and single bright-flowered forms were when I saw them covered with bloom. They were planted about two years only, but so perfectly were they in harmony with the surroundings, and so much at home, that one could well have supposed them to be indigenous to the place.

These facts are worth mentioning, as they will serve to convey a true idea of the requirements of the Primrose and Polyanthus, two of our most precious spring flowers, and may induce some to employ them in what may be termed a more natural manner. I have in mind, too, a fernery which has gradually become tenanted with spring flowers, and which long ere the Ferns show signs of awakening from their winter's rest are throwing up numerous pretty flowers. The situation is sheltered, being screened from cold easterly and northerly winds. The only direct break to the sun, however, is a Plum tree of moderate dimensions, that forming the centre of the arrangement, the branches of which do not, however, completely overshadow the Ferns, they in some parts getting the full force of the sun's rays in the after part of the day. Amongst them are dotted a few dwarf Conifers, golden Retinospora, Thujaopsis dolobrata variegata, &c., the spring flowers nestling around them in groups or here and there as single specimens, looking as happy and flowering as brightly as any such plants could well do. I would here remark that ferneries are often too elaborately constructed; there is no need to pile up the material some 3 ft. high, 1 ft. or so above the ground line being in a general way quite enough. Ferns like moisture and plenty of root run, and they cannot get this when an excess of organic material is used or when the rockery or rootery is run up some feet high in the air.

Byflct.

J. CORNHILL.

**Tennis lawns.**—My tennis lawn was originally laid about fourteen years ago, and in the ordinary course should now be a thick velvety turf, but instead of this, the Grass is coarse and without texture, and, notwithstanding frequent mowings, it always has a more or less rank appearance. I have just had the whole lawn relaid on a bottom of about 1½ in. of sand and cinders; new drain pipes have also been put down, as during last year's rains the lawn got so wet and muddy that tennis became an impossibility. The sod is evidently too heavy, rich, and muddy, so to speak; the question is how to lighten it. Will someone be so good as to give me a few hints as to a mode of treatment to improve the texture of the Grass and to lighten the soil?—A DEJECTED HERBALIST.

**Pot Marigold Meteor.**—This flower presents an admirable illustration of a happy name. Last year it shot out upon the floral horizon like a brilliant coruscation for a season, then it is apparently forgotten, and yet I am sure that many who like simple hardy flowers, and who have not yet seen this Marigold, would be delighted to have it in their gardens blooming abundantly at this time of the year, as it is doing here; indeed those who see it for the first time are quite enthusiastic over it, and most heartily wish they had sown seed of it in the spring. It cannot be too widely known that it is a capital autumn-blooming plant; but, as a rule, it is treated as a summer bloomer, in fact as a hardy annual. And therein lies the cause of its want of popularity. We have so many summer flowers, and of these so very many that are extremely beautiful, that amid such wealth of bloom and colour a poor simple pot Marigold stands little chance of recog-

### SPRING FLOWERS AND HARDY FERNS.

This is a combination too seldom carried out, but it is one of the most pleasing and satisfactory that can be adopted. There are some kinds of bulbous plants, such as the Calochorti, bulbous-rooted Iris, &c., that could not well be used in this way; they require a large amount of sunshine to ripen them after growing, but the large and beautiful family of Daffodils, the several kinds of Snowdrops, Crocuses, and many of the Lily tribe rejoice in the shade and shelter that they would get when associated with Ferns, Primroses, Polyanthuses, Violets, Forget-me-nots, some of the Saxifrages, such as granulata, sarmentosa, not quite hardy, but generally succeeding; Andrews, a pretty kind not much grown; and umbrosa, the London Pride, are amongst the many spring growing plants that not only grow, but thrive best in partial shade. All the plants here enumerated appear to grow with greater freedom when planted on rock-work or rockeries, such as are considered needful for Ferns in the open air. I have an idea that many of our choice forms of Primroses and Polyanthuses would live and increase thus placed, when under ordinary culture they can scarcely be kept alive. However this may be, the experiment is worth trying, and it is only reasonable to suppose that where the common kinds grow with exceptional strength the more choice and "miffy" varieties would succeed in like proportion. Taking Nature for our guide, we may be sure that in associating Primroses and

E. HARVEY.



dition. But at this time of the year the case is altered, for the thousands of brilliant summer bloomers have disappeared; early frosts, tempests, and colder weather have done for them, and in the gardens the once poor despised Marigold blooms as a queen, but certainly as a solitary one—almost without a compeer. If those who want a good bunch of bright yellow flowers at this late season would sow their seed of Meteor Marigold at the beginning of July instead of in the spring they would then realise its value. No flower however humble that will bloom freely outdoors just now can be despised, and therefore I advise readers to make a special note of this pot Marigold.—A. D.

**Cheiranthus Marshalli.**—This plant being so thoroughly hardy, how is it that it is so little met with in gardens? For a dwarf growing hardy perennial that will produce a rich mass of colour in the spring it cannot be excelled, and certainly it is brighter and more showy than its ally, the straw-coloured kind *alpinus*. Probably one reason of this decadence of a first-rate border flower is found in the lack of attention to culture and propagating needs. The plants do not thrive well after becoming a few years old, and it is wise to not only encourage the production of young shoots from the base of the plant, but also to get them to root freely and thus increase the stock. Although liking a rich moist soil in the summer, yet it is chary of too much moisture in the winter, but as if the plants are made to propagate rapidly they can always be transplanted without danger, no fear need be felt lest the winter should injure the old plants. I find in the summer that a thick dressing of old pot soil placed about the new growth encourages it to make root, so that if the plants are lifted and pulled to pieces in the autumn every young root will have shoots and may be in a few weeks made into a strong well-rooted plant, and may later on be transplanted into beds to make a gay mass of bloom in the spring if so desired, or, as it is thus easy to get several hundreds of plants with little trouble the old strong plants not required for division can be planted out in the beds, and the young stuff dibbled out on a south border for the winter may be shifted into cooler quarters for the summer, and these will then grow into large plants. A matter of this sort is a question of time and attention. As a rule, in many gardens there is not time to attend to the needed propagation of hardy plants, and thus they in time die out or become few. This *Cheiranthus* is just one of these, yet so bright and beautiful when in bloom that its absence is a great loss to any garden.—A. D.

**Wallflowers and Stocks in autumn.**—After flowering in spring we cut a good number of Wallflowers close back and allowed them to stand in their places. Through the summer they made vigorous growth, and are now finely in flower. Midlothian or Intermediate Stocks in pots treated in the same way do remarkably well. We have had plants of Brompton Stock in the same pots for three years, and have bloomed them well every year.—OLD MORTALITY.

**Clematis graveolens.**—I admired the illustration of this in No. 520 of THE GARDEN, but do not agree with what you say about it. For instance, you say it is hardy in the south, and if planted on a sheltered spot, as if you doubted its hardiness. We have a fine specimen of it against the north-west side of one of our buildings planted some four or five years ago. The new shoots which it makes during summer never die down in winter, and some of them are between 15 ft. and 20 ft. long. Last winter the thermometer stood 30° below zero, Fahr.; nevertheless, it bloomed freely from the early part of summer till frost came, so it is perfectly hardy with us. I have a quantity of seedlings in bloom this year which were sown last fall. They were kept in a cool house during the winter, and were planted outdoors this spring, where we have them now, and all are fit for sale. Last September I sowed some more seed in boxes about 2 in. deep, and they must be pricked out soon, and kept indoors for the winter. The plant is worth cultivation, not only for its profusion of

yellow flowers, but also for its white feathery seeds, which give it a beautiful aspect mixed with the distinct colours of leaves and flowers with which it may be associated during the summer and autumn.—WILLIAM H. BOOMKAMP, *Passaic, New York.*

## TREES AND SHRUBS.

### THE IRISH JUNIPER.

(*JUNIPERUS HIBERNICA*.)

THE annexed woodcut may be recognised at a glance as representing a specimen of this very distinct variety of the common Juniper.



Irish Juniper.

originated in Ireland, most probably from seed, and on account of its singular habit of growing in a slender, compact column it has proved to be a most useful evergreen tree for utilising in Italian and other geometrical gardens, where stiff and formal looking plants are needed to please the tastes of those who cultivate this style of gardening. This Juniper is not only strikingly distinct in form, but its foliage also affords a decided contrast in colour to that of most other

evergreens, being a mixture of light green and silvery glaucous hues. It is effective when planted alternately, or in conjunction with the Irish and Golden Yews and standard Portugal Laurels. As a dwarf tree for planting sparingly in a cemetery or churchyard it is peculiarly suitable on account of its comparatively slow growth, as well as its slender form occupying but little space; it is, moreover, perfectly hardy, and will grow in any common garden soil, but doubtless prefers a moist, rich, heavy soil to a dry, gravelly, poor one.

*JUNIPERUS HIBERNICA COMPRESSA* is similar to the above in habit and colour, but very much slower in growth, and smaller in all its parts. It forms a compact, slender pyramid. For parterre winter gardening on a small scale this little Juniper would be invaluable. It is not difficult to transplant; indeed, it is so dwarf a tree that it could be grown on for years in a moderate-sized flower-pot, thus insuring its safety when removed from its summer to its winter quarters, and *vice versa*; the rate of its growth I do not believe exceeds 1 in. a year.

*JUNIPERUS EXCELSA STRICTA* is an erect variety of the handsome Crimean Juniper. Its foliage is beautiful in colour, being light green and glaucous, and contrasts charmingly with dark green, wide-spreading evergreens. It is quite hardy, having stood the test of the past few trying winters without injury.

*JUNIPERUS THURIFERA*, the Spanish Juniper, is another hardy upright-growing tree with glaucous leaves, suitable for giving effect where formality in gardens is studied.

Longleaf.

GEORGE BERRY.

### TRANSPLANTING MAGNOLIAS.

WITH regard to the Magnolias transplanted at Abinger Hall, to which allusion has been made by Mr. Cornhill, the gardener there gives the following account: A wish having been expressed for their removal, I accordingly set to work, as I thought, to prepare them by root pruning and putting in some better soil in place of that which I took out. This was done a year before removal. In October of the following autumn removing commenced and occupied nearly a fortnight. I then discovered how little good the previous preparation had done, as I had to burrow under and behind the plants to cut with mallet and chisel the large roots which had gone straight down the wall until they reached the cellar floor level, and then ramified in all directions. The roots being cut, we were enabled after much trouble to place the plants in their present position. When planted some of the largest branches were cut back, the rest being tied together and bound up with mats, a good mulching being applied to the roots. In the spring the tops were further reduced by pruning, and the branches were tied out. The mulching was taken away and turf laid down. Water was abundantly supplied, and the syringe freely used, and to this treatment is attributed the circumstance of their retaining their foliage almost entire. Several more of the branches were removed to render the plants more shapely, and they were again matted the two following winters. They kept perfectly fresh the first summer after removal, but made no growth; during the second they showed signs of starting and made a little growth; the third they made many new buds, and pushed a great number of dormant ones, which developed into strong growth. Since then all has gone on as satisfactorily as could be wished. Protection has again been given during the past two winters. One plant is on the east, the other on the west side of the house. Although the former has not made so much growth as the latter, it is in every way in a most satisfactory condition. The plants are believed to have been cut down by frost in Murphy's winter, and they are upwards of 80 years old. The stem of the largest one, which appears to



have been cut down to within 3 ft. of the ground, measures 3 ft. 2 in. in circumference at the ground, and 2 ft. 2 in. about 1 ft. or so above it. I may add that a few fleshy roots were the only result of the preparation for removal by no means sufficient to account for their present condition.

I stated in my former note that the largest covered about 150 ft. square of wall surface, which I think is well within the mark. Mr. Payne, the gardener at Abinger Hall, who superintended the removal of these Magnolias, has authorised me to say that anyone interested in the matter and desirous of seeing the trees can do so. In the case of the one removed from a distance to Joldwynds I may state that it was transplanted in May, 1878, and had not been previously prepared like those at Abinger Hall. The main roots went straight down the wall and crept underneath the foundation. Roots which were outside were preserved, but, owing to drains and a path passing close by, several had to be removed. As soon as the plant was lifted the roots were bound up in moist hay, and it was replanted with the least possible delay. Water was liberally supplied at the root. The foliage was frequently syringed and shaded, treatment which also had the effect of retaining the foliage almost entire. The soil in which it is planted is sandy loam, and no special protection has been given in winter. The aspect is due south, but, owing to a number of large trees being in the immediate vicinity, it is very little exposed to sunshine. It will thus be seen that every ordinary precaution was taken to ensure success, and I am glad of having this opportunity of correcting my former mis-statement with respect to this matter.

C. D.

**Chimonanthus fragrans** is now flowering better with us than for several years past. The proper time to prune this shrub is just after it has gone out of flower—generally about the end of February. I have known people complain of its not flowering simply because they pruned it in the autumn as soon as all the leaves had fallen, which pruning cut off all the flowering shoots. —J. C. C.

**Single Kerria.** Allow me to inform "E. H. E." (p. 565) that I have *Corchorus japonica alba* or *Rhodotypos kerrioides*, single white, lately illustrated in THE GARDEN. Your correspondent has, I think, written to me for *Kerria japonica*, but I took it that he wanted the single yellow *Kerria*, which he may still want, but that I have not got. —T. WARE, Tottenham.

**Magnolias in December.**—I have a bloom on my *Magnolia* which promises to be fully developed in a day or two. It is on a south wall — E. T. YATES, Norwich.

## SEASONABLE WORK.

### FLOWERS AND PLANTS IN THE HOUSE.

G. J. SURREY.

THERE are good and bad ways of doing simple things. Violets in water are commonly tied up in tight bunches with the heads all even; a few leaves are put between the bunches, or, worse still, all round the edge. Czar Violets, now in great abundance, if grown with ordinary care, have stalks from 6 in. to 8 in. long or more. The best way to manage them after picking a good quantity with long stalks and some of the shining later-grown leaves is to take them up singly and arrange them in a bunch in the left hand, keeping the ends of the stalks even. This brings the heads of the flowers uneven, which looks well. Leaves should be added irregularly. When no more can be held in the left hand there will be a good bunch, and it should be lightly placed in such a glass as will hold it in the same position, only rather more loosely. Other table bouquets from the open air are a good bunch of scarlet *Anemone* with its own leaves, dark red-purple *Chrysanthemums* with white *Laurustinus*, pink *Chrysanthemums*, cut long with liberally cut foliage of the broad-leaved variegated Japan *Euonymus*, whose leaves are clear white and pale green in broad distinct markings. *Laurustinus* is useful in combination with many flowers. There is a very good nearly pure white variety, but very white flowers may be found on the shady side of many an old bush,

particularly if it is near a wall or building, and these from being sheltered will be found to be larger and better developed. As pot plants we have separately *Linum trigynum*, pink *Epiphyllum* and *Mignonette*, and a handsome combination of *Calanthe vestita* and *Gesnera exoniensis* (the latter for foliage only), five or six plants of each in a large receptacle.

## FLORAL DECORATIONS.

J. HUDSON, GUNNERSBURY HOUSE.

WHERE a considerable amount of dinner-table decoration has to be done, a good supply of Ferns and *Selaginellas* should be kept up in small pots. Of the former, *Adiantum cuneatum*, *Pteris serrulata* and its crested variety will be found serviceable. Of the *Selaginellas*, *S. denticulata* (Kraussiana) and its different forms are the best. Where such as these are grown, a considerable change may be made in the mode of grouping and arrangement in order to give variety and avoid monotony. A good central group may be made in the following manner: If proper receptacles are not at hand, a thick oval layer of brown paper on the cloth will answer, or perhaps what would be better a large oval dish, with a slight layer of moss on the bottom. For the outer edge select somewhat bold foliage, such as that of the variegated forms of *Begonias* or *Adiantum farleyense*. If *Calanthe vestita* can be had with well developed spikes, select four or five plants of it, turn them out of their pots, and arrange them on the moss. Then if Ferns are at disposal, as previously mentioned, they should be likewise used in sufficient numbers to make a good groundwork to the whole. Neither the *Calanthes* nor Ferns will be injured provided they are well looked to afterwards, and they will produce sufficient variety without any additions thereto, unless it be one or more of the spikes of *Calanthe Veitchii* to furnish colour. Still keeping to the same base as a commencement, a fringe of rather bolder forms of Fern foliage may be first arranged, then fill up the central part with small Ferns, &c., as aforementioned, adding thereto one plant of *Cyperus alternifolius* as a centre. Then insert a few spikes of *Eucharis*, or one or two each of Roman *Hyacinths* or Paper-white *Narcissi*, using as a contrast thereto some sprays of *Euphorbia jacquiniiflora*, or two or three rather small bracts of *Poinsettia*. For sideboard decoration the Japanese forms of *Chrysanthemum* will make a bright and effective display, two or three colours being sufficient for one vase. I think these look best when arranged by themselves, as do also the large flowered incurved varieties. As these will all soon be over it will be advisable to make the most of them while they last.

## INDOOR PLANTS.

T. BAINES, SOUTHGATE.

**Pelargoniums.**—The large flowered varieties of *Pelargoniums*, like many other plants that make a considerable amount of growth through the winter, are much influenced by such mild weather as we are having this season. Unless they can be accommodated with a thoroughly light house and in addition are sufficiently near the glass, they inevitably become drawn up weakly; and where this occurs it not only spoils their appearance, but correspondingly affects their blooming. To mitigate this where the houses in which they are located are not light enough, the plants should be placed as far apart as the room available will allow, in all cases keeping the soil as dry as the foliage will permit without turning yellow. There is no kind of plant with which I am acquainted that will bear, or which requires, the soil keeping so dry during the autumn and winter as *Pelargoniums*, both the show and fancy kinds; wherever there is a departure from this treatment, the shoots and leaves become elongated, and if the roots are examined the cause will be apparent in the spare, insufficient quantity existent. They thrive best in soil drier than many things would bear.

**Lachenalias.**—Where a good stock of these exists they may be had in bloom for a con-

siderable time. If some of the strongest are put in an intermediate temperature, their flowering will be accelerated, but it is not advisable to subject them to heat until their foliage is all but fully grown and there are signs of the flower-stems making their appearance. If hurried too early, the amount of bloom forthcoming will be reduced. These along with some other species of plants are influenced considerably in their time of flowering by the way in which they have been treated in previous years. Those that have been forced before will naturally come on with less heat than examples that have bloomed with only the aid of a greenhouse or cold pit.

**Hyacinths, Narcissi, Tulips.**—It is not good practice to begin forcing the large varieties of *Hyacinths* too soon, for though when well furnished with roots they will bear a fair amount of heat, yet when started and pushed on so as at all to hurry them, they usually bloom indifferently. Along with the last batch of Roman varieties, some of the large flowered kinds should be put in heat, as they take considerably longer to bring into flower than the Romans, and if a supply is to be kept up, no time must be lost. Later sorts of Tulips should be put in heat to succeed the varieties of Van Thol, and the Paper-white *Narcissus* must be regularly started. It is much better to put in heat only as many of the different kinds of these bulbs as will meet the demand than to bring them on in larger numbers, which generally results in more flowers than are wanted at a time, with a corresponding deficiency at other times. Simple as the treatment of these plants is to induce them to flower satisfactorily with stout short bloom-stems and healthy foliage, yet if at all hurried or stood too far from the glass the flowers will be so deficient in substance as not to last their full length of time.

**Cyclamens.**—Plants of these raised from seed sown late in summer, if not already pricked off into pots or pans, must be so treated before they get matted together, or they will receive a check. Keep them in a temperature of about 50° in the night, examining them from time to time to see that they are free from aphides, insects which are much more injurious to *Cyclamens* than to most other plants; concealing themselves on the underside of the leaves, they often do much harm before discovered. Larger plants that are in a condition to flower should have a few degrees more warmth than is required for ordinary greenhouse plants, but on no account must they be kept warm in an insufficiently light house or pit, or their flower-stems become drawn and weak, which spoils the effect of the plants, and makes the flowers of little use for cutting.

**Acacias and Callas.**—Most of the *Acacias* bear a moderate amount of forcing, such as the temperature of an intermediate house; *A. armata* and *A. Drummondii*, naturally coming into bloom early, are amongst the best for forcing. There is the additional advantage attached to free-growing plants of this description, that, if required, they will bear the whole crop of flowers being cut, the shortening back of the shoots being beneficial to the plants rather than otherwise. More *Callas* should be placed in heat, still selecting strong, well-established examples. These *Callas* or *Richardias* are all but water plants, and should have the soil kept wetter than most things; with them also it is an advantage if they can be placed with their leaves almost touching the glass, by which means they will be kept as dwarf as they are generally seen when flowering in summer.

**Brugmansias.**—Where these are planted out in conservatories that are kept somewhat warm, they are liable to get thin of branches and unsightly unless the plants are yearly subjected to a free use of the knife; if required, they will bear the shoots shortening moderately close in. If in houses where some heat is kept up through the winter, they should at once be pruned. Where a considerable space has to be covered with their branches, such as a back wall in a large house, the roots ought to have plenty of room. They do best where access is to be had to an outside border,



similar to Vines; so situated, they will occupy a greater space than most things, and will flower to an extent not possible where the roots are cramped.

**Luculia gratissima.**—This, like the preceding plant, is never seen to advantage unless where it has room to extend its branches, but it will do with less root space than the *Brugmansias*. Now, when its blooming is about over, all the pruning that it wants should be done, as it begins to grow immediately the flowers fade. Where there is a little more warmth than is kept up in an ordinary greenhouse, if young stock is required, a few of the branches should be allowed to go unpruned, as these will furnish cuttings, which when they have grown 4 in. or 5 in. should be taken off with a heel and put singly in small pots, plunged in bottom heat, kept moist, and covered with a bell-glass. I have found this plant not so easy to strike as some things, as if the cuttings ever flag at all they rarely recover.

#### ORCHIDS.

J. DOUGLAS, LUXFORD HALL.

**East Indian house.**—We have lately had frost at nights, and consequently it has been necessary to keep up the temperature by means of a little more heat in the hot-water pipes. In our case we allow the temperature to fall as low as 60° if frost sets in very severe rather than keep it up to 65° or 70°, which we could do. Some allow the fires to get low in the fore-part of the day, and then about three or four in the afternoon fire vigorously. The fact is from now until perhaps the end of January or later the hot-water pipes should be kept nearly at a uniform temperature day and night, the exception being those nights on which frost is intense. Next in importance to a proper degree of temperature is the state of the atmosphere; a dry atmosphere is inimicable to the plants, and those that have no pseudo-bulbs to support them generally suffer first, as, for instance, the *Phalenopsis*. In looking through Mr. Low's houses filled with these plants, I was particularly struck with the arrangements made to promote and maintain a moist atmosphere; and there does not seem to be any stint in the way in which water is applied to the roots. The *Sphagnum* on the surface of the compost in the baskets was quite green and thriving. It was interesting, too, to see the roots extending themselves in abundance, many of them half a yard long, down towards the border underneath the stage, which is kept constantly moist. *Angraecums*, such as *A. Ellisi* and *A. citratum*, succeed well in Mr. Low's house. They also are evidently quite at home in the moist atmosphere even in winter. Some of the *Dendrobiums*, removed from the cool end of this house some time ago to a cool place to rest, may be taken back one or two at a time. Those having the flower buds most developed should be taken back first. It is of no importance whether they are placed in the *Cattleya* house or in this department, as they succeed well in either place. The principal object is to give them a season of rest, that is, a cool temperature and a considerable amount of dryness at the roots for at least two months. They will then grow away freely and flower well next season. Six good plants of *Dendrobium nobile* and as many of *D. Wardianum*, if well managed, will yield a succession of flowers for at least six months. I do not find that plants placed in a greenhouse in October or early in November suffer at all, even if they are not placed in heat until the middle of April, by which time the flower buds and young growths are far advanced. If *Cattleya gigas* has been removed from the cool end of this house to a much cooler place to rest, let it be taken back as soon as the growths can be discerned starting from the base of the old pseudo-bulbs. The plants must be placed in a light position whilst making their growths. I have already pointed out the importance of watching for slugs, but besides these depredators thrips and red spider are not inactive, even at this season, and we have, as I write, been obliged to dip numerous

plants in a mixture of soapy water and Tobacco liquor in order, in a few cases, to destroy thrips, and in others to prevent its appearance. Many fumigate their houses with Tobacco smoke, but this is so dangerous that we have avoided it now for some years.

**Cattleya house.**—At this season of the year work is rather slack, and a good opportunity is afforded to overhaul the whole stock of *Cattleyas* and to see that they are thoroughly cleansed from white scale and other pests. The leaves and bulbs should be carefully washed with a soft sponge and tepid soapy water. *Cattleya Mossiae* and some of the other species are now forming abundance of young rootlets from the base of the bulbs containing the flowering sheaths for next year. If necessary, these should have some fresh *Sphagnum* and good fibrous peat placed around them, taking care not to injure the rootlets. This material should be placed within reach of the roots, but they must not be covered with it. *Laelia purpurata* should be well exposed to the light, and should be placed in the warmest part of the house unless it has quite completed its growth, when it does not matter so much. *Cattleya Warneri* is also starting into growth, and if there is an opportunity to do so, this may be also surface-dressed, or it may receive that attention a month later. Various species and varieties of *Oncidiums* are now making their growths, and some of them are forming roots freely at the same time. I find in the case of *O. crispum*, for instance, that some plants of it flower about midsummer, and others now. The winter-flowering varieties are throwing out fresh roots from the base of the last formed bulbs, and these are very attractive to slugs and snails, which eat them off and sadly mar the future prospects of a good bloom. The rather showy *Odontoglossum hastilabium* is now throwing up its flower-spikes. In watering this species care must be taken not to pour the water on to the last formed growths, else they are not unlikely to rot off during winter. The compost must be kept moderately moist in order to perfectly develop the flower-spikes. *O. Phalenopsis* is still in the midst of its growth, and the plants should be kept in a light position in which there is a moderate degree of warmth. None of the plants in these houses should be unduly excited until after the new year comes in; the main point is to keep them at rest during the next six or eight weeks, that is as far as they can be made to rest, for plants that are making their growth would suffer if the temperature was too low or the atmosphere too dry. It baffles the cultivator when he has to deal with plants at rest and plants in growth in one house at one time, but much may be done by selecting suitable positions for each species or variety.

**Cool house.**—The *Masdevallias* are at present very interesting, especially those in bloom. We would have had stray flowers of *M. Harryana* and *M. Veitchi* even so late as this, but the flower-buds were picked off before they opened, as these two are really summer flowering plants, and we do not care to have them out of their season. The two kinds just named and *M. Lindeni* are now growing freely, and it is a great satisfaction to see them forming an abundance of new growths, as every one formed now represents a flower next season. The pure white *M. tovarensis* is growing and flowering freely in the coolest house. Some say that it requires more heat than the *M. Harryana* or *Lindeni* type. It may be so, but as long as they do well in the coolest house I would be reluctant to move them. I have seen nearly all the best of what are usually called cool Orchids succeed well in a temperature which frequently fell as low as 35° in winter, and the showy *Oncidium macranthum* will stand as low a temperature as any of them. One of the best plants of this I ever saw was grown by Mr. Ward, at The Poplars, Leyton. It was tied to a thick log, and was hung up near the glass. It grew amazingly, producing a number of strong flower-spikes every year. It received, of course, a considerable supply of water all the year round. These ought not to have quite so much water as *Odontoglossum*

Alexandre, but they must not go short now when they are making their growths, and the earliest of them are also throwing up their flower-spikes. The house will do with less atmospheric moisture now than at any other season of the year.

#### PROPAGATING.

**Gardenias.**—These plants are readily increased by means of cuttings taken when the young growth is in a half-ripened state. No more leaves should be removed than is actually necessary for the purposes of insertion, and after putting them in place them in a close case with bottom-heat, at first setting them on the surface, and in about a fortnight when slightly callused plunging them. The extra heat thus given will hasten the formation of roots. When rooted they must be inured to the air by degrees.

**Habrothamnuses.**—There is no difficulty in striking these at any time, but if put in early in the year they will make good plants by winter, and many of them will flower the first season. Cuttings may be taken and treated the same as one would *Fuchsias* and similar subjects, *i.e.*, they should be placed in a close case in a warm house, but as *Habrothamnuses* are, when in heat, very liable to the attacks of thrips and red spider, they must when rooted be soon removed to cooler quarters. Their near ally, the beautiful *Cestrum aurantiacum*, is also increased in the same way.

**Hydrangeas.**—Those little plants with enormous heads of flower so freely sent into Covent Garden Market during the season are all raised from cuttings, many of which consist of young shoots taken from the flowering specimens before sending them away. They are put singly into small pots kept close till rooted, and when that takes place, exposed as much as possible, the object being to ensure plump, sturdy growth. Another method is to grow large plants in an open spot for the purpose of furnishing cuttings, which should be taken about the early part of August, at which time the embryo flowers will be already formed.

**Luculia gratissima.**—Many complaints are made of the difficulty experienced in striking cuttings of this fine sweet-scented shrub, but for my own part I have always found it to root freely. My method is to take the cuttings in the spring, consisting of the tops of the young growth, and insert them singly in small, well drained pots in a soil composed of a mixture of peat, loam, and sand in equal parts. They should be put in as soon as possible after being severed from the parent plant, as if allowed in any way to flag, it will seriously militate against their chances of success. The after treatment consists simply in watering if necessary, in drying the lights every morning, and in removing decaying leaves.

**Lasiandras.**—These are propagated in the following manner: When they have finished flowering cut them back a little, then start them in heat, when they will break freely. For cuttings select the young growths as soon as they commence to harden, and take them off at a length of about 4 in. The pots should be well drained; half fill them with broken crocks, and over these place some fibrous peat; then fill up with soil consisting of two-thirds peat and one of loam, with a liberal admixture of sand, and after pressing it down moderately firm place a layer of sand on the top. The cuttings may then be inserted not too thickly, and when watered thoroughly placed in a close case kept at a stove temperature. The lights should be kept off for a little time to dry the foliage, otherwise moisture collects on the hairs thereon and speedily induces decay. When necessary to water them at any time, the same rule must be observed of allowing the foliage to dry somewhat before closing the case entirely.

**Pentas carnea.**—Cuttings of the young shoots of this taken at any time root without difficulty, and the same remark applies to those fine winter-flowering plants, *Plumbago capensis* and *rosea*.  
T.



## FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

BREAKING up walks and roads as some do with a view to clean them is a mistake: not only is it a waste of labour, but it so mixes up the material by bringing to the surface the rougher portions beneath, as to cause much discomfort in their use, and it is a long time, even under the best management, before they can be got into good condition again. If walks or roads are broken up at all it should only be in cases in which they are unlevel and it is intended to add fresh gravel, as then the loosening up of the bed gives what is laid on a chance to bind, and the whole under the action of a good heavy roller becomes thoroughly hard and consolidated. To get the bed in this desirable state it is necessary to take advantage of the weather, so as to roll it when wet as long as it will bear the pressure, and when it shows symptoms of becoming in a mortary state it should be left to subside. In the selection of gravel for garden walks choice should be made of that having a bright colour and which is of a close, binding nature, two qualities that are essential if pleasant looking serviceable paths are to be made. Sandy gravel that is loose in pits when dug never binds, and it is only such as is found in hard solid beds that has sufficient adhesive matter in it to hold it together again. If the fine parts are out of proportion to the stone it will be necessary to screen or sift so as to take some away, as it is only the stony particles that will bear the weight of the traffic. To have walks look really well, the stones in the gravel used for the surface should not be larger than Peas or small Beans, but the larger and more rugged they are beneath, the better and more durable will the walks be. Where weeds are troublesome through lack of traffic, and the edgings are of grass or tiles, so as to admit of its being used with safety, there is nothing equal to salt for their eradication, which, put on regularly every year about the middle of May, will keep the gravel free for the rest of the season. Not only will salt kill weeds, but it has such a cleansing effect that Moss and all vegetable growth of that kind disappears, and gravel brightens and hardens under its influence considerably, so much so, indeed, as to have the appearance of being freshly laid.

**Lawns** being now soft, an opportunity is afforded to rectify any inequalities of surface that will admit of being put right by the rammer, by the aid of which any man with a good eye will be able to beat such parts down, and if the roller is then passed over a few times all will be made smooth and level and in good order for the mowing machine when the time comes for its use. There are now so many plants of an ornamental character, that beds and borders, though shorn of flowers, may be made attractive by their bright, cheerful foliage; among shrubs there is great variety, the *Acubas* being a host in themselves. Added to these, there are *Hollies*, *Retinosporas*, *Yews*, *Ivies*, *Euonymus*, and *Vincas* which, dotted about with patches of *Primroses*, *Fansies*, *Violas*, *Daisies*, bulbs of various kinds, *Aubrietias*, and others spring flower plants, will render these parts gay looking and attractive for a long time to come. That there may be no drawback to the full enjoyment of the above named, the ground should be kept scrupulously clean and well raked among them, but it will be necessary when carrying out such work to exercise particular care not to injure any plants just making their way through the soil. Those of doubtful hardness not already protected should receive that attention at once, as sharp frost may now be expected at any time; and as the weather has during the autumn been so exceedingly mild, they are all the more likely to suffer through the late growth they have made. Herbaceous *Lobelias* are best taken up and potted and wintered in cold frames, and it is advisable to treat choice *Pentstemons* and *Hollyhocks* in the same way; in early spring by giving them a little warmth cuttings may be taken off and stock propagated with safety. With the more tender subjects, such as *Pelargoniums* and other bedding plants, damp will now be the great enemy to con-

tend with, to expel which air should be admitted on all favourable occasions, and fire-heat given to move the atmosphere within the structures the plants are housed in, as it is only by keeping that in motion that the ravages of mouldy fungus can be checked or stopped. As dead and decaying leaves are the primary cause of this parasite, they should be picked off and all dead branches cut away, the surface of the soil stirred and cleaned, which will help to render the air sweet and wholesome. The variegated and tricolor *Pelargoniums*, being the most delicate, should have the driest and warmest position assigned them, the best place for them being on shelves near the glass. *Calceolarias* cannot well be kept too cool, as the point with these is to check any tendency to growth during the winter. With this view the lights should be taken entirely off for a few hours every day when mild, and air given at other times by tilting them up behind, which will keep the plants sturdy and strong and help to prevent attacks from disease.

## FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Pines.**—Endeavour to maintain a bottom heat of 90° and a minimum top heat of 70°, with a rise of 10° by day in the fruiting pit. Look over the plants at least once a week, and water well with warm diluted liquid or guano water, when feeding, is considered necessary. Dew the plants over with a fine syringe on clear, mild days, and moisten every part of the house with weak liquid when the house is closed for the day. If the fruit is to be kept for any length of time after it is ripe remove the plants bodily, or cut the *Pines* and remove them to a dry, warm atmosphere as soon as they begin to change colour. From this date the latter course is perhaps the best, as the suckers left on the old stools will gain strength and be in the best possible state for potting in February. Where a batch of promising *Queens* were selected last month and plunged in a bottom heat of 90° in a light house they will soon show to an experienced eye whether they are likely to throw up fruit without making a growth, and when this point has been determined more water may be given to the roots; but great care will be needed, as the best of plants may soon be spoiled by over-watering in winter. Keep a moist growing atmosphere by damping all available surfaces, but defer overhead syringing for the present. Plants now resting, and from which a growth may be expected before they show fruit, must be kept cool and dry until the commencement of the new year, when the treatment recommended for the earliest batch may be applied. In succession and sucker pits a general reduction in top and bottom heats may now be made. When fire heat is needed a minimum of 56° to 60°, with a rise of 10° by day will be sufficient. The bottom heat should not sink below 75°, neither should it be allowed to rise above 80°. Pay particular attention to watering, as plants in small pots placed over hot-water pipes soon become dry, and a check produced by the want of water is very likely to cause them to start prematurely when more heat is applied in the spring. Where fermenting leaves or tan are used for supplying bottom heat there is less danger of the plants becoming dust dry, but these should be regularly examined and watered before that stage is reached. Strong rooted suckers that were potted into fruiting pots late in the autumn should be kept near the glass, in a light span-roofed house, where they can have sufficient top and bottom heat to keep them progressing through the winter.

**Figs.**—Although we have not as yet done more than warm the pipes in our early Fig house on fine mornings, the application of warm water to the roots, aided by fermenting material, has set the sap in motion, and the young *Figs* are beginning to swell. The trees are now regularly syringed twice a day, and the temperature is allowed to range from 50° on cold nights to 65° by day. When the terminal buds get a little more advanced the night temperature will be raised to

56°, and as this will necessitate more fire-heat, the daily syringing and watering will be proportionately increased. When young trees in small pots are forced, the most important operation is the supply of water to the roots, as one mistake in this part of the daily routine is almost sure to prove fatal to the most forward, and, as a matter of course, the most valuable portion of the crop. If plunged or placed on a bed of fermenting leaves the latter should be well worked before they are taken into the pit, and when the heat has declined to 80° and the whole mass has been firmly and evenly beaten, place each plant in position with a thin sod of turf under the pot; fill in loosely with more leaves, gradually firm them as the heat declines, and add more until the plunging material reaches the rims of the pots. Old trees in large pots placed on pedestals are not so liable to suffer from an omission in the supply of water, but so important is this operation that the watering of *Figs*, like the watering of *Pines*, should be placed in the hands of a skilful man, who is not likely to be deceived by outward appearances.

**Peaches and Nectarines.**—When the flower buds in the early house commence swelling the pipes may be warmed through the early part of the day to admit of a free circulation of air; but no advance upon the figures given in my last paper need be made until the blossoms begin to show colour, when a few degrees may be added to the maximum on mild or bright days. Old trees having their roots in internal borders will stand a higher temperature than young ones, or others which are planted outside; but the great secret of success in early Peach forcing exists in the maintenance of a low temperature with plenty of air through the early stages of growth. The regular syringing of the trees and walls must have daily attention, but it must be borne in mind that constant saturation of the atmosphere is not good for them, and the last syringing should be performed in time for the young wood to become dry before nightfall. When well-managed, sweet fermenting Oak leaves play an important part in early houses as atmospheric moisture can always be obtained by turning them over when direct syringing on dark, foggy days is undesirable, and the warmth they impart very often renders dry fire-heat unnecessary. If pot *Strawberries* are introduced see that the pots are well washed and dip the heads of the plants in a solution of Gishurst compound, 4 oz to the gallon of water, before placing them on the shelves. It is just possible that they may be free from insects, but prevention is the safest and cheapest course to pursue, as neither syringing nor smoking can be resorted to when the trees are in flower, and many failures follow the attempt to grow two crops where there is only room or convenience for the satisfactory management of one.

**Cherries.**—The early house from which ripe fruit is to be gathered in May should be closed by the middle of the month, and pot trees which have been standing in the open air may be cleansed, top-dressed, and placed upon shelves or borders, where they will not be shaded by the permanent trees. The old *May Duke* and *Black Circassian* are excellent kinds for growing in pots as they come in early, and being portable they can be removed to the open air as soon as the fruit is gathered, when the *Bigarreau*, *Elton*, and other late varieties trained under the roof can have the house entirely to themselves. All preliminaries having been completed, the starting of *Cherries* is a very simple affair, the main point being the maintenance of a low temperature with plenty of air, say 40° at night when artificial heat is needed, and 45° to 50° when external conditions are favourable. If old trees thickly set with blossom buds have been heavily taxed, top-dress with good rotten manure at once; defer this operation where they are young and make vigorous growth. Keep the borders in a healthy growing state by the judicious application of tepid water, and syringe with the same twice every fine day. When from artificial heat or mildness of the season the temperature rises to 55° ventilate freely, close when it descends to 50°.



and resume the minimum figure given above by opening the ventilators more or less every night. If the renovation of borders in late houses has been delayed or fresh trees have to be taken in from the walls no time must be lost in getting the work completed, as trees of all kinds are on the move, and if taken up and placed under glass before frost sets in they will take to the new compost and yield a good crop of fruit next season.

#### KITCHEN GARDEN.

R. GILBERT, BURGHLEY.

DURING the past fortnight Broccoli, Lettuces, Endive, and Borecole have grown rapidly, and should severe weather set in suddenly it will be much more disastrous than if it had been colder and more seasonable. Young Cauliflowers for spring planting, and likewise Lettuces in frames, have become somewhat tender through making such rapid growth. Therefore care must be taken not to expose them to too much frost when it arrives. A few degrees will, however, in nowise harm them. Large plants of Lettuce and Endive should be got into frames or into a cool house. When the plants become thoroughly dry, a few should occasionally be tied up to keep up a succession of good blanched salad. Any of the late Cauliflowers now just turning in should be lifted and placed in a frame or shed where they will be partially protected from frost. The heads of late Cauliflowers thus treated will not be large, but will be very acceptable next month. If early Broccoli, just beginning to button, be lifted now, and placed under glass where a little heat can be given in frosty weather, and likewise abundance of air when necessary, they will produce some fair sized heads, and may be useful should those out-of-doors be destroyed by frost. A deep frame is the best place for them. Plunge them in 6 in. or 8 in. of good, light rich soil, and allow the foliage to be close to the glass. The largest of the winter Turnips should be lifted and stored in a pit out-of-doors, similar to Potatoes, where they will keep much firmer than if stored in a cellar or shed. This is a good time for breaking up old plantations of Seakale and Rhubarb. From the former should be selected the largest and strongest for forcing, reserving the small ones and all the roots for making cuttings for planting out in spring. Rhubarb may now be divided and fresh plantations made; each piece should have a good crown. Some roots may be forced in the open ground by the use of pots and manure, or placed in a frame or Mushroom house, according to circumstance.

#### NOTES AND READINGS.

TALKING to one of our largest nurserymen a few weeks ago who had been investing on a large scale in cool Orchids, and particularly in the Central American species, and remarking on the extent of his purchases, the reply was, "Well, if what is stated respecting the importation of these from their native habitats be true, the probability is that before a very long period collectors will have to come from America to Europe in search of plants, and those who possess stock will then have the best market if the demand continues, and there is no likelihood that such an attractive and useful class of plants will ever become too common or unpopular so long as a love for flowers and their culture lasts." It was impossible to do otherwise than coincide in this opinion, and one is prompted to enquire what has been and is likely to be the result of the constant drain of certain species from those countries where they are found. Orchids like the *Odontoglossum Alexandræ* or *crispum*, for example, do not grow everywhere, it is well known, in the countries from which they come, but are confined to particular localities and certain altitudes, and it is certain enough that unless "pastures new"

are discovered the old locations must within a reasonable space of time be completely exhausted at the rate collectors are fetching the plants away. Tropical or warm-house Orchids having a wider geographical distribution are not likely to be so soon exterminated, although it is well known certain localities have long ago been cleared of certain species. Cool Orchids, on the other hand, are, so to speak, localised. Williams states that *Odontoglossum Alexandræ*, *O. Bluntii*, and many other varieties and species occur only at from 7,000 ft. to 8,000 ft. elevation above the sea, and other species at greater or less altitudes, while some kinds appear to be confined within very narrow limits. It will certainly not tend to cheapen plants in this country if they become lost to the countries where they now abound, and cultivators, at least, need not wish to see the day when that will happen. But unless some means are taken to check exportation, that day is probably not far off, and the time may come when there may be such combinations among the trade as "Orchid rings."

Because "Tea and China" Roses grow till arrested by frost, Provence and Moss Roses make one growth a year, while many of the Perpetuals, Bourbons, and Noisettes make two or more in the season, it follows," says Mr. Fish, "that Perpetuals and other Roses might probably be potted up from out-doors as successfully in July as October." It will trouble Rose growers to see the force of the "follows" here. Does Mr. Fish know whether Roses will pot up in July as well as in October? Did he ever know any good cultivator who would recommend Roses to be taken up and potted from the border at midsummer by preference, needlessly sacrificing bloom, foliage, and roots, and the general health of the plants? The plan is simply a suicidal one to recommend generally. It is a handy and ready plan of getting pot Roses by lifting them from the border, and there are some seven months that the work can be done safely and conveniently between autumn and spring; but meddling with the plants at midsummer, when the shoots are so soft and tender that they would shrivel up before they could be transferred to pots, and when no after treatment would make up for the injury sustained the same year, is a practice never before recommended for common practice, that we recollect, and never certainly on such slender grounds as those advanced. Roses lifted in October and November even require care to prevent the shoots from shrivelling unduly, although they are then comparatively hard and mature. What is likely to happen to them in July when they are so soft that they may be squeezed to pulp between the fingers? As regards lifting Roses with balls for potting, which is also condemned as a bad plan, we do not think Mr. Fish ever saw a Rose lifted with a ball, for the reason that Rose roots have no holding power, and growers never think of trying to get balls with them.

According to Mr. Alfred Parsons' statements, the American fruit growers have a much readier plan of storing and keeping their Apples than we have in England. "He speculates in Apples, and has already 700 barrels stored away in cellars to send to England in spring." This, we believe, is a common plan of storing Apples in the States, and it is a suggestive one and very different from ours, which necessitates so much care and attention without probably any better results, as far as the mere preservation of the fruit is concerned. Would our Apples keep stored in the same manner in this country? Fruiterers say yes; and they state that the American Apples imported are kept in the barrels in which they arrive as long as may be

needful, which is sometimes several months. It is also stated by gardeners who have bought Newtown Pippins in barrels, and stored them away on their fruit-room shelves, that they do not keep so long out of the barrels as in them. It is quite certain that the American system of storing would answer the purpose of many cultivators in this country better than the one we are accustomed to regard as the best.

We have probably a good deal to learn yet on the subject of preserving fruits, and it would be a great convenience to many if some other plan, equally as good as "bottling," could be found for preserving late Grapes. The marvellously plump and firm fleshed condition of the white Spanish Grapes of the shops has always been a puzzle to Grape growers in this country. The foot-stalks of these Grapes are always shrivelled when the barrels in which they come are opened, but time seems to make no impression whatever on the berries, a proportion of which rot, but they never shrivel. The shrunken condition of the foot-stalks and the appearance of the berries, as well as their taste, favour the idea, too, that they are cut and packed before they are quite ripe, so that perfect maturation does not appear to be the most important element in their preservation; but still when nicely cleaned and set up, a dish of these Grapes is quite presentable, and they are so cheap as to come within the reach of most people. They are sweet and refreshing, but have absolutely no flavour; the cork dust in which they are packed for months leaves no perceptible taste.

The instruction being served out to the pupils at the Crystal Palace School is very elementary as well as very excellent, but Mr. Fawkes must have drawn it exceedingly fine if, as has been reported, he showed the exact pitch or angle required for hothouses in every latitude of these islands from the Land's End to John o' Groats. For all practical purposes one pitch of roof for the different seasons of the year is sufficient for any part of Great Britain. Thus, for forcing purposes between November and February a lean-to facing south, and as nearly perpendicular as possible in the pitch is the best; from February till midsummer an angle at or about 45° will do; and for summer work generally a span roof with the roof pitched sharply enough to keep the rain from blowing up under the laps answers best for plants or fruit.

The subject is, however, an important one, and almost unpardonable mistakes are frequently made in the pitch and position of glass-houses for special purposes, and horticultural builders are by no means always innocent in such matters. A range of houses for the winter and early forcing of Cucumbers, pot Vines, and flowering plants, &c., constructed on the span-roofed principle and set with their ends east and west is not, for example, the most ingenious device for catching and economising the sun's rays at this season of the year; but this is the plan adopted by an eminent builder who had a range to build for a nobleman some years ago, and there are plenty of examples like it. Unfortunately, all builders have not mastered the subject so thoroughly as Mr. Fawkes appears to have done.

One of the questions to which horticultural builders have to address themselves more than anything else at present is the style of conservatory construction, so far as it relates to the health and culture of the plants that have to occupy such houses permanently. There are two kinds of conservatories—one which is simply used as a show house and sanatorium, and an-



other and much more common structure which is regarded as a plant house and conservatory combined, many of the trees being planted out in the beds and expected to grow and do well whether the temperature and other conditions are suitable or not. Those who go in for external appearance very often sacrifice both space and utility to that end, many pretentious designs not affording either room or convenience for plants or any other purpose. The kind of structure which permits of the greatest amount of space for all purposes and affords an equal amount of light throughout, and not at the sides only, and at the least cost, is the flat ridge-and-furrow-roofed house with upright sides all round. We have lately seen several conservatories of this kind that were both commodious and adapted for plant culture. The light was so equally diffused throughout, that the smallest plants, like Primulas and Cyclamens, for example, grew and flowered as freely on the floor in the centre of the house as at the sides. Such houses can also be made as ornamental as any one need desire, and there is hardly any style of mansion architecture they may not be made to harmonise with.

PEREGRINE.

## THE FRUIT GARDEN.

### FORCING STRAWBERRIES.

STRAWBERRY plants for forcing require some little preparation. In the first place cut off any decaying leaves, but leave all that are green and healthy; as the surface soil will be exhausted, remove 1 in. or so of it, and top-dress with fresh material, consisting of a mixture of half loam and well-rotted manure used in a moderately dry state. Artificial manures I do not recommend, except in the case of those who have had some experience with them for this purpose. Whatever the soil used as a top-dressing may be, it should be pressed firmly down, sufficient space being left for water. When forcing should be commenced will, of course, depend upon circumstances. In the case of those who have only a limited number of plants and do not require fruit early, the end of February is a good time to introduce them into heat. Those who want fruit earlier should place their plants in a genial growing temperature at once. There is nothing like slow forcing for Strawberries, and to get the best results the plants should be near the glass; therefore, when practicable, the shelves should be suspended from the rafters, allowing a space of 6 in. between the glass and the top of the plants. The shelves, which should be like shallow troughs, should have a strip on each side so as to hold an inch of soil or some other material for the plants to stand upon, thus keeping the bottoms of the pots cool and reducing the labour of watering. Those who have to force them in vineries must not attempt to grow them under the shade of Vines, but should place the shelves where they can be well exposed to light. I do not recommend placing soil or any other material on the shelves for the pots to stand upon at the commencement of forcing, as it keeps them rather too damp, but after the middle of March I prefer to put some Cocoa fibre refuse an inch thick under the pots, as I find it helps to keep the soil more uniformly moist, and by keeping the Cocoa fibre moist it obviates the attacks of red-spider.

**Temperature and fertilisation.**—From December to the end of February a maximum temperature of 55° by day and 48° by night for the first three weeks after the plants are placed in heat will suffice. As soon as the month of March sets in, light will increase as well as the natural temperature, and then they may have a little more heat when first started, but the earliest plants ought not to be exposed to more than 60°, and in that temperature with a rise of from 10° to 15° with bright sunshine they ought to flower and set their fruit; in fact in damp weather it is almost useless to attempt to

set the flowers in a temperature less than 60°. In such weather the little balls of pollen will fall from the anthers without bursting if there is not heat enough to dry up any excess of moisture. During February and the early part of March Strawberry forcing requires to be done with great care. The air of the house must be kept comparatively dry to assist the maturation of the organs of fructification, yet not so dry as to encourage an attack of red spider. Fertilising the flowers is of great importance up to the middle of April. This is best done with a camel's-hair brush, and from the time the first flower is open until sufficient flowers are set, the plants should be gone over every day between twelve and two o'clock and every flower that is in a fit state should be operated on with the brush. If large berries are required, three perfectly formed fruit upon a truss on a single plant in a 6-in. pot is enough, and five fruit for a single plant in a 7-in. pot. We grow two plants in 7-in. pots, and from these we get from seven to nine fine fruit, and I am well satisfied with the result.

**Watering** forced plants of Strawberries when they are grown in large numbers is a serious business as regards labour, especially during April and May. When fine-flavoured fruit is required it entails constant watchfulness, as when it is on the point of ripening any excess in the water supply will impair the flavour. From the time the fruit is set until it begins to show colour there is not so much danger, and during this period the supply of water should be constant and liberal, but as soon as there are signs of the fruit ripening the supply of water must be moderated, so as to keep the plant in a growing state without giving it from day to day more than it can appropriate; in fact, when the fruit is ripening it is better to err on the side of giving too little than too much water. Syringe the plants up to the time when they come into flower, and then cease until the fruits are set. When set resume syringing until they are nearly ripe, an important operation, especially during bright weather in March and April, for unless syringing is vigorously followed up red spider will be sure to attack the plants. Besides syringing it is necessary to maintain a moist atmosphere, except when the plants are in bloom. The floor of the house should be damped down early in the morning, and several times during the day, with this exception, that in dull, damp days less sprinkling of the floors will be necessary. On fine dry days give plenty of atmospheric moisture; on wet ones none.

The temperature to be maintained when the fruits are ripening must depend on the convenience of forcing them. Where there is a proper Strawberry house the temperature during the day in February and March should be 70° by fire-heat, with a rise of from 10° to 15° by sun-heat. The night temperature should not exceed 62°; in fact, the temperature here given will serve for all the conditions under which Strawberries are likely to be forced.

J. C. CLARKE.

### FRUIT SHOWS.

IF any test of the willingness on the part of Apple growers was needed as to the response they would make if a really national exhibition of hardy fruits was organised, it certainly was found in the truly fine display of these fruits at the Royal Aquarium last month. In the two classes for six dishes of dessert and six dishes of kitchen kinds there were at least 200 dishes shown, and not only was the competition thus keen, but the samples throughout were good, rich in colour, and remarkable for size, and yet this display was obtained by the trivial outlay of £12 in prizes. Were the amount increased to £120, an exhibition of hardy fruits might be got such as we have never yet seen. Now and then desires are expressed that hardy fruits should be allied to Potatoes at the Crystal Palace in the autumn, and that desideratum could easily be accomplished were prizes offered, but it would be desirable in the interests of the fruit that the exhibition should be held in the middle of October rather than at the end of September. There is, I believe, a willing-

ness on the part of the directors of the Crystal Palace to increase the extent of the show, but their liberality at present compares indifferently with that of the Royal Aquarium Company, which gave towards the late show of Chrysanthemums and fruit over £70. If the Crystal Palace directors would add £30 more to the amount they subscribe to the International Potato show, to be given for two classes of twelve and eight vegetables in collections, and the Fruiterers' Company and some of our market salesmen and dealers could be induced to offer some £60 or £100 in prizes for Apples and Pears, a marvellous exhibition would be the result. If the Council of the Royal Agricultural Society is so anxious to promote fruit culture amongst farmers, it could not do better than follow up its efforts at Reading by offering prizes also at the Crystal Palace for autumn fruits to its special class of cultivators.

Returning to the fruit at the Aquarium, I was particularly struck with the fine size of some of the kitchen kinds shown, the very largest perhaps being Mr. Fowle's Alfristons, next to which came Stone's Pippin, Gloria Mundi, Reinette du Canada, and Lord Derby. Blenheims were in several lots quite remarkable, and Hollandbury was not only large, but very beautiful in colour. To these I add, as making up a fine exhibition selection at this time of the year, Peasgood's Non-such, a very handsome kind; Winter Hawthornden, very smooth and perfect; Beauty of Kent, striped and fine; Annie Elizabeth, a Codlin-like Apple of good appearance; Cox's Pomona, Small's Admirable and Waltham Abbey Seedling. Earlier—Lord Suffield, Echlinville Seedling, and Warner's King are available; and later—Wellington, Striped Beefing, Northern Greening, Golden Noble, and Dutch Mignonne are good kinds. Of dessert kinds King of the Pippins was the most largely shown, and remarkably good it was. Next came Cox's Orange Pippin, then Court Pendu Plat, always handsome; Ribston Pippin, still often seen in good form; medium sized Blenheims, and Cornish Aromatic, all popular sorts.

To these may be added Adams' Pearmain, like King of the Pippins, but less depressed in the eye; Margil, Scarlet Nonpareil, Cockle Pippin, Rymer, and Golden Reinette. Six earlier kinds are Red Astrachan, Duchess's Favourite, Worcester Pearmain, Irish Peach, Kerry Pippin, and Yellow Ingestre; and six later sorts are Sturmer Pippin, Lord Burghley, Norfolk Bearer, Sam Young, Wheeler's Russet, and Golden Knob. The latter Apple I have seen confounded with Golden Noble, but it is a medium sized, yellowish russet, and a good keeper. It was worthy of remark at the Aquarium that only fruits of medium size were shown in the dessert class. This is evidence that a better taste than what formerly existed prevails, that indeed it is not good taste for a gardener to send fruits as big as cricket balls to his employer's table. The largest, perhaps, were good medium-sized Blenheims, but fruits of the size of Cox's Orange Pippin are most favoured. I observed in some cases Court of Wick shown as King of the Pippins but the former should be known by its very rounded form, smallish size, and very open eye. As a rule it is a little below good dessert size; still it is a brisk, good keeping Apple. A pretty Apple, shown as Millbank Seedling, was not unlike Court Pendu Plat, and was probably the Duchess's Favourite or some flat sample of Worcester Pearmain, because of its close resemblance to Court Pendu Plat. I have not included in the list of dessert kinds Fearn's Pippin, but it is well worth wide cultivation. A bright red Apple named Pomeroy was probably Worcester Pearmain, and Lord Clyde was really Golden Noble. Fearn's Pippin, with colour like a Quarrenden, was curiously enough shown as Winter Orange; and one dish, by D. T. Fish, was much more like fine Ribstons than Warner's King, which it so closely resembles. These few instances serve to show that Apple nomenclature wants rectifying.

A. D.

**Pruning orchard trees.**—"Moreover, trees whose shoots are topped every year with a sharp knife or the scateur never need what the advo-



cates of letting them alone call pruning, i.e., cutting out several faggots of wood from a large tree, an operation that usually gives it a check, from which it does not recover for several years." I take this from Mr. Groom's article on "The Apple" (p. 551). Will he oblige me by stating where the advocates of moderate pruning have recommended the kind of "faggot" pruning here mentioned? The "letting-them-alone" people do not prune at all, I suppose.—J. S. W.

**Mr. Bushby's Grapes.**—Permit me as one who had charge of Mr. Bushby's vineyard for nearly two seasons, viz., those of 1879-80, to state that what "W." asserts in THE GARDEN last week is contrary to fact. No housemaid or domestic of any kind attended to the vineyard in question except myself. I have looked to the fire before six in the morning, and have been to the house several times during the day for the purpose of airing and closing up in the afternoon. I also did the stoking till ten o'clock at night. If "chopped up turf for speculative purposes is not evidence," surely being paid a certain sum per week for attending to the vineyard is strong evidence. I may also state that there were two keys—one carried by the owner of the vineyard, the other by myself. Previous to my taking charge, the vineyard was attended to by a young man from Dalkeith Gardens. My successor in the same gardens has grown the crop of fruit this past season. It is useless for "W." to persist in maintaining assertions which are not consistent with fact.—L.

—Mr. Spyer's account of Mr. Bushby's Dalkeith Vines is amusing. Some twenty-six years' success, according to his own confession, is to be attributed to the thinning of the berries, pruning the shoots once a year, a little loam put to the border originally (for it never was all loam, nor near it), and the attentions of one who for nearly half the above period has been living 30 miles distant! The border in Mr. Thomson's time was quite narrow: it is now nearly three times its original width, and to my question, put to Mr. Bushby himself, the answer was "the border consists of the natural soil, except the cow manure put to it. I found the roots extending into the vegetable ground, and was obliged to give it up to them." These are Mr. Bushby's words last September or something exactly to that effect. W. [Here, we think, this discussion should stop. We have evidence in various places that where the natural soil is good, and the bottom also right, Grapes of the highest quality are regularly produced without any special border making, but these conditions do not occur everywhere.]

**Profit on fruit growing.**—"Twenty-five years have I been a fruit grower, and only one year in that time has the produce paid the wages, leaving out of the question manures, repairs, interest on capital, &c.," so runs the statement (p. 554). Now one of two things must be certain. Either that he who made this statement does not depend upon fruit growing for a living, or that he is very rich, or he could not go on for over twenty years losing money. Suppose a tea dealer telling us that for over twenty years he had been selling tea for less money than it cost him, and that over and above that he had his rents, rates, and taxes to pay and to live out of the concern, would anybody believe him?—OLD MORTALITY.

**Keeping fruit.**—In answer to "J. C. F." (p. 554) allow me to state that Pears here are all ripening from a month to six weeks earlier than usual. Winter Nells was sent in for dessert on November 15, Easter Beurré on November 20; Huxley's Victoria and Prince of Wales before those dates; the latter poor in flavour with us this season. Glou Morceau was ready a week ago. Our Grapes are keeping very well. The roots of the Vines are all confined to outside borders. Gros Colmar, West's St. Peter, Black Hamburgs, and Muscats are our late kinds. Muscats ripened by the middle of August have kept better than others ripened later. But I may say that we study to have all our Grapes fully ripe by the end of August. We find that our best keepers are by the side of the boiler-flue at the back wall of the

vineyard; they set best, and are also superior in flavour and colour to any of the others. The success of Grape keeping lies in early ripening. We pay strict attention to the interior of the house, being careful about damp in any shape. We do not allow a single drop of water to be spilt if possible. On damp days we keep a free circulation of air by having the pipes gently heated, and a chink of air at the top of the house. If these conditions are strictly attended to it matters not in my opinion whether the roots be in or outside of the vineyard.—J. W. B., *South Notts.*

**Neglected orchard.**—I am in possession of an orchard which has been grossly neglected. Many of the Apple trees are nearly prostrate, and have pushed from the upper surface of their almost trailing trunks a small forest of shoots, some of which are quite thick. Should these be cut away or not?—PRYUS.

**Pines in pits.**—Will some of the readers of THE GARDEN say if I can grow and ripen Pines in a pit 7½ ft. by 7½ ft.? What varieties should I grow to have them ripe by October? and when should they be started?—C. L.

**Lemons and Oranges.**—Can I ripen these in a vineyard heated in spring only? and what sorts should I grow?—C. L.

**Grapes for a cool house.**—What white Grape will do well in a cool greenhouse with Black Hamburgs? I have no heat.—A. D. P.

**Scale on Pear trees.**—Cash.—Try the effect of paraffin oil.

## THE KITCHEN GARDEN.

**Mushrooms indoors.**—I saw at Worksop Manor the other day three successional beds of Mushrooms—a grand sight—grown upon the cool and dry system. The central bed seemed to be attacked with a white mould, which, if not destroyed, killed the young Mushrooms on coming up, yet the three beds seemed to be soiled alike, and the temperature the same. At Carlton House I saw another Mushroom bed, likewise in grand cropping order, but managed upon quite a different system both as to situation and cultivation. This bed occupied five or six lights of a hot-water pit, and the Mushrooms were coming up in clouds, like those in the house at Worksop, but here they were grown upon the steaming system, with a temperature of 65°, and everything saturated with moisture. The soil used at Worksop Manor was fresh loam, while that at Carlton was good garden soil.—M.

**Salting Asparagus in winter.**—Mr. Muir, in his excellent advice on the mulching of Asparagus (p. 525), recommends salting the crowns. To those about to adopt this practice may be given *Punch's* famous advice to those about to marry—"don't." Why not? it may be asked; well, it may kill the roots. Salt is good, but salt given to roots in a dormant or semi-dormant state may pickle rather than stimulate them. Several years ago the whole crop of Asparagus in a large garden was killed by an overdose of salt in winter. Where, from the smallness of the doze, little or no injury may be done, still salt applied in winter is mostly wasted. It speedily dissolves, and passes through the soil, and there is an end of it. The best seasons to salt are in the spring, when the Asparagus is coming through, and any dripping time during the growing season, and then a very slight dressing suffices, for though the Asparagus is a semi-marine plant salt on or in sand is a widely different thing from salt in the rich soils of our kitchen gardens. Slight dressings, however, are useful; in the spring they clear off slugs and snails (which are often destructive to the young buds) from the surface of the beds as well as act as a useful stimulant to the roots. Throughout the growing stage salt may also prove useful, though many of the most successful growers seldom or never use it. Mr. Muir's advice about mulching is excellent, barring the salt. He says Asparagus is hardy. No doubt that is the general opinion, but the past winters have killed thousands of plants nevertheless, and hence the value of Mr. Muir's timely advice to mulch the crowns with rich manure. It is even found safer in the presence of such winters as we have had lately to leave

the exhausted earth under the mulching till the spring. It may then be removed, and fresh mulching and top-dressing of soil applied, thus affording the Asparagus a double fillip for its great work of producing fat heads in plenty for the table, and to spare for monster growths, to lay the foundation wide and deep for yet better edible produce the following year.—D. T. FISH.

**Gladiator Pea.**—I observe that *Gladiator* is said to continue bearing for eleven weeks—no great achievement for a new Pea, I consider, seeing that in this garden, at the same time of year, we gathered over as long a period from that old kind, *Ne Plus Ultra*, and would have continued to gather longer had the October gale not prostrated the plants.—J. C. F.

**Under gardeners' dwellings.**—If dwellings for under gardeners were provided on the principle suggested by Mr. Long (p. 499), much good would be the result, but bad dwellings and no comfort are the rule, and consequently the inmates betake themselves to the village alehouse. They have little inducement to stay at home; now and then, however, we hear of model "boothies," and heartily thank those who provide them. I have seen some of the best, and have been an inmate of some that were anything but what they should have been. One I remember was placed at the back of the vineries where the inside border was 4 ft. or 5 ft. higher than the bothy floor. The wall consequently was always damp; "colds" were the order of the day, and rheumatism followed. The young man, therefore, who feels that he is worth his salt, and has no taste for serfdom, will, if blessed with commonplace prudence, be satisfied as to the bothy before he accepts employment in a garden. A SURREY FOREMAN.

**Collecting alpine plants.** I purpose making a fortnight's tour to Switzerland next summer, chiefly with the object of collecting alpine plants in their native haunts. Can some of your readers give me some hints as to the best time to go and the places to visit, &c.? I should also like to know by which route I should return, as travellers are not allowed to carry plants through France, for fear of introducing the *Phylloxera*.—GLENGALL.

**Hydrangea paniculata grandiflora.**—(*Camden Road*.) Apply to one of the London nurseries.

**Osiers.**—R. G.—Try Mr. Sealing, Basford, Notts.

**E. T. Yates.**—We have no room for questions not relating to horticulture.

**Names of plants.**—*Moss*.—1, *Eupatorium riparium*.

—*Cash*.—1, *Centaurea montana*; 2, *Pulmonaria mollis*; 3, *Dendrobium linguliforme*.—*J. E. M.*, *Mollusc*.—The fungus is one of the more numerous in Earth stars or stony Puffballs; it has been named *Gastero rufescens* from its bright brown colour.—*W. A.* A good form of *Cypripedium insigne*, but not *Chantidia*.—*W. H. Watson*. *Polystichum aculeatum*.—*B. P.*—1, *Lactuca dilatata*; 2, *Polystichum aculeatum* variety; 3, *Lactuca Filix mas*; 4, *Polystichum aculeatum lobatum*; 5, apparently *Cyrtidium foliatum*.—*W. T.* *Tristichia*.—*G. H.*, *Barb. list*.—Apparently *Celsia erecta*.—*J. S.*—*Asparagus decumbens*.—*F. R. S.*—*Zygocotyledon Mackayi*.—*Arauc.* Ferns with wood labels attached—1, *Nephrolepis exaltata*; 2, *Cyrtidium foliatum*; 3, *Polystichum aculeatum*; 4, *Nephrodium molle*.—*Mrs. W. P. M.*—*Jasminum hirsutum*; *Justicia speciosa*.—*G. Broomer*.—The spindle tree (*Eumonymus cuneatus*), a native of Britain, easily grown if not shaded by larger trees or shrubs.

## OBITUARY.

**MICHAEL WATERER.**—Mr. Michael Waterer, we learn from the daily papers, died at Bagshot on the 1st instant. He was long a member of the firm of John Waterer & Sons, of Bagshot.

## COMMUNICATIONS RECEIVED.

J. G.—C. L.—J. A. & Son—P. G.—D. & Co.—J. D.—Herbist—W. T.—W. T.—C. E. P.—J. C.—J. S.—W. T.—Mrs. W.—R. G.—W. B.—C. A. E.—W. D.—J. W.—J. C.—C. E. T. Y.—J. S. W.—Z. E. T. Y.—T. B.—J. D. S.—E. W.—G. I.—W. P.—G. H.—W. H. C.—E. K.—W. J. M.—G. P.—G. S. B.—A. K.—W. G. F.—O. P.—Mac—W. S.—J. S.—D. T. F.—Mac—C.—A. D. P.—W. A.—D. A.—R. D.—J. B. D.—B. C. R.—A. H.—J. B.—J. C. F.—T. B.—J. S. W.—P. J.—E. J.—J. W. B.—A. W. S.—L. W. G.—J. H.—E. S.—A. C. R.—Cambrian—Old Mortality—T. C. B.—W. N.—K. & Co.—J. S. & Sons—S. R.—J. C.—J. E. W.—B.—J. O.—R. M.—D. T. F.—W. P. M.



"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare*.

## OUR ROSE GARDEN.

A BRIGHT, sunny kitchen garden is always one of the attractive features of a country house, and seldom fails to repay any trouble expended upon it. During the last few years we have given much time and thought to ours, which is an old-fashioned Sussex garden, situated at the foot of the South Downs. It abounds in great grey-stemmed Apple trees, with their hanging branches covered with Lichen, and which are more ornamental than useful, seldom bearing any quantity of fruit. Gravel paths we have in plenty, and nothing can beautify these more than neat borders, planted with a miscellaneous selection of hardy spring and summer flowers, backed with good dwarf Rose trees.

Our centre walk has been universally admired this year, and this is mostly owing to the beauty of our Rose crop. It is a long, straight path, at the commencement of which we have trained a Gloire de Dijon Rose into an Apple tree on either side. From these spring two continuous rows of Rose bushes, mostly deep crimson and pale fleshy-pink varieties, planted 3 ft. apart in an imported soil of rich loam and clay. Close behind these, at a distance of about 15 ft. from each other, are rustic Fir poles, some 12 ft. high, the top of which climbing Tea Roses soon reach, and make a very striking feature. In front we have all kinds of plants—Orange and Silver Phoenix Narcissus, Scillas, blue and white, Jonquils, Cloth of Gold Primroses, double white Pyrethrums, Anthericums, intermixed with a great many Carnations, all of which do uncommonly well, especially a very large flowering Italian variety, Garofani di Angerini. These plants we sent from the Riviera di Levante in a letter as unrooted slips two years ago, on one of which last summer we counted 65 blossoms all open at one time. In the centre of the garden, half way up our Rose walk, four roads join. Here we have erected a sort of square four-arched arbour, composed of rough Fir poles, and made in imitation of the Vine-clad "pergola," so often seen in Italy. The Vine, to flourish in perfection, requires more sunshine than we can ever supply, but an excellent substitute may always be found in our English Hop, which, with its massive leaves and pendent fruit, can almost vie with the beautiful Grape Vine of the south. Among the very best red Roses may be named Reynolds Hole, Xavier Olibo, Madame Victor Verdier, Charles Darwin, Lord Beaconsfield, Abel Carrière, Jean Liabaud, Louis Van Houtte, Fisher Holmes, Marie Baumann, and the Duke of Edinburgh. As for the pale pinks, none do better than Captain Christie, Marie Finger, and the sweetly-scented favourite La France. Jules Finger has a good flower of the Captain Christie type, although somewhat paler in tint, while for a pure white Rose none surpasses Mabel Morrison. Teas and Noisettes are very prolific with us, and all thrive in the open air, with the exception of Maréchal Niel. Probably the best of all the non-climbers are Perle des Jardins, Jean Ducher, and the smaller variety Madame Falcot.

In recommending creepers, we should especially advise Belle Lyonnaise, Madame Berard, Cheshunt Hybrid, and Climbing Devoniensis, all of luxuriant growth; while Bouquet d'Or, Reine Marie Henriette, Lamarque, and Rêve d'Or, with its beautiful foliage, are almost

equally good. Climbing Jules Margottin makes a useful, showy creeper; and Ophiré, with its abundant little copper flowers, is by no means to be despised.

A few Moss Roses should form part of every collection, for the sake of their lovely buds. Of Blanche Moreau we cannot yet speak from experience, but Centifolia muscosa alba and White Bath are both charming varieties. R. K. D. Midhurst.

## ROSES IN ORCHARD HOUSES.

Yes, that is exactly what I mean; not that orchard houses should be converted into roseries under glass, though that might often be done with pleasure as well as profit, but that Roses might be planted with the fruit trees, and both do remarkably well together. Standard or bush Roses might be planted among the trees, alternated with or mixed in any desired proportions, or the centre or side borders might be fringed with Roses, thus happily blending beauty with utility. In cases, however, where both fruit and flowers are converted into money, it would very probably be found that the most valuable portion of the produce would be the Roses. Then there are the side and end walls and the roofs of orchard houses. How often these are found comparatively cold and bare, especially where the fruit trees are grown in pots or the pyramidal system of training is adopted. These furnish admirable places for the cultivation of Tea and other Roses. The roofs of orchard houses especially are the choicest positions for such magnificent Roses as Maréchal Niel and Niphetos. As a rule these roofs are furnished with Grape Vines; the crops ripen late, and have little or no commercial value. This season especially, owing to the enormous influx of good Grapes from the islands of Guernsey and Jersey, common-place orchard house Grapes could hardly be given away in London and other markets, but good Roses will always sell freely, and the roofs of orchard houses furnished with these would not seldom fetch more money than is received for the entire fruit crop of the house; in private gardens one often hears of an embarrassing glut of fruit, but who ever heard complaints of too many Roses? Roses may be cut from the roofs of orchard houses in April, and almost all the year round. Under glass the Maréchal Niel seldom yields more than one good crop of bloom, but these are magnificent alike in quality and quantity. They are also very early, but such perpetual bloomers as Adam, Niphetos, Isabella Sprunt, Gloire de Dijon, Rosea alba, and many others flower on and on for ever under glass; so that, judiciously furnished and fairly well cultivated, the orchard house roofs and walls would hardly ever be without Roses. But what of the aphides, thrips, and red spider? Briefly, prevent them by high culture, or, in other words, grow Roses so well that insects will hardly get a foot-hold on them. Insects, as a rule, tread sharply on the heels of neglect, and revel on plants already weakened through starvation or enfeebled by disease; and should any of the above or other insects pass from the fruit trees on to the Roses, stamp them out at once. Tobacco smoke and the garden engine are the surest and swiftest remedies for all living pests that infest Roses. Should mildew appear, sulphur dusting is the best remedy; but planted in good soil, carefully managed Roses are as cleanly as fruit trees under glass, and in general terms it may be added that the treatment of the latter is likewise that best adapted for the Rose. D. T. FISH.

## ROSES FOR TOWNS.

THE National Rose Society's meeting at Sheffield in July last must have been refreshing to the inhabitants of such a smoky town as that is. Thousands of lovely blooms were then brought from all parts of the country for the be-clouded citizens to see what pure air can do for the Rose. But while the display cheered the hearts of many

of the Rose growers in and around Sheffield, it could not but discourage some. And this is not to be wondered at; for, after taking home all the kindly advice given by Canon Hole in his instructive lecture, and acting upon it, they with other growers in large towns have difficulties to combat against of which we countrymen know little or nothing. It is to the growers in such towns and under such adverse circumstances that I now tender a little advice. The first and most important thing is to make a selection of such varieties as resist to a great extent smoke and impure air, and these will be found to be kinds having hardy constitutions and glossy foliage, such as Paul Neron, Dupuy Jamain, Cheshunt Hybrid, Gloire de Dijon, Auguste Rigotard, John Hopper, Madame Victor Verdier, Mdle. Marie Finger, Etienne Levet, Jules Margottin, Francois Michelon, Reynolds Hole, Duke of Edinburgh, Climbing Devoniensis, Belle Lyonnaise, Madame Berard, Dr. Andry, Alfred Colomb, Baronne de Maynard, Boule de Neige, La France, Charles Lefebvre, Countess of Rosebery, Comtesse d'Oxford, John Stuart Mill, Mdle. Annie Wood, Madame Clémence Joigneux, Madame Hippolyte Jamain, Marquise de Castellane, Victor Verdier, Sénateur Vaisse, Star of Waltham, General Jacqueminot, Céline Forestier, and others. With such good town Roses as these to choose from, why select delicate growers which require all the care and attention which the open country affords to be satisfactory, and if planted in towns only lead to disappointment? Among those which will not thrive in towns are Horace Vernet, Marie Baumann, Louis Van Houtte, Ferdinand de Lesseps, Constantin Tretiakoff, Monsieur E. Y. Teas, Xavier Olibo, Madame Noman, Mdle. Bonnaire, Lord Macaulay, Prince Camille de Rohan, Thorin, Duc de Rohan, Mdle. Eugénie Verdier, Hippolyte Flandrin, Madame Furtado, &c. From this it will be seen that some fine acquisitions in the way of Roses are unfit for town growers. Indeed, Roses with rough leaves and delicate constitutions cannot thrive in the atmosphere of our large towns. Thick, non-porous leaves are not easily injured by smoke and dust, which they throw off more readily when washed by rain than those just named. I should, however, in all cases recommend syringing or sponging frequently during the growing season, for I need scarcely say that plants cannot thrive if covered with dust or dirt.

Beeston.

W. H. FRETtingham.

**Rose shoots in December.**—I send a shoot of Sultan of Zanzibar Rose, just to show what a dangerous state Roses are running into. They tried long to resist the exciting allurements of this unprecedentedly long St. Martin's summer; but at last these have proved too much for the resting and resisting powers of the Roses, and now, as will be seen by the accompanying shoot, they are broken into leaflets along their entire length. Should this mild weather last much longer, another, and it may be a worse, wreckage than ever is all too probable. All that is possible should be done to protect tops and bottoms from the frost that can hardly be far off, and may be close on the heels of this summer-like weather. In earthing up some dwarf Roses to-day (Dec. 3) the long white spongioses were found in active growth within an inch or so of the surface. Possibly the rupture of a few of these in the process may help to check these unseasonable top growths, though surfacing mulching, earthing up, and top protection, as recommended recently, seems about all that can be done; and all these will hardly carry Roses through an ordinary winter in their present excited and growing condition. In all my experience I never remember anything to equal it. It also shows how readily Roses fall into perpetual growing and flowering ways when the climate is favourable. —D. T. FISH.

**Mr. Bennett's Roses.**—Will Mr. Fish or some one else kindly inform me and other readers of THE GARDEN what has become of Bennett's pedigree Roses—how they are succeeding under glass either in pots or borders? It was stated that parties were to erect houses (in England) on a



large scale for the growing of one or two of them for the cut blooms. What has been the result?—S. F. TERWILLIGER, *Saratoga Springs, N. Y.*

#### ALPINE PLANTS AND SOIL.

I QUITE agree with Mr. Wolley Dod about alpine plants and soils. There are abundant reasons why a plant should be found on a certain soil in a certain district in its native country, and yet in another country do perfectly well on the soil to which it was supposed to be averse. Many of the plants enumerated lately in *THE GARDEN* as disliking lime or different soil may be seen by anybody who observes much in collections thriving perfectly well in the soil they are supposed to dislike. I admit there are certain limitations, and that limy soil is offensive to certain plants, but they are few in number, and there could be no greater mistake than adding a further complication to the culture of plants, which has never yet been made as simple as it might be. For ages these lovely plants have been kept out of our gardens through absurd ideas as to their culture being impossible. These not only occurred in books, but were illustrated in our public gardens, from Kew to the smallest provincial one. When one saw a few alpine flowers they were mostly coddled in a frame, and when a rock garden was made it was so made that nobody ever saw a true alpine plant upon it. Eventually, Nettles or Briers generally covered its disgrace. It is only now when people are beginning to get the true idea that a great number of alpine plants are grown as easily as any other plant, if they escape insect enemies, and are not shaded by coarser plants, or kept dry at the root, as they usually are in the ill-constructed rock gardens which have hitherto been the rule rather than the exception. Let it not be forgotten that our gardens abound in browsing slugs, wire-worms, and other destructive little beasts which are often absent from the high Alps and from poor heathy places. If any one really has evidence that a plant will not do with a limy soil, let him say so by all means, but let it not be said because the plant is found on a limy patch or limy district abroad. There may be a variety of conditions which may cause it to thrive upon one kind of soil abroad which will not obtain at home if we plant it in that soil and give it fair advantages in other respects. Let each plant that we suspect to dislike a particular soil be tried—several examples of it—in that soil, and give it a fair chance in other respects, taking care to ascertain that its death, if it should occur, is owing to soil alone. My own experience is that an enormous majority of alpine plants thrive with the greatest freedom in what we call ordinary soil if fully exposed to the sun and rain, and not over-crowded by coarser plants. There are, no doubt, conditions in our lowland gardens which will prevent a great number of the finer kinds from being grown well, such as our winters, which keep the plants growing when they would be at rest in their native countries. But this new chemical notion is likely to do harm, unless based on actual observation and comparison of a number of cases in gardens.

V. H.

#### ON THE HUDSON RIVER.

WE print a few extracts from a private letter from Mr. A. Parsons, dated

"Catskill-on-the-Hudson, November 15.

"At last I have managed to get up the Hudson, rather late in the season, but in time to see the lingering remains of the autumn

colour. It is cold weather with bright sunshine, and enough clouds about to make sky and mountains look interesting. I am staying with some friends here in a little wooden house surrounded with fine old red Cedars, through the grey stems of which I see the blue range of the Catskills about ten miles away, and the Hudson winding down from Hudson City on the other side of me. It is lovely country; the river is far more interesting than it is lower down by the Palisades, and the trees and plants are better than I have seen them anywhere else over here. The red Cedar takes my fancy immensely; in rocky places it grows as a prim dwarf tree, nestling into the crevices and cracks, and where it gets more soil it grows up with a straight grey stem and a pyramidal head, sometimes warm green and sometimes quite blue with berries. Of course it is a Juniper of some kind. The trees of it near the river are often festooned with the scarlet and orange berries of the Bitter Sweet (*Celastrus*). The way the berries split reminds me of the *Euonymus*. The fruit of the Poison Ivy is very handsome too—a bunch of grey-green berries, and that and the Virginian Creeper and Wild Vine and Prickly Smilax (I suppose it to be a *Smilax*) climb over many of the trees. I walked up a creek to-day and in a sheltered corner found several blossoms of a delicate little white flower which they call *Anemone*; it looks like a *Thalictrum* in the growth and leaf. This is the size and shape of it.



I should like to know its name and whether it usually flowers at this time. . . . Not one single person have I met with who seems to care for the wild trees and flowers. I suppose they are all too busy to look after such things. I feel much too confused by the newness of everything to be able to do much sketching, and now it is far too cold to hold a brush, but it would please me very much to come here and paint these grey-stemmed old Junipers and their pyramidal heads, and the green columns of *Arbor-vitæ*. We may get a warm day or two yet after this cold snap is over. I long to do a huge work of all the trees of the world growing in their own homes. Do you think that life would be too short? Such subjects as the Chestnuts near Chiavenna, the Larches above Saas, and these Junipers suggest an immense scheme. But, after all, I have to be a landscape painter.

#### ENGLISH NAMES.

In our attempt to support the legitimate wish for English names on the part of those who have not, so to say, been brought up on technical terms in a strange tongue, we have been met occasionally by the remark that such a plant cannot bear the English name of, say, a Lily or a Rose, because it is not technically so in botanical parlance. Now, here is proof of people offering an opinion in print on a subject to which they have not evidently paid the least attention,

or if they have, ignoring the fact that most English names are based on the very practice they object to. It is not a question of argument at all; one can hardly glance into a garden without seeing plants that have been named upon this very principle for ages, whether it be the Lily of the Valley, the Christmas Rose, or the Sea Lavender. What is more natural or scientific in a sense than to group a series of genera together, as people have done, which are not distinctly allied? We know that to the *Lilium* belong the name, technically, of Lily, but it is quite legitimate to do what the people have done for ages, and include other plants nearly allied and having the same look, so to say, under the same name. Very often we find the botanist doing a similar thing. He finds two genera are near each other; some new species breaks down the supposed wall between them, and henceforward they are all included in the same name. Here are a few examples of English names which illustrate the point of this note:—

Christmas Rose ( <i>Helleborus</i> ).	Rose Rose ( <i>Helianthemum</i> ).
Lily of the Valley ( <i>Convallaria</i> ).	Sea Holly ( <i>Eryngium</i> ).
Bee Balm ( <i>Monarda</i> ).	Spurge Laurel ( <i>Daphne</i> ).
Winter Aconite ( <i>Eranthis</i> ).	Strawberry Tree ( <i>Arbutus</i> ).
Adam's Apple ( <i>Citrus</i> ).	Water Plantain ( <i>Alisma</i> ).
St. Bernard's Lily ( <i>Anthericum</i> ).	Willow Sweet ( <i>Myrica Gale</i> ).
Sea Lavender ( <i>Statice</i> ).	Bog Violet ( <i>Pinguicula</i> ).
Lent Lily ( <i>Narcissus</i> ).	Box Holly ( <i>Ruscus</i> ).
Water Lily ( <i>Nymphaea</i> ).	Corn Marigold ( <i>Chrysanthemum</i> ).
Thorn Apple ( <i>Datura</i> ).	Cow Parsnip ( <i>Heracleum</i> ).
Mountain Ash ( <i>Pyrus</i> ).	Water Elder ( <i>Viburnum</i> ).
Bay Rose ( <i>Epilobium</i> ).	Cushion Pink ( <i>Armeria</i> ).
French Willow ( <i>Epilobium</i> ).	Michaelmas Daisy ( <i>Aster</i> ).
French Honeysuckle ( <i>Hedysarum</i> ).	Head Nettle ( <i>Lanum</i> ).
Grape Hyacinth ( <i>Muscari</i> ).	Earth Chestnut ( <i>Banum hexuosum</i> ).
Marsh Marigold ( <i>Caltha</i> ).	Evening Primrose ( <i>Oenothera</i> ).

Thus it will be seen to be a fact that our best English names are formed on this principle. In giving the English names of popular plants we cannot have one rule, because the particular feature or association which may christen the plant, so to say, can only determine what is to be done in each case. We show by the above that giving the name Plantain Lily to *Funkia* is justified by the long-established habit of the English language, and is as good a name, according to the custom of English names, as it is apt and characteristic from the descriptive point of view.

#### WORMS IN GARDENS.

If you will admit the criticism of one who has read no more of Mr. Darwin's book on worms than that contained in your review of it, I should like to know upon what grounds he advocates the encouragement of worms by horticulturists. My experience of them is anything but favourable, and common sense tells me that to rear a worm I must supply as much plant food as would grow a very much greater weight of vegetables. We know, from the dimensions of the stomachs of ruminants, that enormous quantities of vegetable food are consumed by them to produce relatively small quantities of flesh, and it seems to me that the same fact must hold good whether the flesh is formed directly from the earth, as by worms, or indirectly by ruminants. As for the top-dressing the soil receives from worm casts, if earth exhausted of its humus, &c., is better than fresh soil, doubtless the top-dressing does good; but I really cannot admit the value of this reasoning in the face of the fact that only a few weeks back some writer in *THE GARDEN* stated that he had tried worm casts as soil, and found them useless. The very slight trituration that the particles of soil must receive in their passage through the worm appears to me to be the only possible good effect they produce; while as for their levelling action, a good thunder shower would and does do more in that line than all the worms the soil feeds. My experience is



that in poor soil worms are nearly, if not altogether, absent; therefore, to evidence rich soil full of worms as proving their beneficial action upon it seems like mistaking cause and effect; the soil might be inclined to claim its fatness as the cause of the worms' presence, and not *vice versa*. Worms are, in fact, in my opinion objectionable and in gardens useless. What say your readers—practical gardeners?

LONDON STONE.

#### FROM MR. HOVEY.

**Nyssa aquatica.**—I am pleased to see your very appreciative notice of this beautiful tree, of which I gave an account in THE GARDEN a year or more ago. It is not only the most brilliant of all our trees in autumn, but the deepest, glossiest green in summer, coriaceous almost, or quite equal to the Camellia. Are you not in error in saying it is from Japan? Michaux described it in his "North American Sylva" almost a century ago, and so far as I now recollect I do not know that Japan has furnished any species of *Nyssa*. Michaux enumerates four species as natives of America, viz., *N. aquatica*, *N. grandidentata*, *N. capitata*, and *N. sylvatica*, but I have never seen either of the last three, except a tree I received from Belgium twenty years ago as *N. villosa* is one of them under another name. This last is a fine tree, but a very slow grower, and with slightly larger foliage, not so fine a green, and does not colour up so well in autumn. I am inclined to think it is the same as the *N. capitata* of Michaux, which never attains a large size. The *Nyssa aquatica* is quite a rare tree in cultivation, as it is difficult of propagation in the ordinary way. The seeds require two years to vegetate, but I have succeeded in obtaining quite a number of young trees by gathering the seeds, which are enclosed in a bright blue berry, before quite mature and planting immediately. It well deserves a prominent place in every plantation, as undoubtedly one of the finest of all "pictorial" trees, whether for its summer or autumn-tinted foliage or its peculiar shape, which is often very unique, the head assuming the form of an umbrella. One tree I raised from seed in 1860 is now about 30 ft. high, branched within 6 ft. of the ground, the lower branches spreading 15 ft. It fruits abundantly every year. Emerson describes it as *N. multiflora*.

**Simultaneous frosts.**—It seems quite remarkable that the first frost of the autumn should have occurred about the same day in England and in America, October 5. With us it was one of the most sudden, unexpected, and killing frost ever experienced at that date. The previous evening, the 4th, the thermometer at sunset was 60°, warm, calm, and as pleasant as summer, with the garden quite as beautiful as any time in August. Some time in the evening it began to breeze up from the north-west, and at 10 o'clock, when I first knew that the temperature had fallen more than usual, the thermometer indicated 48°, a good way from freezing and not thought at all dangerous. At midnight it was 47°, but at six o'clock on the morning of the 5th it was 30°, a fall of 30° in twelve hours. There was no white frost, but a general freeze, as was conspicuous enough after sunrise, everything at all tender or not sheltered by trees being blackened and dead. The single Dahlias and D. Juarezi, magnificent specimens, at sundown were dead to the ground as soon as the sun shone on them. Even Chrysanthemums were quite destroyed, probably by the sharp cutting wind more than the cold. A few miles from the city the temperature fell to 22°, 24°, and 26°, and the Apples were frozen on the windward side of the trees. There was general

destruction everywhere. Many amateurs, the weather had been so warm, had not taken in their choice plants used for decoration around the house, and others had not taken up their Pinks or Roses, which were quite seriously injured. Ordinarily we have a slight white frost which gives warning of cooler weather, but this time it surprised the most careful and weather-wise in its severity. A few Chrysanthemums in the ground standing in a windy situation were about as badly blackened as the Dahlias. Thousands of pounds of Grapes and bushels of Peaches were utterly ruined, and Apples frosted on the trees in many places in New England.

**The Silver Maple.**—You speak of the leaves of the Silver Maple (p. 420) "as being conspicuous, their colour being vivid vermilion on a yellow ground." Having two rows of these fine trees 1100 ft. long, forming a fine avenue in front of my house, planted thirty years ago, and now 30 ft. to 60 ft. high, from which the leaves have been falling since the frost of October 5, I think the tree alluded to cannot be the Silver Maple (so called) or Riva Maple, as I never saw a leaf with any vermilion in it. They are always of a pretty uniform pale yellow, occasionally a real chrome yellow similar to the Norway. I infer the tree must be the red or scarlet Maple, with deep red, vermilion, or scarlet leaves, sometimes of either or all colours, and again edged or streaked with yellow; the most conspicuous and universally brilliant tree of our forests.

Boston, Mass.

C. M. HOVEY.

#### EDITOR'S TABLE.

**A BEAUTIFUL WINTER PLANT.**—Fine as is the old *Eucharis amazonica*, *E. candida* is no less valuable. Ladies like it better for bouquets and personal adornment because, while no less good in form, it is smaller and more manageable. The purity of the white, the perfect elegance of form, and the pretty green-tipped buds go to make it one of the most precious plants we can have in the indoor garden in winter. Messrs. Shuttleworth, Carder, & Co., of 191, Park Road, Clapham, have imported this plant by the thousand. The flowers they send are from imported plants, and may be expected better from well home-grown plants. Some harm has been done to the reputation of this plant by another and much inferior plant—*Calliphurra subdentata*, which, however, may be readily distinguished by the long-necked bulb of *E. candida*, while that of the *Calliphurra* is rounder and shorter, and its flowers, moreover, are more like those of a *Criminum*.

**ZONAL PELARGONIUMS.**—The most brilliant flowers of the season are undoubtedly these. Their true function is not the decoration of the open garden, but the enlivening of our winter greenhouses. Here, sheltered from the rains and storms, which frequently mar their beauty in the open air, they are the most free-flowering, cheery, and vivid of plants. They do not travel very well as cut flowers, at least they do not last very long after travelling, but they are admirable for effect and for their now delicate and brilliant variety. A bunch showing the newer and finer types comes from Farnborough Grange.

**THE BURFORD LODGE BLUE VANDA.**—The fine large blue form of *Vanda cœrulea* to which we recently drew attention is, we believe, known as the Burford Lodge variety. For a shoot of this with nine lovely blossoms we have to thank Sir Trevor Lawrence, whose collection includes the several forms of this precious Indian Orchid of which we learn from Sir Joseph Hooker's

book that some of the larger native specimens are a load for an elephant! If the flowers of such are at all worthy of the plants, they must well repay the traveller who sees them. To ascertain the conditions that would so well suit the free growth and increase of this plant in houses as to make it an ornament of every indoor garden is part of the work of our young Orchid growers, of which no doubt they will in due time acquit themselves. In such rich and well managed collections they have excellent means of observation.

**ODONTOGLOSSUM CRISPUM VAR.**—The finest form of this Orchid with the large dark brown spots, forming a strong contrast with a purer white than usual. It has been drawn, and will be engraved for THE GARDEN. These crisp, fringed, wavy, pointed, wreathy *Odontoglossums* seem sent to deliver us for ever from giving our ears to the pancake-and-dumpling professors of the form of flowers. The only awkwardness about the *Odontoglossum* is its name, which some one with no great love for his native tongue, or for pleasant sounds, tried to "make English" by calling it "Odontoglot."! Also from Sir Trevor Lawrence.

**A BLUE PRIMROSE (December 9).**—A black London fog is of all atmospheric phenomena the least favourable for judging of the value of a blue Chinese Primrose sent us by Mr. T. Pulley, of Mildenhall. The scarlet-crested *Poinsettia* is splendid in the smoke, and the finely sculptured form of a single blossom of *Dendrobium formosum giganteum* has been a pleasure for a week, but the blue flowers are nowhere in a fog of the blacker type. This Primrose is raised from seed, as most of them are (like the "seedling" Melons!). It is a large bloom of a light purple-blue, and we should advise the raiser to take care of it and raise every seed it produces for some time to come, in the hope of effecting more change in the same direction.

**POINSETTIAS IN THE CHAD VALLEY NURSERIES.**—Large and brilliant examples of these, grown in a rapid and peculiar way by Mr. Vertegans, of Birmingham. They are from cuttings struck in the latter end of June last. Considering that no ordinary vase would hold the long, stout shoots and crests sent, the mode of culture must be worth knowing. All who have warm houses ought to be able to succeed with this fine plant. Good as we used to think the old market plants, they are surpassed by these from Mr. Vertegans, and by the Wortley specimens alluded to last week.

**LILIUM AURATUM AT CHRISTMAS.**—This, which flowers for such a long period in the open air in summer, nearly four months in gardens where there is a variety of plants of it in different positions, appears to be turned to account for its use in winter decoration by Mr. Vertegans, Birmingham, who sends a good bloom of it, saying that he hopes to have plenty of blooms at Christmas. It will go well with the other rich things of the season, but some may think the odour too powerful for rooms.

**POINSETTIA AND THUNBERGIA.**—A remarkable and firm-looking crest 16 in. in diameter from Mr. Neild, The Gardens, Wythenshawe, Northenden. The interesting fact about this is that it was grown in a cold frame during the summer months. The foliage is very large and of a dark healthy green. Mr. Neild also sends the blue *Thunbergia* Harrisii, which he says is excellent for specimen glasses or other uses in the cut state, as it keeps in good condition several days



after opening. It is always worth a place as a stove plant, and very beautiful when well grown.

**BOUGAINVILLEA GLABRA.**—This plant seems a patient bloomer, and gives us at various seasons a substitute for the finer blooming species, which is such a gorgeous object in the gardens of warmer countries, such as Egypt, at this season, and later on in houses where it is grown well in this country. The perfect freedom in cultivation as well as continuity of bloom of the present species make it a useful aid in the garden. From Farnborough Grange.

**BROWALLIA ELATA.**—This poor old plant—at least, so it may be spoken of, from the poor use made of it in past years—has at last been found useful and not in the open air, where it never was very successful in this country. It is found excellent for affording bluish flowers at this season, when they are not very easily got from other plants, and in the winter greenhouse it flowers freely. Mr. Crooke says he has many plants of it full of flower.

**LARGE POINSETTIAS FROM SHIRBURN CASTLE.**—This plant travels better than many other winter bloomers, and a specimen that comes from Shirburn Castle Gardens, Tetworth, Oxon, is certainly very remarkable for size, its gorgeous crest measuring slightly over 21 in. in diameter! They are sent us by Mr. Thomas Buckersfield, gardener to Lord Macclesfield, and certainly are a credit to his culture of this splendid winter plant. We have not heard of a larger or finer specimen.

**LILIES OF THE VALLEY.**—Very interesting blooms of these showing the result from home grown and foreign "crowns," both evidently specially prepared for forcing. Mr. Vertegans, of Birmingham, who sends them, states that the home-grown crowns give the best result, and his specimens prove it. We trust that its forcing may extend more and more, and also the gentle forcing which may be effected in frames and pits, and even under cloches. Also we hope the plant will be perfectly grown for blooming in the open air both in warm and sunny and sheltered, and in cool shady borders, woods, and copses, so that its bloom may be thereby prolonged. Its form, grace, colour, and fragrance are so perfect that one can never see it too often. As a matter of fact it is extremely rare to see good flowering plants of the Lily of the Valley in the open air. Mr. Vertegans says: "Believing that you would like to have further proof of the Lily of the Valley being produced at this season of the year from home-grown crowns (single), I send a few blooms for your acceptance, also roots as taken from the ground at Chad Valley. I also enclose blooms produced by roots imported from Berlin. Home-grown roots produce foliage freely; the imported ones are shy in doing so. By Christmas I expect much finer blossoms."

**LUCULIA PINCRANA.**—This interesting winter flowering shrub that has now become so rare in gardens comes to us in good condition from Mr. Latham, Botanical Gardens, Birmingham. It is much in the way of the commoner *L. gratissima*, but is scarcely so fine as that plant, the clusters of flowers being looser, though they are sweetly scented. The colour, like *L. gratissima*, is a delicate pink, and makes a fine contrast with the bright green foliage. The finer *Luculia gratissima* is now in fair bloom in gardens where it gets the place and the simple attention it requires. Planted out at least its culture is not difficult, though its propagation is.

## ORCHIDS.

### CALANTHES FAILING TO BLOOM.

I HAVE to thank your correspondents for their kind replies to my communication (p. 495). I have carefully noted the advice they give. "T. C. W." (p. 522) recommended me to reduce the temperature to a minimum of 55°, while "T. L. C." Birkenhead, recommends that the temperature should never fall below 70°. Again, Mr. Baines (p. 542) considers the position and temperature of my plants all that can be desired, but is surprised that I should keep an orchid house at a temperature of 60°—a matter for surprise certainly, but if I did not, I ought to have written Orchid house. Mr. J. C. Clarke gives much valuable information as to the culture of these plants during their growing season. Hitherto I have had no difficulty in growing them, having at present bulbs of *C. Veitchii* 10 in. high by 8 in. in circumference, and flower-spikes 3 ft. 6 in. long, with a considerable number of unexpanded flowers; also bulbs of other sorts 7 in. in circumference, and yet, as far as flowering goes, they are a failure. We have never more than one or two blooms open at one time, and miserable objects they are, having no substance, and the petals and sepals never assume the recurved form noticeable in a well developed flower. After considering all your correspondents' suggestions, I am driven to the conclusion that there is something detrimental in the atmosphere of the house, as I have had failures again and again amongst winter flowering plants in the same structure. This winter I had a quantity of *Euphorbia jacquiniæflora*, well set with flower, introduced into the same house, and before they were ten days in it the foliage was becoming yellow and the flower-buds dropping off. I will give another instance and then have done. A plant of *Angraecum sesquipedale* in excellent health with foliage 18 in. long, and bearing four flower-spikes, developed its flowers up to a certain stage and in one night's time the flower-buds would change from a deep green to a yellow, and then were fit only to be cut off and thrown away. My conviction is that these failures are a consequence of sulphurous gases escaping from the flue which conveys the smoke from the furnace, on certain occasions subject to the direction of the wind. I have smelt smoke in the house, and seen it too, but is it possible to be there in sufficient quantity to do such injury to plants without at the same time being perceptible to smell or sight? AN ANXIOUS ENQUIRER.

Blackburn.

**Dendrobium speciosum Hilli.**—We have lately had on this lovely Orchid several spikes with some hundreds of flowers, which, although not gorgeous in colour, were nevertheless very beautiful in the aggregate, for the spikes were long and arched, the majority of ours being from 1½ ft. to 2 ft. long, and the delightful perfume which the blossoms emitted reminded one of a house full of Violets; in fact their scent not only filled the house they were in, but the entire range of houses. This fine Dendrobe is of easy culture, being a strong rooting vigorous grower like *D. speciosum*. The main thing necessary in order to ensure plenty of flowers is to well ripen off the young growths, by taking the plant out of a stove temperature towards the latter part of the summer, and gradually exposing it to strong sunlight and a cool atmosphere, keeping it also moderately dry. Under this treatment the flower buds will gradually plump up, and when introduced to heat will quickly open, and last in good condition for a long time both on the plant and in a cut state. The time of its flowering, too, may be regulated to suit the demand for flowers by keeping it a longer or shorter period in cool quarters. Our largest plant in a 14-in. pot has generally flowered about February, but this year, requiring some good flowers in the early part of this month, we returned it to its warm quarters earlier than usual, and the first week in December it delighted

us with its beauty, and literally loaded the air with its fragrance.—JAMES GROOM, *Linton*.

**Shy-blooming Orchids.**—It would be a great help to some of us Orchid growers who find many species decidedly "shy bloomers" if Mr. Baines would kindly add to his article in *THE GARDEN* of Dec. 10 a description of the mode by which such plants may be made to flower freely. Such Orchids as *Vanda teres*, *Lælia majalis*, *Renanthera coccinea*, and some of the *Miltonias* many of us find most difficult to cultivate, and some information as to these and other "shy bloomers" would, I am sure, be most acceptable to many readers of *THE GARDEN*.—S. C.

**Ansellia africana.**—This noble Orchid from Fernando Po may be seen in perfection at Kew just now, for some large plants of it are bearing enormous drooping panicles of blossoms, which, being so numerous and transversely marked with brown on a yellow ground zebra-like, are extremely attractive. It is grown at Kew in company with *Angraecums* and such like Orchids, several of which, notably some huge plants of *A. eburneum* and its variety *virens*, are also in flower.

**Catasetum buccinator.**—This is both a curious and an attractive Orchid, and distinct from the generality of the *Catasetums*, which are generally banished from select collections. The flowers of *C. buccinator* have singularly folding lips of a pale lemon yellow; the other parts, also curious in structure and arrangement, are of a darker shade. *C. callosum* is likewise in flower, and like the last is remarkable for the wonderfully curious shape of the blossoms, which may be likened to some of the varieties of Pigeon standing erect. The colour is a rich chocolate-brown, by no means unhandsome.

**Orchids at Brentham Park, Stirling.**—The following are now in bloom in Mr. Smith's collection at Brentham, viz.:—

<i>Angraecum sesquipedale</i>	<i>Maxillaria Lehmanni</i>
<i>Barkeri Lindleyana</i>	<i>Odontoglossum Alexandrie</i>
<i>Calanthe Veitchii superba</i>	<i>Andersoni</i>
<i>vestita rubro-oculata</i>	<i>blandum</i>
<i>Cattleya exoniensis superba</i>	<i>cirrhostum</i>
<i>maxima superba</i>	<i>gloriosum</i>
<i>marginata</i>	<i>grande</i>
<i>Cymbidium Mastersi</i>	<i>Jenningsianum</i>
<i>Cypripedium Argus</i>	<i>nevadense</i>
<i>Boxalli</i>	<i>Pescatorei</i>
<i>Chantini</i>	<i>Rossi majus</i>
<i>insigne</i>	<i>roseum</i>
<i>Sedeni</i>	<i>tripudians</i>
<i>venustum</i>	<i>Ure-Skinneri</i>
<i>villosum</i>	<i>Oncidium aureum</i>
<i>Dendrobium bigibbum</i>	<i>bicallosum</i>
<i>Wardianum</i>	<i>chero-phorum</i>
<i>Epidendrum Wallacei</i>	<i>crispum</i>
<i>Ionopsis paniculata</i>	<i>cutillatum</i>
<i>Lælia alba</i>	<i>Forbesi</i>
<i>anceps</i>	<i>ornithorhynchum</i>
<i>Barkeri</i>	<i>Rogersi</i>
<i>autumnalis</i>	<i>tigrinum</i>
<i>Dormaniana</i>	<i>Phalaenopsis grandiflora</i>
<i>Lycaste lanipes</i>	<i>Restrepia antennifera</i>
<i>Skinneri</i>	<i>fuscata</i>
<i>Masdevallia Estradae</i>	<i>guttata</i>
<i>Harryana</i>	<i>Saccolabium giganteum</i>
<i>igneæ</i>	<i>Sophronitis cernua</i>
<i>rubescens</i>	<i>grandiflora</i>
<i>aurantiaca</i>	<i>Trichostema suavis</i>
<i>Lindleyi grandiflora</i>	<i>Vanda lamellata Boxalli</i>
<i>Shuttleworthi</i>	L. M. J.

**Cool Orchids.**—In reply to your correspondent who enquires about a cheap book on hardy Orchids, does he know "Cool Orchids," by Burbridge, 6s. ? I find this an excellent book.—S. COURTALL.

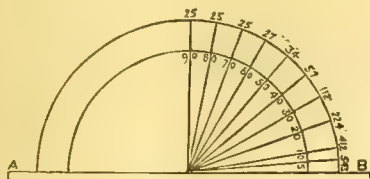
**Cypripedium insigne.**—H. Harris.—Two flowers on one spike is rather an uncommon occurrence. We have seen it before, and there was a similar example shown at South Kensington this week.

**THE GARDEN ANNUAL.** Almanack, Gardeners' Address Book, and Horticultural Directory for 1882. Contents: Flowers, Fruits, and Vegetables in use each month—List of Nurserymen and Seedsmen, and of the Horticultural Trade—Gardens and Country Seats in Great Britain and Ireland—Alphabetical List of Gardeners—New Plants of the Year—Planting, Seed Sowing, Draining, Fencing, Timber, Brickwork, Tank, Hot-water, Weights and Measures, Ready Reckoning, Wages, Money, Calculating, and Well-sinking Tables.—Price 1s. ; by post, 1s. 3d. Well bound, 1s. 6d. ; by post, 1s. 9d. All Booksellers, Office, 37, Southampton Street, Covent Garden, London, W.C.

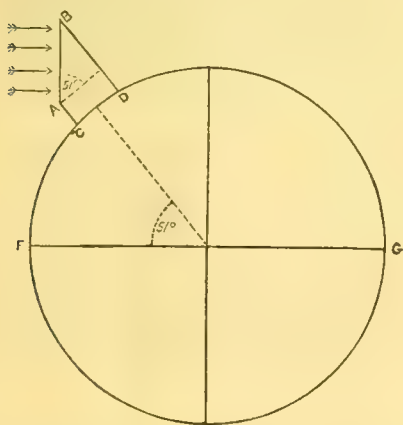


### PITCH FOR HOTHOUSE ROOFS.

It may possibly interest some of your readers to have an amplification of a few of my reported remarks at the Crystal Palace School of Gardening, upon which "Peregrine" comments in *THE GARDEN* (p. 576): The pitch or angle of inclination which is best adapted for a hothouse roof under various conditions depends primarily upon the following facts. The more nearly do the solar rays form a right angle with the glass, the less is there obstruction to those rays in transmission. If A B represents the construction of a plate of glass, the inner circle of figures will show the angles of incidence, and



the outer figures the corresponding number of solar rays out of 1000 (according to Bouguer) lost in transmission. This diagram shows that for  $30^{\circ}$  on each side of the perpendicular there is very little difference in the amount of light lost. Again, the sun—say in the neighbourhood of London—on the longest day, June 21, for practical purposes, rises  $50^{\circ}$  east of north, attains at noon an altitude of  $62^{\circ}$  above the horizon, and sets  $50^{\circ}$  west of north; and on the shortest day, Dec. 21, rises  $50^{\circ}$  east of south, attains at noon an altitude of  $15^{\circ}$  above the horizon, and sets  $50^{\circ}$  west of south. Thus we see that although there is fortunately a good margin allowed us, inasmuch as the solar rays may safely deviate  $30^{\circ}$  from a right angle, yet in a small degree the locality and in a large



degree the time of year determine the proper pitch of the roof. We ought to aim at perfection, and if we attain it we can easily deviate or modify as we please. Supposing, therefore, we wish for the highest possible accuracy, and we require to find the angle of inclination of a glass roof (lean-to) which shall, at 12 o'clock noon, on either of the equinoxes, say March 21 or Sept. 23, receive the sun's rays at a perfect right angle, the latitude of the place will give the angle which the roof should make with the plane of the horizon.

This is self evident by the annexed figure, in which A B D C represents the section of a lean-to greenhouse built upon the earth at latitude  $51^{\circ}$  north, F G represents the equatorial

line coincident with the plane of the ecliptic (which occurs only at the equinoxes), and the arrows show the direction of the sun's rays. If we require to find the pitch which a roof should have in order to receive the sun's rays at a right angle at 12 o'clock noon on any other day of the year than either March 21 or September 23, all we have to do is to take the latitude of the place and subtract from it the sun's declination between the vernal and autumnal equinoxes, or add to it the sun's declination between the autumnal and vernal equinoxes. To illustrate this, suppose we wish to find the angle which a roof should have in the neighbourhood of London to receive on August 15 at twelve o'clock noon the sun's rays at right angles.  $51^{\circ}$  the latitude minus  $14^{\circ}$  the sun's declination on August 15 equals  $37^{\circ}$ , the angle of elevation of roof. Of course there is a variation of  $1^{\circ}$  in the angle of roof for each  $1^{\circ}$  variation in the latitude. All the foregoing remarks presuppose that the glass-house is a lean-to facing the south. If the house be a span, then obviously, in order that each side may catch the sun's rays in equal proportions, the ridge should run N. and S. I have, however, seen span houses built with the ridge E. and W., with the avowed intention that a greater proportion of solar rays should fall on one side than on the other. I had intended giving a digest of my experience, as supplementary to "Peregrine's" remarks, upon conservatory construction, but as I have already sadly trespassed upon your space, I will revert to this subject on a future occasion.

F. A. FAWKES,

Author of "*Horticultural Buildings.*"

## GARDEN IN THE HOUSE.

### DRYING FERN FRONDS.

FERN fronds may be dried so as to retain their colour by the process generally practised for preparing herbarium specimens of most plants; in fact, Ferns give very little trouble in this respect if well ripened fronds are selected, as they dry so much quicker than most plants, owing to the thin papery nature of their leaves. The following instructions will, if carefully attended to, lead to the desired result: First procure drying paper, which should be thick and unglazed and of a bibulous texture. Blotting paper would answer very well, or any other paper that will absorb moisture quickly. The most convenient size is 12 in. by 18 in. Between every layer of fronds from four to six sheets of paper will be necessary, and if quantities are to be dried a thin board should be placed between about every dozen layers of leaves, so as to equalise the pressure. The fronds should be placed face downwards on the lower paper, and the top layer should then be placed upon them. In this manner the pinnae are kept flat and in their natural position. On the top of the pile a weight of about 50 lbs. should be placed. The top board should be about 1 in. thick, so as to bear this weight without bending. A bag filled with sand is as handy a weight as anything. The warmer the room in which the drying is done the quicker the specimens will dry. In 24 hours after putting in the fronds they should be transferred to dry paper, and again changed in about 48 hours. About three changes will be found enough for most Ferns. In changing the paper care must be taken not to injure the pinnae, and should the fronds be very delicate the top paper should be removed, the dry placed over the frond, and then the papers turned upside down. By this means the fronds are transferred without being disturbed or injured. When perfectly dry the fronds should be gummed on to sheets of white paper, a mixture of gum-arabic and gum-tragacanth being the most suitable, and these may be procured from any chemist. The frond should be laid face downwards on a sheet of paper and the back gently gummed over with a soft brush. Then place it in position on the mounting paper and press it gently

with a soft cloth rolled up so as to form a pad. Any loose or stiff pieces may be kept in position by gumming a narrow strip of paper over them. If for botanical or comparing purposes, the under side of the frond should be shown, or better still a small frond showing the arrangement of the spores might be dried along with the perfect frond and gummed on to the mounting paper face downwards. The arrangement of the spores is as important in the classification of Ferns as flowers are in that of flowering plants. Care should always be taken to label the specimens as they are gathered.

## HARDY FOLLAGE DECORATIONS.

At some of the suburban *Chrysanthemum* shows I have noted very pretty stands for house decoration made up of hardy and generally coloured foliage, set off by means of black, red, yellow, and white berries, and a few pieces of Grass and perhaps hardy Ferns. I have been assured that the material of such a stand will keep bright and fresh for two or three weeks, whilst the cost even to anyone without a garden would be but trifling. In one case hardy flowers were introduced with good effect, but as there are thousands of gardens which do not yield any at this time of the year, they should not as a rule be looked for in these stands. The foliage may be that of Turkey Oak, *Berberis Aquifolium*, Bramble, or indeed of any kind that would look pleasing, including pieces of variegated and fine-leaved Conifers. The best berries are those of Privet, Dewberry, Holly, red and yellow, indeed, of any kind that being carefully preserved are at once obtainable and ornamental. Very pretty for this purpose would be some of the coloured Grasses imported so largely from Russia, but they should not be used in bunches as sold, but rather pulled to pieces, and a few heads employed at a time to give life and freshness, the rest being carefully preserved. Stands dressed with choice flowers and rare Ferns are no doubt very attractive, but we see so much of these during the summer months that one turns from them at this time of the year with a feeling of relief to the unpretentious, yet pretty and certainly seasonable, stands of hardy leafage. Few may now find flowers for the purpose, but almost all may get leaves and berries; therefore it is hoped that stands may not be empty just now when they might be so fitly employed.

A. D.

**Flowers in sleeping-rooms.**—The public are again warned against the use of flowers in sleeping apartments; and wonderful stories are told of the deleterious effects which have followed their presence in a limited atmosphere respired by invalids. Curiously enough, these appalling “instances” of the evil influences of plants do not for the most part apply to flowers. Nevertheless, we agree that it is safe to banish growing plants and flowers from bedrooms. They can do no good, and they may do some harm.—*Lancet*. [Where the desirable habit of thorough ventilation of sleeping-rooms at night obtains a few not strong smelling flowers can make very little difference. There are, however, usually so many positions in a house in which to place them apart from bedrooms, that the question is of little importance.]

**Economy in fuel.**—There is no doubt that more fuel is consumed in heating than is necessary, and, as young men generally have the management of fires, it is desirable that they should be taught the art of economy. Much waste of heat results from inattention to dampers. Too often is the damper left out after the fire has burnt up; consequently, the heat escapes up the chimney instead of being confined around the boiler. No doubt, where first expense is not looked at, a larger and a smaller boiler are preferable to a single one, but it is my conviction that too many boilers are set up with a larger area of piping than the boiler is capable of heating without unduly exercising its power; hence failures when extra severe weather is experienced.—J. S. T.



## THE FLOWER GARDEN.

## CULTURE OF GLADIOLI.

IN reference to the hybrids of *G. gandavensis* (certainly the most beautiful of all Gladioli), I am more than ever convinced that, in order to have a successful bloom, two things are essential. One is the proper preparation of the soil in which the bulbs are to be planted. I have always found them do best when we were able to trench the ground in September of the year previous to planting. We trench the ground 2 ft. deep any time during that month, and the surface which is exposed becomes thoroughly aerated during the autumn and winter, especially if frequently forked over when dry. We trench in a liberal dressing of half-rotten cow and stable manure in equal proportions. The next important thing after the preparation of the soil is the quality of the bulbs. In the year 1880 we planted a very fine collection of imported bulbs from France, and nearly the whole of them flowered admirably, producing some of the finest spikes we ever had, and the roots turned out clean and healthy, and, to all appearance, larger and better than those that were planted in the spring. These were carefully saved, and planted in the spring of 1881 on exactly similar soil, but with a very different result. There was not a single good spike amongst them, and the leaves had a sickly colour, which told too plainly how they had degenerated. In the face of such experience it is needless for any one to tell us that the "Gladiolus does not degenerate." We must, therefore, either import fresh bulbs every year or raise seedlings, occasionally introducing foreign blood, else the seedlings also degenerate. I have several thousands of very small bulbs this autumn produced from seeds sown last April; these will be planted out on good ground in March, and will doubtless, judging from previous experience, yield a fine lot of flower-spikes in the autumn. Plenty of water when dry weather sets in, and a mulching of rotten manure to prevent evaporation, are what the Gladiolus requires in order to obtain good spikes for exhibition. The hybrids of *G. gandavensis* are almost exclusively cultivated in gardens to the exclusion of many comparatively hardy species and varieties.

Dean Herbert was a great admirer of Gladioli, and was very successful with them in his garden at Spofforth. He found they did remarkably well in the natural soil, which was yellowish light loam. In borders of peat and sand they also did well, but the system of culture pursued by the dean is that which most commends his work to our attention. He says that "they succeed best when grown into a thick tuft, in which the profusion of blossom is admirable, the clusters of bulbs and the old skins of decayed bulbs permitting the wet to drain away, and preventing the earth from lying too close and heavy on the bulbs in autumn and winter. Clusters have stood undisturbed at Spofforth above ten years, with the precaution of covering them with leaves from November to March or April. There is danger in disturbing and parting, for numbers will rot if reset separately, and if they must be divided it is best to do so in April." It must have been a treat to have seen the Dean's clumps, or rather colonies, of Gladioli. He had crosses from *G. cardinalis*, *blandus*, *carneus*, *inflatus*, *angustus*, *tristis*, *hirsutus*, *recurvus*, and *versicolor*; the last three did not succeed if left out in the borders, but the others did. *G. Colvillei* and its hybrids stand the winter well; so does *G. cardinalis*, and indeed all of them. We had some bulbs of *G. gandavensis* left out in the ground all through last winter, one surely that would test any plant, and they came up stronger than those that were lifted and replanted in spring. Nearly all Gladioli form the finest of border plants where they succeed. What fine effects may be produced by a large cluster of the delicately beautiful *G. Colvillei albus* in juxtaposition with a noble plant of *Delphinium Madame Henri Jacotot*, or the glowing colours of such fine flowers as the common *G. brenchleyensis* or the rich *G. cardinalis*! The right plan would be to follow Dean Herbert and others since his day. Establish them where they may remain undisturbed for years. The greatest

curse to herbaceous borders in which bulbs are planted is the spade in autumn. If it is necessary to dig the borders, let it be done in spring when the bulbs have started sufficiently to be readily observed. The principal thing is to start well; get the ground into good condition by trenching, manuring, and forking it over until it is ready for planting, and if thought not quite good enough in itself, it is easy to throw out a few spadefuls and replace them with what may be deemed suitable. J. DOUGLAS.

## TENNIS LAWNS.

DOUBTLESS the difficulty experienced by "A Dejected Herbalist" with regard to his tennis lawn arises in consequence of the retentive character of the subsoil; it is either clay or loamy sand, or it is insufficiently drained. It would, I think, be difficult to suggest a satisfactory mode of improvement without re-forming the whole, more especially if the evil arises from the causes just named. A good tennis lawn, cricket, or croquet ground may be formed in the following manner. Comparative dryness being absolutely necessary, the subsoil should be efficiently drained. This should be done by means of 3-in. butt pipes placed 3 ft. 6 in. beneath the surface in diagonal lines across the ground 10 ft. apart, giving a fall of at least 6 in. in a chain, or 1 in. in 132 in. A catch drain should take the water from the ends of all the drains, and carry it away to some convenient outlet; care should be taken in laying the pipes that the joints are placed as close as possible. If the soil is of a retentive character sufficient should be removed to allow for 2 ft. of filling up. Having removed the bad soil, 2-in. butt pipes should be placed on the surface in the same direction, and between the first mentioned drains, to carry away the water in the same manner as before. This affords an excellent additional security against excessive moisture. The first foot of filling up should consist of cinder ashes, burnt ballast, small stones of a sandy character, or similar porous material. This must be laid evenly, and rammed or rolled until the whole is fairly compact. The second foot should consist of fibrous soil of a friable loamy nature—not clayey loam; the top spit from pasture land is generally excellent for this purpose; this should be well cut to pieces, levelled, and firmly rammed. One in. of sharp sand may then be placed on the top, in order to get a perfectly smooth and even surface on which to lay the turf. This ought to be done off boards, without treading on the ground; loamy sand for this purpose is worse than useless. The turf, which should be of a good description that is free from weeds, and containing a large proportion of the finer Grasses, as Poas, Festucas, &c., must be cut to a regular size and thickness, and laid on evenly and closely, and then firmly beaten. In dry weather it is advisable to give a sprinkling of very fine soil to prevent burning and to fill up the joints; water should also be applied until the turf has got well hold of the soil. A tennis lawn thus formed will be in a fit state to play upon in all reasonable weathers. I believe it to be an error to suppose that lawns can be too much drained, although in excessively hot and dry weather it may be advantageous to water them; nor can the soil, in my opinion, well be too rich if mowing, rolling, and sweeping be properly attended to. The secret of successful lawn making is—first, a well drained subsoil; and secondly, proper materials in sufficient quantity for forming the surface; this is very important. Soils which contract and expand in a marked degree under climatic influences will never produce a good turf. What is required is a fibrous homogeneous soil, which protects the surface-rooted Grasses from drought and heat. C. D.

—Granted that "Dejected Herbalist" (p. 571) has now thoroughly drained his tennis lawn, he would soon considerably improve the Grass as well as the muddy condition of the surface if he gave it a top-dressing  $\frac{1}{2}$  in. thick of fine river sand in the spring, and continue doing so every other year for some time. Grass in growing emits roots just above the surface of the soil, and by applying

a periodical top-dressing of sand for these to work among, a mould of sand on the top a few inches in thickness would soon be formed which would check the gross character of the Grass and make it spread out and grow thickly, producing that fine velvety appearance and soft tread so much desired in lawns. The surface water will also pass freely down, which will keep the Grass from becoming muddy and plastic.—A. MACKIE.

**Oxyria reniformis.**—In the reference to this plant (p. 563) it is mentioned as being a "Himalayan plant." Its geographical range is wider than that, for, according to Mr. Bentham, "it is found in all the great mountain ranges of Europe, Central and Russian Asia, and extending far into the arctic regions; it is frequent in the mountains of Scotland, Northern England, North Wales, and Northern Ireland." On our Carnarvonshire mountains I have often met with it in wet, spongy places, by the sides of roaring mountain torrents, clinging for bare life in some fissure of the rocks, or nestling happily and luxuriantly behind some little boulder stone, but always where there was plenty of water. Its range lies between 1000 ft. and 2000 ft. above the sea level. About here I do not remember having met with it much above or below these figures. There is something rather striking about the plant, but it is of more interest to the botanist than to the gardener. As a plant for the decoration of the flower garden it is of no value. I have seen unusually fine specimens grow about 12 in., but generally they do not rise above 6 in. or 7 in.—EDWIN JACKSON, *Llandegai, Bangor*.

**Edged and alpine Auriculas in December.**—The present appearance of the former seems on the whole satisfactory. There has been no loss in my limited collection from aphids. A few appeared in September, but I quickly removed them with a camel's-hair brush; and having left none for propagation—a point too often not paid sufficient attention to—none have since appeared. The woolly aphid I never see. It is worth noting that where the mealing is heavy the green-fly makes no progress. True Briton and General Havelock have lost most of their outer leaves, and now seem mere "hearts." The black selfs were top-dressed in October, and stout flower-buds are now visible. Alpines, indoor and outdoor, are robust looking, and never made so few autumn blooms, so few that for variety I encouraged those that did with a higher temperature in order to induce expansion.—W. J. M., *Clonmel*.

**Cheiranthus Marshalli.**—Anent the propagation of this plant, let me add a word to what "A. D." has said. Some plants of this bloomed from May to November here this year; I know of nothing of its colour more useful for borders. Its propagation—this is very simple with us here; in June we take off the small side shoots and put them in under a handlight on a shady border with other hardy plants, and they strike in a short time; they are then planted on a warm border till spring, and are afterwards planted in the herbaceous border. We treat them thus every summer.—J. C. F.

**Leucojum vernum fl.-pl.**—This plant is still in the possession of our firm, although we have only a small quantity of it, which enables us to supply only a few bulbs annually if they grow well. It is a difficult plant, and wants very careful treatment. In former years the late Mr. F. Rodigas, at St. Trond, Belgium, grew this plant with success, and our firm several times got from there one or two dozen bulbs. I have not yet seen a double variety of *Galanthus plicatus*.—J. H. KRE-LAGE, *Haarlem*.

**Lily of the Valley.**—The illustration which we published last week, showing the finely-grown Lily of the Valley, grown by Mr. Hawkins, of Twickenham, should have been connected with the names of Messrs. Hawkins and Bennett, to which firm Mr. Hawkins belongs.

**Best Lilies for pots.**—Would some experienced grower of Lilliums kindly inform me through the medium of THE GARDEN the best varieties of Lilliums for growing in pots? also the best soil and treatment of the same?—FLORA.



## A LILY BED AT MOULTON GRANGE.

IN visiting the very interesting and pretty gardens at Moulton Grange last year we were charmed to see a bed of Tiger Lilies in the position we have often advocated for them, that is, singly on a piece of quiet Grass with no other flowers near to mar their beauty. The bed was a large oval one, and the colour of the finely grown Lilies was brilliant and effective seen through the trees and glades. In point of colour alone, indeed, nothing could be better; the plants were about 6 ft. high, and told well in the garden landscape, while the mass of bloom was profuse. The plants had greatly the advantage in habit and form over the usual dwarf type. We are now making a comparison in point of colour, which it is claimed is the strong one in the case of bedding plants, and endeavouring to show that many hardy flowers of the highest beauty have as good qualities as regards colour if we take the same pains with them. Colour on a 6-ft. plant must in all ordinarily varied gardens be more effective than on a plant 6 in. or



Bed of Tiger Lilies in Pleasure Ground at Moulton Grange, Northampton. (From a sketch by Mr. Moon.)

12 in. high. But this is putting the thing in the lowest way, perhaps, for after all flowers will be judged of for other reasons, and however strict our judgment or rigid our selection, the stronger and finer varieties of the Tiger Lily must find a place with us. The bed, it may be remarked, was within a few yards of a walk, and on one of those little bits of turf which occur by most shrubberies, so that it could be easily examined near at hand. It is perhaps better so placed, because other plants of varying height and character were not brought near to confuse or weary the eye. We are particular in pointing this out, because in the case of a very important family of plants it is one of the simplest and best ways to grow it alone in the spot where it grows and looks best. There, in a large circular or oval bed, it can get exactly the culture good for it; and should the plant become tired of the spot, removing it to another home, and replacing it with some plant of a wholly different character is easy and simple.

Here, perhaps, is the best place to say how much pleasure we derived by a road leading to Mr. Nethercote's house in which he had very thoughtfully and successfully planted a great variety of hardy trees. A common hedgerow and road bank were planted with such a variety of

trees as one expects to find only in the choicest pleasure garden, and many of them having grown well and into good specimens, the effect was very good. Oddly, as it may seem, the position suited some of the things better than if placed in the ordinary shrubbery. The thin line was not crowded, nor likely to be, and the individuals were not repeated to a wearisome extent. It was pleasant to pass along the road reviewing, as it were, the trees, and we trust recent winters have not made this bold and successful experiment less successful so far as the trees not quite hardy are concerned.

## SOIL FOR ALPINE PLANTS.

I BEG to thank Mr. Whitehead for giving us an instalment of the list of alpine plants in relation to soil, of which he told us before. So far as my limited experience goes, it quite concurs with the results which are there recorded. I might perhaps be disposed to question whether some few of the plants placed under the heads of limestone or granite lovers might not be transferred to the number of those which are indifferent to the situation, as, *e.g.*, *Saxifraga oppositifolia* and *Aizoon*, both of which do very well in limestone. But, perhaps, in the case of many, all that is meant is that they will do better in the soil assigned to them.

It is interesting to compare Mr. Whitehead's list on p. 540 with that of Mr. Hatfield on p. 555. They for the most part, but not always, agree. *Primula integrifolia* is placed on two opposite sides in the two lists, and so is *Saxifraga caesia*. With regard to the latter, I venture to think Mr. Whitehead's list undoubtedly right, as I have never found *S. caesia* in its native haunt except on limestone, and its luxuriance has been in proportion to the purity of the limestone on which it grew. I am glad, at any rate, that the discussion about soils is taking this practical and useful shape, for I must confess myself unconvinced by the arguments of the advocates of position and climate as *versus* soil. No doubt a situation like Mr. Ewbank's in the Isle of Wight will enable many a plant to pull through which under less favourable conditions would have succumbed to uncongenial soil. But I cannot help thinking that if Mr. Ewbank will adopt some of the hints given in the lists before us, the next time I visit his interesting garden I shall see an improvement in the physique of some of his favourites. If situation were all in all, how could the fact be explained, to which I could testify in numerous instances, where within a few yards in the Swiss valleys, with altitude, exposure to sun, &c., exactly the same, the flora sometimes entirely changes in sympathy with the soil? And if this is so, it is difficult to believe that the culture of these plants in a strange land is not affected by corresponding conditions.

CANONICUS.

## LYCHNIS ALPINA.

A VERY interesting account of the occurrence of this very rare British plant in the Clova group of the Grampians is to be found in the Rev. Hugh Macmillan's "Holidays on Highlands" (p. 70). He states that it grows only, and very sparingly, on the rocky tableland, about half an acre in extent on the summit of a hill, and that it is intimately connected with the lithological character of its habitat, for in several places it springs from little crevices where there is but little soil for its roots, and that its range of distribution extends only as far as the rock preserves its mineral character unchanged. This rock, which differs from the prevailing rocks of the neighbourhood, is a compound felspar. There is but this one habitat for it in Scotland, and there is only one place in England where it occurs under almost identical conditions and upon similar rocks. It has, however, a wide dis-

tribution on the Continent, on the Alps and Pyrenees, and the variety of it called *L. lapponica* is so like it that I can see no difference, excepting that the Lapland variety is dwarfer. Here, then, appears to be a plant which has a peculiar liking for a suitable soil, and as it occurs only above an altitude of 3000 ft. in a wild state, it is a difficult plant to rear and keep on garden rockeries, and therefore the cultural directions are of importance.

Now, Gusmus "Alpen-flora-Katalog" (p. 13) marks it H=high alpine, and g=immaterial, *i.e.*, that any earth mixture is sufficient for its growth. Surely this must be a faulty description of its requirements, and I think we may ask Herr Gusmus to tell us in your columns if he finds in the high mountains about Villach, where no doubt it abounds, that it grows indiscriminately on lime or sand-granite or felspar, clay or peat, as his Katalog gives reason to infer. Backhouse advises loam, and Wooster ("Alpine Plants" (p. 28), second series, where it is beautifully figured) says "moist sandy soil in rockwork." My own experience is that it grows well in a mixture of peat, fine loam, and leaf-mould, mixed with rough grit lumps like Hazel-nuts, or powdered granite lumps. Last summer a large three-year-old plant was one mass of bloom, and all our plants look well and vigorous. Before we arrived at this way of growing it we lost plant after plant. We have also a plentiful crop of healthy seedlings growing in the same sort of soil.

It will, however, be clear that none of the three authorities above cited give any idea of this mode of growth.

BROCKHURST.

Didsbury.

**Red spider on Violets.**—Any information given in THE GARDEN as to the cause of red spider on Violets will greatly oblige me. My beds were completely blighted by them, and show no flowers at present. Are the plants likely to flower in spring? They are the Czar variety. I am told that that kind does not flower early like the old Russian, but I feel sure the red spider was the real cause. Is there any cure? Will runners from these plants for spring planting be free from it?—H. G.

**Belladonna Lilies.**—Bulbs of these permanently planted out in a warm border against a wall facing the south have not flowered during the last three seasons. Their foliage has grown luxuriantly enough, but there has been an entire absence of flowers during the period just mentioned—perhaps owing to severe winters and sunless summers. Previously they always flowered about October, being reckoned among the choicest and most beautiful of our hardy bulbs. They are growing in a long narrow border associated with *Tritonias*, *Crinums*, *Eucomis*, and *Schizostylis*, all of which succeed well and flower regularly at their appointed seasons.—EDWIN JACKSON, *Llandegai, Bangor.*

## SHORT NOTES—FLOWER GARDEN.

**The winter Heliotrope** (*Tussilago fragrans*) has been conspicuous for the last fortnight, owing to the number of flower-spikes which it has sent up this year earlier than usual. It is much liked for its peculiar fragrance. The best position for it is a narrow border close to a pathway, where its roots can be confined with slates or tiles; otherwise it runs about everywhere, and is worse to get rid of than many weeds.—J. C. C.

**Valeriana Phu-aurea.**—The golden-leaved form of this old plant promises to be of great value for spring bedding. We are short of thoroughly hardy and effective golden-leaved plants for that purpose, and this golden *Valeriana* which grows quickly, and takes on a fine golden colour early in spring, comes in to supply a decided want.—R. D.

**Transplanting Funkias.**—Will the large varieties of Funkia succeed if transplanted in spring?—W. S. F. [Yes; spring is the best time to transplant these plants, provided it is done before growth commences.]

**Planting Crocus bulbs.**—When should *Crocus nudiflorus* and *C. Imperati* be planted, and in what soil?—W. S. F. [Plant now at a depth of about 4 in. in deep loamy soil.]

**Packing Lily bulbs.**—What is the best way to pack Lily bulbs for transit here from India?—W. S. F.



## THE ROCKET CANDYTUFT.

Of the many sorts of Candytufts now grown the varieties of *Iberis umbellata* are no doubt the most popular, for they possess a wide range of variation in colour, and owing to careful selection varieties of dwarf compact growth and extreme floriferousness have been obtained. What is known as the White Rocket Candytuft is an extremely fine form of *I. coronaria*, a species nearly allied to *I. umbellata*. In good soil it grows some 12 in. or 16 in. high or more, but there is a very dwarf variety of it called *pumila* that only grows 4 in. or 6 in. high, and forms spreading tufts 1 ft. or more across. The flower-heads are large and dense, like that shown in the annexed engraving, and in summer when the plants have become established they are literally masses of snowy blossoms. The Rocket *Iberis* is easily cultivated; all it needs is sowing in moderately good soil in the spot where it is to bloom. If transplanted it must be done when the



Rocket Candytuft (Giant Snowflake). Grown at Palace Park Nurseries, Rothesay.

plants are very young. The flowers from which our drawing was made were sent us by Mr. Cuthbertson, of Rothesay, who calls it the Giant Snowflake. It is a very fine variety, the flowers being pure white and the spikes 4 in. or 5 in. long. So showy a plant which can be raised from seed sown either in autumn or spring cannot be too well known.

## NOTES FROM NORFOLK.

*Aralia japonica* (syn., Sieboldi).—This is well worthy of the praises bestowed upon it in THE GARDEN (p. 538). In my cold, dark, outer hall or porch it is the only plant that flourishes for any length of time. Two *Aralias* have now stood and thrived for nearly six years in what is a charnel house to all other plants, even to Ferns. Besides the necessary watering, an occasional wiping of their leaves with a soft rubber and an annual top-dressing is all they require. Each year they increase in Palm-like beauty, always attracting notice. "Joys for ever," they brood over the fugitive fry arranged beneath them.

It is not right, perhaps, to question a lady's word, but I think that *Clematis graveolens* is a dull (anything but "gay") deceiver, worthy only of the corner or the wilderness. Both in flower and seed it is inferior to our good old countrywoman *Clematis vitalba*, or Traveller's Joy. Here *C. graveolens* is perfectly hardy and flowers well (for it) in the background of an ordinary border.

*Exogonum Purga* so far has baffled me. It thrives well and is still green against a south wall. For three years it has shown promise of bloom; this year it opened one flower. I yet trust, when hotter summers revisit us, to see it in its glory. I have half a mind to risk leaving the tuber in the ground this winter, well protected, in the hope that (supposing it lives) flowering may be expedited next season.

What a November this is! If your patience and space would permit I could enumerate full eighty varieties of plants now in bloom in my own garden. Other gardens in this parish would, I believe, swell the number up to the hundred.

*Dahlia glabrata*. I can well credit to be half hardy. It is the first *Dahlia* to bloom; consequently, as you say, it ripens its tubers well. Of all my single *Dahlias* packed carefully in sand in the one box and stored so safely, as I imagined, in an unused bedroom, it alone survived the frosts of last winter; all its bed-fellows were dead. Surely from such a hardy mother some strong and beautiful sons and daughters may be expected!

NORMAN.

## THE INDOOR GARDEN.

## WINTERING STAPELIAS.

I AM much concerned about the safety of my plants of this genus, and am anxious to know the treatment under which they are known to thrive best in winter, for it is in the winter that the most valuable, and therefore of course the most delicate, are so apt to melt away, the summer being much more favourable to them—with me, at all events. I have endeavoured to get a little information out of people who profess to succeed with *Stapelias*, but all it amounts to is "keep them dry"—bake them, in fact. Now, as far as my experience goes, *Stapelias* will not thrive—nay, more, they will not live—under that eternal baking system. Invariably with me a plant begins to rot if it is kept dry long. Of course, there are some species that will withstand even bad usage, but, unfortunately, they are not the "upper crust." It is those dainty species, such as *S. Curtisi*, *S. Bayfieldi*, *S. Massoni*, *S. mastodes*, the allied *Decabelones* and *Hoodias* that puzzle me. My system of cultivation for these plants is simply this: The freer-growing species, such as *primulina*, *lepidia*, *Bufonia*, *europæa*, &c., I pot in a mixture of rich loam and leaf-mould, with plenty of coarse sand and a little brick rubble—a mixture in which they grow well, and are easily preserved through the winter. In summer they are watered as liberally as one waters *Pelargoniums*, and in winter they are never allowed to become dry. Now this treatment, although it would suit the more delicate species in the summer for a short time, yet before Christmas came they would have disappeared. I have, therefore, to give them a great deal of coaxing and coddling—yes, coddling—and I am certain that, in spite of my endeavours to please them, I am killing them with kindness. Some of the species, I believe, do naturally rot at the base yearly; the stems fall down, emit roots, and send up fresh shoots, and by this means the plant is increased naturally. Yet at home, in their own nooks and crannies in the hot deserts of Africa these plants sometimes attain a large size, judging from figures, descriptions, and the large pieces sometimes imported. What gems there are amongst them, too, as anyone may see who has access to Masson's or Jacquin's excellent figures of these plants. Some object to them on account of their unpleasant smell; but who that has seen the splendid *Decabelone Barklyi* flowered at Kew last year will refuse praise for such plants? Allow me, therefore, to appeal to some of the few cultivators of these interesting

but little understood plants for their views as to their cultivation. B.

## BROMELIADS IN FLOWER.

THE fact that these beautiful plants are becoming more in favour in this country than they hitherto have been is corroborated by their being more extensively cultivated in nurseries. In the General Horticultural Company's nursery at Anerley a spacious house is entirely devoted to them, and at present several kinds are either in flower or furnished with brilliantly coloured floral leaves or bracts that accompany the flower, and which long anticipate it and remain in a good condition till long after the blossoms are gone. The most noteworthy of these are *Æchmea fasciata* or *Billbergia rhodocyanæa*, as it is called in the nursery. Its stout flower-spike rises erect from a tuft of foliage arranged in a vaseform manner, and is terminated by a large dense cluster of bracts of a bright rosy carmine colour. This head of bracts has been developed for a year and still is in good condition. The blue flowers that issue from the axils of the bracts appeared last summer, and have long been withered. This exceptional persistency of floral bracts is remarkable, and adds to the decorative value of the plant. *Æchmea* (*Lamprococcus*) *Weilbachi* is finely in flower, and the bright scarlet membranous bracts are in fine contrast to the rich blue purple of the flowers that are borne on an irregularly branching spike. There are various kinds of *Nidularium* in flower, the finest being *N. spectabile*, in thick, vivid crimson bracts arranged in a cut-like manner; also *N. fulgens* and *N. princeps*. *Vriesia brachystachys* and *V. psittacina* are both remarkably handsome, especially the former, which has broad, flat spikes of floral bracts of bright red yellow, a combination of colours that more resembles the glowing plumage of some of the tropical parrots than do the colours of *V. psittacina*. Another bright species is *Caraguata lingulata*, which, like the *Vriesias*, is of dwarf growth, having a compact tuft of leaves, from the centre of which springs a conical mass of bracts of a brilliant crimson that forms a striking contrast to the foliage. These Bromeliads are specially well adapted for adorning rooms in combination with other plants, as they are in no way injured thereby, and they retain their beauty for such a length of time. W. G.

**Christmas Roses.**—Some plants of these that had been growing all the summer in good loam under an east wall, and had made an excellent growth and become full of flower-buds, were lifted a month or so ago, put into pots that would just take the roots, and placed in a cool greenhouse. The mild weather and bright sunshine have worked wonders, and the large flowers are now expanding, there being from twenty-five to thirty on each plant. No doubt it would be best to leave the plants out-of-doors and cover them with a glass light or some such contrivance; but as the weather is now so precarious and frost or snow may set in at any time, it is prudent to take care of what one has. It is best to lift the plants just as the flower-stems have risen a little and pot them. Some who grow the Christmas Rose for its flowers at mid-winter lift clumps, pot them, and put them on a high shelf close by the glass in a brisk heat, and so force them into flower, but the blossoms are never so good as those that expand more naturally. No one who flowers the Christmas Rose in pots should allow them to remain in the pots all the summer. It is much the best to prepare a nursery bed, divide the roots, plant them out, and allow them to remain for two years to get thoroughly established and then use them again, or wait a year till they become strong and large. Two or three batches of roots should be grown so that some can be resting while others are going through the forcing process.—R. D.

**Fern-leaved Primula The Queen.**—This is a new variety produced by Mr. J. Tomkins, Sparkbrook Nursery, Birmingham, at the recent exhibition of the Birmingham Chrysanthemum



Society, where it was much admired. Six plants of it were shown, all of large size and vigorous growth, and bearing flowers of that grand shape and substance of petal which characterise Marquis of Lorne, a production of the same raiser. Mr. Tomkins appears of have worked into a new type of Fern-leaved foliage, in which the leaves are shorter than in the old type, but much broader, and they retain the Fern-leaved character. All the varieties of the new strain have a very vigorous growth, and are constitutionally to all appearance everything that can be desired. Perhaps at no other show (we might, we think, go further, and say that perhaps in no other town) can choice Primroses be seen in such fine form and so numerous as at the Birmingham Chrysanthemum show. The plants are of large size and superbly grown and flowered. This holds true of the double varieties also. The growers about Birmingham appear to take a deep interest in *Primula* cultivation for autumn flowering, and at their usual autumn competition the fight for supremacy is a very keen one. It is far more a question of culture than of strain, and no cultivator now-a-days attempts to grow a bad strain of *Primulas*.—R. D.

#### Baskets of plants at exhibitions.—

How good an effect can be produced by a judicious grouping of plants was shown by Mr. R. H. Vertegans, of the Chad Valley Nurseries, Edgbaston, at the recent autumn show of Chrysanthemums held at the Town Hall, Birmingham. Instead of setting up a group of flowering plants after the usual stereotyped style, Mr. Vertegans filled a number of round baskets with various subjects, at the same time draping the baskets with evergreens. One basket was full of richly coloured plants of *Poinsettia pulcherrima*, another with *Calanthes*, the rose-coloured *C. Veitchi* being conspicuous among the pale coloured varieties; another had different coloured *Bouvardias*; a fourth the charming winter-flowering *Begonia insignis*, with an edging of a bright zonal *Pelargonium*; another red, white, and variegated *Azaleas*; its neighbour had *Rivina humilis*, edged with white *Primulas*; and lastly a basket, *Sisyrinchium Millefolium*, a very handsome and elegant foliaged plant from the Canary Islands, which is said to be nearly hardy, and should be grown cool. It appears as if it would make an excellent table plant of a very pleasing character. In this way small plants can be used with excellent effect, and a very pretty and attractive display can be made.—R. D.

#### *Poinsettias* losing their leaves (p. 548).

—Experience tells me that *Poinsettias* drop their leaves after turning brownish or yellow, when the roots are in a bad state. Last winter I had plants which looked apparently healthy, but leaf after leaf gradually dropped. In spite of this, however, they developed their flower-bracts. Examining the ball, I found the drainage defective, the soil wet, and a great part of the roots dead, or of a yellow instead of a white colour. This mishap will occur with *Poinsettias* if allowed to get dry, even one day, and then over-watered. *Poinsettias* while growing should be kept neither dry nor wet, but in an equable moist state. During the summer time I grow my *Poinsettias* out-doors in a cold frame, fully exposed to sun and air, the lights being only put on to protect them from hail or heavy rain. Under this treatment they do very well, but when put in the stove they dislike the dry heat given off by the flues with which our houses are at present warmed. If attention, however, is paid to keep the air moist they succeed. As to *Gardenias*, I keep them during summer in a frame heated by leaves and manure.—E. HINDERLICH, *Neues Palais, Potsdam*.

**Propagating Chrysanthemums.**—They can be propagated from the rooted side shoots, that with proper treatment and good feeding with liquid manure are plentifully produced from this time forward, where a temperature above 40° can be maintained. When put into a sandy medium they are established in a week, but few require them so soon, and fewer still approve of this method of

propagation, especially for show purposes. It has its merit, however, of certainty for amateurs. I have been putting in cuttings from the young side (or sucker) growths during the past week in 2 ft long by 10 in. wide, and 4 in. deep boxes. These dimensions are convenient for lifting into and out of cold frames, where I put them, as I do not think good cuttings, say, 3 in. or 4 in. long and fairly matured, should have any heat, except what comes from a bed of leaves. The soil was rich, and had 1 in. of river sand on top. I never water, and have neither mildew nor damping off. —W. J. M., *Clonmel*.

**Lopezia coronata.**—This old, but useful Mexican annual appears to be in some danger of being relegated to the limbo of neglected plants. By means of proper management it can be had in flower at mid-winter, which makes it all the more valuable. Mr. Kneller, the gardener at Malshanger Park, Basingstoke, grows it with great success. It has a *Fuchsia*-like habit of growth, and it is not difficult to have plants of it of large dimensions in bloom at Christmas. I have seen them at Malshanger Park from 3 ft. to 4 ft. through and as many high, and when covered with their pretty red blossoms, a well grown plant of it is a charming object. Mr. Kneller takes cuttings from the young growth in March, strikes them in a gentle heat, and grows the plants in pots; in June he turns them out in the open ground, where they remain until September, when they are lifted, potted, and placed in a gentle heat. This brings them nicely into flower about Christmas. There are old plants that deserve a better fate than neglect, and this *Lopezia* is one of them.—R. D.

#### STRAW MATS.

THOSE who have employed straw mats for covering pits, frames, or glass structures generally will, I feel sure, be ready to endorse Mr. Harpur Crewe's recommendation of them. There is, however, a vast difference between the rough, loosely made mats that are often seen in use and those made in a thorough workmanlike manner. In the first place the mats as usually made in this country are too thick; the strings are too far apart, and the straw is not of the right quality; the consequence is that when they get wet through in winter, they take a long time to dry, and therefore quickly decay. I do not know how large the Aston-Clinton mats are, but if they run anything like 6 ft. by 4 ft. they cannot be considered dear at 2s. 2d. each. The employment of unthreshed straw is a step in the right direction; it is indeed the only way to ensure a perfect mat, as straw that has been bruised by the flail or crushed by the threshing machine does not throw off rain as it should do, and soon rots. I have never been able to obtain anything better than hand-threshed straw, but with this I have made mats that with something less than ordinary care lasted three winters. Good Wheat straw will make mats, but Rye straw is far better and lasts longer, especially if cut just before it comes to maturity, as it is then tougher and not so ready to break to pieces when in use, as would otherwise be the case. Those who would like to make their own mats should, if possible, grow the straw for them, as it is a matter of some difficulty now-a-days to get any that has not passed through the threshing machine, and it is utter waste of time and money to make mats of this torn and mangled material. The strings should not be more than 6 in. apart, or the straw will be apt to bulge between them; and not more than five straws should be laid in at a time. This will render the mats uniform in thickness and firm to the touch.

Taking into consideration the fact that a well made straw mat will keep out at least three times as much frost as Russian mats, and that when well cared for they will last three times as long, it will be seen that if they can be purchased for about 2s. each, they will be cheaper in the long run than Russian mats. We find that in making them at home they cost about one halfpenny per square foot for material, and a man or woman working briskly would get through some 60 square feet in a day; that is doing all; but by having a

boy to hand straw nearly double that amount could be accomplished. In Switzerland a mat about 6 ft. by 4 ft. costs about two francs, but there, as well as in France and in Germany, they are mostly made by women employed on the place, or by the outdoor hands in wet or severe weather.

In trade establishments where there is an indoor and an outdoor department, the outside hands might in inclement weather turn to mat-making, a brisk and cleanly employment that men would like, and which would be much more profitable than a great deal of the work that they do when obliged to go under cover. Some I know object to straw mats on the score of untidiness, as when they begin to wear small pieces break off and drift about, but in trade establishments and market gardens this objection would not have much weight, and even in private gardens there are places where utility rather than neatness should be considered. J. CORNHILL.

*Byfleet.*

#### A JAVA MOUNTAIN AND ITS VEGETATION.

AFTER spending some days in the neighbourhood of Buitenzorg, I decided on visiting Gunong Gede, a lofty mountain twenty-five miles distant. With the object of saving both time and money, I engaged a seat on the mail cart, which left Buitenzorg at sunset. This way of travelling is by no means comfortable. Two ponies are used, tandem fashion, and relays are provided every five miles, but in some places the road is so steep that they are quite incapable of drawing the empty cart; in such places buffaloes are substituted, in very bad places four together, when the progress is far from rapid. Imagine yourself slowly toiling up one of these hills in this way to an altitude of upwards of 3000 ft. No sound breaks the silence of night but the slashing and shouting of the drivers as they urge on their unwilling cattle. The mail cart driver, having nothing to do with the management of the buffaloes, falls asleep, while the guard, in a most uncomfortable position behind, soon follows his example. The buffaloes have been changed four times since commencing the ascent; the bamboo torch, which showed something of the road when rattling along behind the ponies, appears to have gone out, and the air begins to feel uncomfortably cool. On reaching the top we find fresh horses, and, what is just as acceptable, a shed with a cheerful fire, at which we warm ourselves some minutes before resuming our journey. The driver and guard complained greatly of cold, and I, although much better provided, found the midnight air quite keen. From this point we had to descend more than 1000 ft. to the village where I intended halting to procure a guide. There is a small hotel here, supported principally by the government, for convalescent officials, to which I eventually gained admission. By daybreak I was out, for in descending the hill I had noticed thousands of white flowers on either side, but it was too dark, and we were going too fast, to determine what they were. To my disappointment they turned out to be *Daturas*; I had hoped to find something less common. They grew everywhere by thousands, and I was informed that a great many had been cut down near the village, as they were considered unhealthy when too near houses.

In the hotel garden many plants grow luxuriantly, and the temperature is such, that to stroll among them is simply delightful. *Musa cocinea* struck me as being a fine thing for an Indian garden. *Dendrobiums*, *Cœlogynes*, &c., which the natives had brought in from time to time, were placed in various nooks and corners. On one of the larger trees I saw a fine mass of *Vanda tricolor* thriving amazingly. Here I made the acquaintance of Dr. Van Nootan, a gentleman connected with the Buitenzorg establishment, who proposed going to see a sort of trial ground near, at an altitude of 5000 ft. It is not in grand trim, as only Malays have been in charge for some time, but I understand that Dr. Treul, who has recently been appointed to the directorship, intends improving this portion of his charge and extending the collection.



The climate is everything that can be desired during the dry season, but strong winds are prevalent during the rainy season. Many plants common in English gardens do well, such as *Lobelia cardinalis*, *Aucuba japonica*, *Fuchsia fulgens*, *Begonias*, *Salvias*, *Gladioli*, and numerous others. A plant of our common English Daisy was pointed out to me with especial pride. Round about growing in great profusion were *Thunbergias*, *Solanums*, and a *Sambucus* not unlike *S. niger*. As my principal object in visiting this neighbourhood was to ascend the mountain I lost no time in arranging for a start. Twenty-five years ago, when Mr. Lobb visited this district, there was a tolerably good road and a small wooden house on the highest point, so that the natives could make a fire, and remain without suffering from cold. At the present time the house is decayed and the road quite overgrown, but in spite of this it is the easiest bit of mountain climbing that has fallen to my share. At an altitude of 8000 ft. my men constructed a hut, and covered it with large fronds from an adjoining thicket of *Alsophilas*. From this place both peaks of the range are easily reached by the traveller. The Gedeh is volcanic, and at no far distant time has been in eruption; scarcely anything grows as yet among the stones and ashes for at least 1000 ft. from the top. The two first plants, reckoning downwards, are a Composite with yellow flowers and silvery grey leaves, and a species of *Ericaceæ* with white flowers. Sulphurous steam, in such quantity as to render approach dangerous, except from the windward, is being constantly emitted. Standing on the brink of the crater, the noise below resembled that of an immense body of boiling water. In the early morning there is a magnificent view from this point (9400 ft.), but by nine or ten o'clock the mist comes rolling up from below, and obscures the view so completely that at times we could not find the path.

Another day was spent in examining the Pangrangoe, which is higher than the Gedeh, and far more interesting to the plant lover, being clothed with vegetation to the very summit. On the top, at an altitude of 10,000 ft., several plants occur that remind one forcibly of home. Amongst them were a small blue Violet, very similar if not identical with our Dog Violet, wild Strawberries (which may have been in the first instance introduced), a yellow Primula, and a *Lonicera*-like plant with yellowish flowers. In fact nearly all the plants blooming near the top had yellowish flowers. A little lower down Orchids and Ferns are abundant on old, exposed, mossy trees. Near our hut grew a small red *Rhododendron* of straggling habit, and from 1000 ft. to 1500 ft. lower, *Rhododendron javanicum* on damp mossy trees. From this point, extending downwards to an altitude of 4000 ft. to 5000 ft., grows one of the commonest and prettiest plants seen in the district, viz., *Agalmia staminea*, long since introduced to our stoves, but very seldom seen at the present time, owing probably to the difficulty of growing it. Other members of this family are strongly represented in this and the adjoining islands. Orchids are plentiful and in great variety almost from the base to the summit, but as natives have long been employed in this neighbourhood to collect everything they can lay their hands on for Buitenzorg, there remains probably few things of value unknown; *Phajus indigoferus*, *Cœlogyne speciosa*, *Saccolabium Teymanianum*, *Cypripedium japonicum*, one or two species of *Anæctochilus*, and a curious *Liparis* were the most noticeable. A flowering plant was seen occasionally of an unknown genus, and here were Ferns everywhere of all sorts and sizes, from tiny species 2 in. or 3 in. high up to 15 ft., and in some cases even higher.

C. CURTIS.

**The Karaka Nut.**—In answer to one of your correspondents who wishes to know something about the Karaka Nut of New Zealand (see GARDEN, 10th September last), I have to say that it is a magnificent evergreen with glossy foliage and yellow fruit 1 in. long, which is extensively used by the natives after steeping it in water for a day or two to destroy the poisonous properties

of the kernel. It belongs to the Order *Anacardiaceæ*, and the botanical name is *Corynocarpus laevigatus*. It is known in Victoria as the New Zealand Laurel, where it sometimes attains the height of 30 ft., spreading in proportion. In the dank valleys of New Zealand it often grows to at least 50 ft. Cattle are very fond of the foliage, which is said to be fattening. The flowers are inconspicuous.—WILLIAM R. GUILFOYLE, *Director Botanic Garden, Melbourne.*

### MARKET GARDEN NOTES.

**Grapes and Cyclamens in the same house.**—Market growers find, as a rule, that the only way to ensure perfection of culture is to grow one kind of plant or fruit in a house, fitting up or building the structure in the manner best adapted to fulfil the requirements of whatever they may wish to cultivate. Hence one seldom sees in market gardens that indiscriminate mixture which is generally more or less a feature in private establishments. We have found, however, that under certain conditions Cyclamens and Grapes may be grown together in a very satisfactory manner. A small house planted with Hamburgs was filled with Cyclamens potted off early in March, a growing temperature being maintained for them during the spring months. The Vines broke in April, and the fire-heat used to forward the Cyclamens brought them along, so that they ripened and were cut early in autumn. It was found, too, that shade caused by the foliage of the Vines, increasing in density as the days grew longer and brighter, was by no means too much until the middle of June, and then the Cyclamens were taken out into their summer quarters in the cold frames. It will thus be seen that for three months the two crops were brought along at the one expense for fuel. Whenever this method of culture is attempted care must be taken not to allow the Cyclamens to remain under the Vines long enough to draw, but if sufficient air is given they will not do so until the Vine leaves attain their full size. Cyclamens are often started in January, but if sown the previous summer they need not be fired until February or March.

**Ficus elastica planted out.**—There is a great demand for this fine-leaved plant at the present time, and if it could be sold at a cheaper rate it would undoubtedly become even more popular than it now is. In some parts of the Continent it is planted out in the open air, and I have grown specimens from cuttings struck the previous winter to a height of 3 ft. by the autumn, they being all sold at from 4s. to 6s. each—a paying price for only some twelve months' cultural care. We cannot grow them in the open in England, at any rate not quickly enough, but we could plant them out under glass, and I would advise those who grow this plant for profit to try this system, as specimens double the size are obtained in the time, at less expense and labour than pot culture involves. I strongly recommend the planting out in light rich soil, having found that, when potted in the autumn, the roots are more fibrous when thoroughly rotted manure, some two or three years old, and leaf-mould form the basis of the compost than when a more close loamy soil is employed. Carefully lifted and placed in a close warm house, not a leaf will discolour or fall.

**Cyclamen blooms.**—The time has now arrived when almost any quantity of these will find ready sale, bright coloured flowers being most in request. The blooms should be tied up in bunches of a dozen together, gathering them some few hours before packing, and putting them in water, as by so doing they absorb a considerable amount of moisture, and bear the journey better than when cut and packed at once. The colours should be tied separately, the light coloured ones together, and the bright ones by themselves, although it is as well to put up a few mixed bunches in each lot, as salesmen have all sorts and conditions of customers to suit. The best way of packing is to lay the bunches in a single layer in a shallow box, merely lining the same with tissue paper. If the box is

tightly fastened, the flowers will come out as fresh as when gathered. Where a considerable quantity has to be cut, two layers may be put in the same box, laying a sheet of wadding smooth side next the flowers on the bottom layer, and a piece of tissue paper on that. Be sure that the flower-stems of the top layer are quite dry before putting them in, or the moisture will spot the flowers underneath. From the middle of December until the end of February is the best time for Cyclamen blooms in Covent Garden. The price then ranges from 3s. to 6s. per dozen bunches, twelve flowers in a bunch. After that time they rapidly run down to 2d. per bunch, and in April and May are difficult to dispose of at that price.

**Small Ferns.**—Some growers of foliage plants grow a considerable number of the common kinds of cool-house Ferns, such as *Pteris arguta*, *cretica*, *albo-lineata*, *serrulata*, *Nephrodium molle*, &c., in 2½-in. pots, bringing in a few dozen every market morning arranged in trays containing one dozen each. These miniature specimens find a fairly ready sale at prices ranging from 2s. 6d. to 4s. 6d. per dozen.

J. CORNHILL.

### THE GARDEN FLORA

#### PLATE CCXV.—SPARAXIS PULCHERRIMA.\*

This plant is so remarkably distinct from everything that we have been in the habit of looking upon as a *Sparaxis*, that its claim to be a member of that genus has often been the subject of comment. It is a native of the Cape of Good Hope, and was, I believe, introduced and distributed by Messrs. Backhouse, of York, who described it as being very graceful in habit and as growing from 2 ft. to 3 ft. high; a height which seemed excessive for a *Sparaxis*, but which is nevertheless much short of what it actually attains. When it first flowered in Guernsey, in 1872, it reached the height of 9½ ft.; the graceful character of the plant may therefore be conceived, and as many as 700 spikes have sometimes been in bloom in a bed 30 ft. by 12 ft. at one time, producing a veritable fairyland, as far as floral grace is concerned. The first form that flowered was the rose-coloured one, and this probably is the most beautiful; then the purplish-crimson, and after that seedlings innumerable and of all shades; some being almost white, some striped, and some crimson. We have many times attempted to cross this and the *Sparaxis grandiflora* type, using both as seed-bearing parents, but have always failed; in fact the two plants have no affinity.

**CULTURE.**—The best position for *Sparaxis pulcherrima* is in clumps among shrubs, where its whip-like spikes rise up gracefully, and are seen to good advantage; the shrubs, too, afford the *Sparaxis* shelter. It is a plant which will well repay a little care the first year or two. In such a position *Tritonia aurea* might be associated with it, and as they flower at the same time they associate well together. I believe it to be about as hardy as the *Tritonia*, *Montbretia*, *Potsii*, and similar plants, though unfortunately more difficult to establish in the first instance. It has a great objection to removal, which, when it must be done, should be done as soon as the flowers begin to fade. Immediately after this stage stout fleshy roots are emitted from the bulbs, and if these are seriously broken or bruised much injury is the result. Its general appearance would lead to the supposition that it is a water-loving plant, but it succeeds well in dry and damp positions, provided it has a rich friable soil or is stimulated with liquids when beginning to grow. It succeeds in and probably requires a

\* Drawn from specimens 7 ft. high, grown in the Caledonian Nursery, Guernsey, August, 1881.











much stronger soil than is found to answer for the *Sparaxis grandiflora* family.

*Sparaxis Thunbergi* I have never succeeded in flowering, but have heard that it is but a dwarf form of *S. pulcherrima* with shorter flowers, and nearly white. I find amongst seedlings of *S. pulcherrima* long and short flowers, some with the perianth slightly closing towards the mouth and others reflexed. H. C. S.

Guernsey.

## GARDENERS' FRIENDS.

### THE SAND WASP.

(*AMMOPHILA SABULOSA* & *CERCERIS ARENARIA*.) CLOSELY allied to the little bees (the Crabronidae), on which an article was given in *THE GARDEN* on November 5, are the two insects whose names stand at the head of this article. They, like their congeners just mentioned, are of very great service in gardens and elsewhere in destroying grubs, caterpillars, and small insects of various kinds, or rather in capturing them as food for their future grubs, which are carnivorous. *Ammophila sabulosa* (fig. 1) is a remarkable looking insect, and can hardly be mistaken for any other, except members of the same genus. The female generally makes her burrows in sandy places, and it is marvellous how an insect can make excavations in hard sand in the way they do, considering they have only their mouths and feet to work with. Fancy a man with no tools trying to make a hole in the face of a sand pit only large enough to shelter himself in from the rain, and yet these insects will burrow to the depth of some inches. In forming these burrows the female uses her jaws, which are long and powerful, and every now and then, when she has scraped off as much sand as she can carry in them, backs out to the entrance of the hole, flies off 1 ft. or so, and scatters the sand in a shower. At the end of each burrow she forms a chamber or cell, in which she places a grub or caterpillar, having first stung them to death, or at any rate rendered them insensible; she then deposits an egg on the first victim, and proceeds to fill up the cell with three or four more caterpillars, treated in the same manner as the first. On leaving the cell to procure additional prey she carefully closes the entrance with a few large grains of sand. In favourable weather, and if not otherwise hindered, she is able to store her cell in the course of a few hours; having completed one cell and carefully closed the opening, she at once sets to work to construct a fresh one. These are very hard-working insects, and collect comparatively large caterpillars, frequently those of the Noctuidæ, which are often most destructive in gardens.

Another species, *A. viatica*, which is also very common, collects spiders; both these species are widely distributed, and may be found in most sandy situations, where at times they are very abundant. The late Mr. F. Smith mentions that he has found *A. sabulosa* on the sand hills near Deal in immense numbers on Thistle heads. The genus *Ammophila* only contains three species, and is classed in the family Sphegide, which is a very small one, containing only six members, and of these two are very rare. *Ammophila sabulosa* (fig. 1) may be described as follows: Its length is about  $\frac{7}{8}$  in., and it measures across the expanded wings about 1 in.; the insect is entirely black with the exception of the second, third, and part of the basal portion of the fourth joint of the body, which are reddish; the head is large and square and furnished with a pair of powerful jaws; the wings are short compared with the length of the body, and are somewhat smoky in colour with brown veins; the legs are long with very hairy feet; the first two joints of the body are

very long and slender, and make it appear out of all proportion with the rest of the insect. The males are slightly smaller than the females. The grubs are white and legless, and when full grown become pupæ or chrysalides, which are enclosed in an outer cocoon of a thin white substance. The common sand wasp, *Cerceris arenaria* (fig. 2), I have joined with *Ammophila sabulosa* in this article, as their habits are very similar, though they differ very much in appearance, and are not very nearly allied to one another, as three families intervene between them, one, that which immediately precedes *Cerceris*, being the Crabronidae.

The sand wasps are not true wasps, though very waspish in appearance; but they may be easily distinguished from the true wasps by the shape of their bodies, which, instead of tapering gradually to a point, are narrowed at the junction of the joints, giving the joints a swollen appearance. They are widely distributed insects, and are very common in most sandy localities; they make their appearance about the middle of July, and are most useful in collecting various small beetles, most of which are more or less



Fig. 1, *Ammophila sabulosa* (natural size); fig. 2, *Cerceris arenaria* (natural size).

destructive to plants. Unlike most insects which prey upon others, they are not at all particular in always selecting victims of the same species with which to feast their grubs, but even collect beetles of different genera; they usually select weevils of different kinds, some of which are so hard that it is quite difficult to pierce them with a pin, yet the grubs of the sand wasps manage to feed on them. It has been supposed that the sand wasps only collect specimens of the weevils which, having only just emerged from their pupæ cases, are still soft; but this is not the case, as the late Mr. F. Smith has proved that fully matured weevils are stored in the cells. He suggests that as the eggs of the sand wasps are not hatched for some days after the insects are buried, the dampness of the earth renders them sufficiently soft for the grubs to feed upon. Among the weevils collected by these insects is the Nut weevil (*Balaninus nucum*), which often does much injury to the Nut crop by laying its eggs in the Nuts, the interiors of which are devoured by the grubs, and that most destructive beetle, the black Vine weevil (*Otiorhynchus sulcatus*), which devours the leaves, and whose grubs destroy the roots of various plants. The sand wasps make their nests much in the same manner as *Ammophila*, burrowing at times to the depth of 4 in. or 5 in.

The genus *Cerceris* is classed in the family Philanthidae, and contains five species, three of which are common. They have all much the same habits, and are often found on flowers, the honey or pollen of which they probably use as food. The female of *Cerceris arenaria* is about  $\frac{5}{8}$  in. long, and measures rather more than 1 in. across the wings when fully extended; the head is black with three yellow spots on the face and one behind each eye; the antennæ are black with the third and fourth joints somewhat reddish; the thorax is black with two transverse spots

in front, a point at the base of each upper wing, a narrow line somewhat behind the middle, and a large spot on each side of the base yellow. The body is much narrowed between each joint, and is black in colour, ornamented with yellow markings, as shown in figure 2; the wings are rather smoky, with yellowish brown veins; the legs are reddish yellow, with the base of the thighs of the first two pairs and the tips of the thighs of the posterior pair brown. The male is considerably smaller than the female, measuring  $\frac{1}{2}$  in. in length; he has no yellow spots on his thorax; the yellow markings on his body are much narrower, and the yellow portions of his legs are paler than those of the female. The grubs are whitish, and are provided with a strong brown pair of jaws; when fully grown they spin a slight oval cocoon round themselves.

G. S. S.

## THE FRUIT GARDEN.

### THE APPLE.

(Continued from p. 552.)

**Gathering and marketing.**—Before we proceed to discuss the mode of gathering and packing, &c., for market, I would like to direct attention to a few matters that greatly check the development of hardy fruit culture in this country. In this district land capable of growing Apples equal to any that can be produced elsewhere can now be had at a rent which occupiers could afford to pay were they not over-weighted with taxes and tithes of which land gets far more than its share. There is, however, some hope of a decided stand being made against what is termed the extraordinary tithe, a burden that sadly requires readjusting so as to meet the altered circumstances of the times in which we live. There is yet another thing that checks fruit production even more than the extraordinary tithe, and that is the means of getting produce at a minimum cost from the grower to the consumer. At present the problem is not how to grow Apples in quantity, but how to get them to densely populated districts at a price within the reach of the working classes. It is not saying much for cheap transit and market accommodation when I state that it takes 60 per cent. off the market price of Apples, or more than one-half, to pay railway charges and salesman's commission; yet this has happened for months past in the case of what are called common culinary Apples. Surely there is room for our railways to revise their scale of charges, and salesmen their commission. With Apples at 2s. per sieve, a price at which many thousands of sieves were sold from this locality, 6d., or 25 per cent., went for railway charges, and 6d., or 25 per cent., went for salesman's commission, the grower having to pay for empty baskets being returned, labour, rent, and every other expense. This is by no means an exaggerated statement. Could not railways carry a bushel sieve of Apples at a less cost than 6d. for forty miles? And could not salesmen afford to charge less than 6d. on a 2s. bushel of Apples? Why not have a scale of charges, say 10 per cent.? Apples are generally sold by auction some time between the time when the crop can be fairly estimated and before the earliest Apples are fit to gather. During the present season prices have ranged from £15 to £25 per acre for good orchards in full bearing, and consisting of the right sorts, the majority ranging from £18 to £20 per acre, but the crop has been exceptionally heavy and prices proportionately high. The average for ordinary years is from £10 to £15 per acre. Few crops on the whole pay better than a good orchard of Apples. There are crops, as, for instance, Hops, that yield a large return some years, but on the



other hand the expenses of cultivation are heavy, and failures from blight and mould frequent.

The gathering season commences about the 1st of August, and by that time a good supply of empty sieves and half sieves sent down by the salesmen are in readiness. These are sent down in bundles of eight, four being fastened together as closely as possible by means of a cord through their rims, and four are turned bottom upwards and fastened to these, an arrangement occupying the smallest possible compass convenient for loading both on trucks and on the vans used for conveying them to and from the railway stations. The price charged for empties is 6d. per bundle for sieves, and 4d. for half sieves from London to Maidstone. A sieve is supposed to hold eight gallons ordinary measure, but it contains generally about seven gallons, for as sieves are sent packed so as to stand one on the other, they must not be more than full to the rim or slightly raised in centre. Ladders for gathering are provided of various heights to suit the trees; they are made as light as possible compatible with safety; they consist of the best seasoned foreign poles sawn down the centre and made wider at the bottom than ordinary ladders, and very tapering at the top. Heavy ladders not only bruise the branches, but are difficult to move, as the gatherers carry them erect round the tree, or from tree to tree. Bags made of stout Hop-pocketing material, with two straps to go over each shoulder and a string or buckle across the chest, are used for gathering. Thus equipped, the operator can use both hands, and will, as a rule, bring down each time he dismounts enough to fill a bushel sieve, except in the case of very choice sorts for storing, when only half the quantity is brought down for fear of bruising the fruit. The gatherer is also provided with a strong stick having a crook at one end for drawing the branches not otherwise within reach towards him. This he hooks on one of the staves of the ladder. This work is generally performed by ordinary garden labourers employed at from 2s. 6d. to 3s. per day. But in some cases it is done by casual hands at so much per sieve according to the crop. It requires strong, active men to perform the work of carrying a fifty-round ladder erect, and set it in a tree so that it bears equally its weight on several branches without injuring any of them, and so that the crop can be reached without much moving of the ladder. Men that have been accustomed to this work from boyhood will bring down double the quantity of fruit that a casual hand will do. The Apples must not be pulled off, but removed by a sharp jerk, so as to detach the stalk, an operation easily done when the fruit is nearly ripe, but vast quantities of Apples are gathered before they are fully grown, and more especially the earliest of kitchen Apples. The Keswick Codlin, a certain and abundant cropper, is grown in great quantities about Maidstone; the trees generally give two good gatherings. The first, from the middle to the end of July, consists of the most forward from the sunny side and open branches, leaving the others for a late crop; and taking the average of years I find the market price generally starts at 4s. or 5s. per sieve, and drops to 2s. or 2s. 6d. when other sorts get plentiful, at which price, as they barely return 1s. clear, they are generally left until the end of the season, when they are worth 1s. per sieve for cider, or jam and jelly, the Keswick Codlin being about the best sort for these purposes, being clear and transparent. Lord Suffield is another popular early sort, and Stone's Apple is really very early, but always realises good prices when fully grown. This is of such large size that from fifty to seventy Apples fill a sieve, and on an average are worth 1d. each wholesale.

It takes a man with some experience of packing to get these large Apples fitted in so that they do not move during the rough handling they get by rail and otherwise on their way to market. Dessert Apples are generally begun with Juneatings, Kerry Pippins, and that favourite of London retailers, the brilliant Quarrendens; the higher the colour, the higher the price. These are usually sent in half-sieves; they realise 2s. 6d. or 3s. each, and pay very well. There are, however, several new sorts that promise to become popular, notably, Mr. Gladstone, red, striped with yellow, very showy, good in flavour, and ripe in July; and Worcester Pearmain, a lovely Apple of medium size, brilliant colour, and of exquisite perfume, ripe in August and September. This is one of the Apples of the future, for I may mention that really good Apples realise fair prices, even when common ones are a drug in the market. Ribstons, Margils, and Golden Pippins always realise good prices. Soft-fleshed sorts, that have little weight and show bruises easily, do not pay. Cellini, an excellent Apple in private gardens to gather and use from the tree, is useless as a market sort; and many others might be enumerated. Many send all their crop direct to market as they become fit for gathering; some from having no convenience for storing, and some from thinking that the extra price realised in the winter months does not compensate for the extra labour involved or losses in storing. When sent direct from the trees, the gatherers empty them into the sieves, a packer follows, and tops them up, covers them with paper, and then a capping of soft straw or litter; a mixture of hay and straw makes good packing. This is secured by split Ash, Hazel, or Chestnut rods previously prepared, put crosswise two to each basket, and pushed through just under the rim, the ends being cut off close. They are then labelled and sent to market, and as a rule are sold the following day. J. GROOM.

#### FRUIT ROOMS.

THESE are not always well adapted for what they are intended, viz., to be cool, and to protect fruit from frost. Most people know what can be done by retarding Peaches and Nectarines in an ice house, and the same could be done in fruit rooms if they were properly constructed. In all well-arranged gardens there ought to be an upper and a lower fruit room, or rather a fruit room with a proper excavated vault, thoroughly well drained to exclude dampness. In the two apertures a difference of temperature could be obtained, which would be of great importance in ripening, retarding, or keeping late fruit fresh and without shrivelling. When fruit is scarce it is necessary to prolong its season as much as possible; but that cannot well be done in one room in which there is but one temperature. Take, for instance, any of our sorts of fruits; when stored in the same temperature all will come in for use nearly at or about the same time, but by having a cool cellar underneath the fruit room with easy access, a portion of each sort could be stored upon cool shelves at once, and by a little forethought a few of the riper fruit could be picked and forced on in a warmer situation, and be had quite ripe while those upon the trees were still hard, thus prolonging the season of certain sorts wonderfully. Both Pears and Apples that ripen through the winter and spring should be put down upon the cool shelves as they come in from the trees, in order to keep them fresh and plump; and darkness suits for that purpose better than too much light, while a portion of either sort can be brought up periodically, according to the demand. Being short of Apples last year, we bought some American sorts in barrels. They arrived during severe weather, and we never unpacked them, but used them out of the barrel just as required, and they kept good throughout the winter, a fact which shows clearly that Apples are best kept in a cold dark situation. Profiting by the experience thus gained, I have

stowed away some of our own home-grown sorts in barrels, but only such sorts as are expected to keep well. We have two fruit rooms here which are not quite satisfactory. The one is in connection with the hothouses, and the other was converted out of a large unused stoke-hole, and fitted with shelves both above and below the ground level. The principle being right, it does very well for a makeshift, in proof of which I have some of last year's Apples in it now. J. M.

*Chamber.*

#### THE ORCHARD HOUSE.

THE late remarkably fine weather will have afforded an opportunity to complete all repairs, cleansing, or painting which may have been found necessary in this structure. In cases in which it may have for a time been used as a greenhouse for Chrysanthemums and similar hardy plants, the various fruit trees in pots which after being repotted or surface-dressed, as might be found necessary during the month of October, will either have been placed closely together in some part of the house or plunged or placed in a suitable situation in the open air. If the former it would be found necessary in order to check evaporation and prevent the soil from becoming too dry to cover up the pots with some light, littery material, and something similar would also be necessary as regards those placed out-of-doors to prevent the soil in the pots from becoming saturated through the autumnal rains. All should now, however, before an unfavourable change in the weather sets in be placed in their proper positions inside the house. In cases in which the trees are in comparatively small pots in proportion to their size, and where the pots are full of roots it may be advisable to place them upon the surface of a prepared bed or border of rich soil, into which the roots may be allowed to enter through the bottoms of the pots. When treated in this manner any approach to over-luxuriance is easily checked by raising one or both sides of the pot, and severing a more or less portion of the roots which have entered the border below the pots. In the case, however, of newly repotted trees it is advisable to confine the roots to the pots during the first season at least, and to effect this it is only necessary to raise the pots above the surface of the border upon three bricks placed perfectly level. Some of the most successful growers of fruit trees in pots prefer confining the roots to the pots, even when the latter are filled with them, trusting entirely for success to rich surface dressings and manure water; but success may be and is frequently attained by carefully following either system. When the trees have all been placed in their proper positions the spaces between them may be occupied with the various kinds of hardy plants intended for forcing, but all tender species must of course be excluded, as orchard houses are not generally provided with a heating apparatus of any kind; nor is it required, as the trees can hardly be kept too cool in winter. An early development is by no means desirable, and it is only during considerable depressions of temperature that the structure need be kept entirely closed. Air, however, should seldom or never during the winter and early spring months be admitted at both sides of the house at the same time—I am supposing the house to be a span-roofed one—as nothing is more injurious than placing fruit trees in a strong draught. Indeed, if the top ventilators are kept open, it will seldom be necessary to open the side ones during winter and early spring. In order, however, to check evaporation, and so prevent the soil in the pots from becoming too dry, and also to prevent frost from penetrating it to any great extent, it is advisable to surround and cover the pots with light litter of some kind.

**Pruning and dressing.**—Such trees as the Pear, the Plum, and the Cherry may either be pruned now, or the operation may be deferred until spring, when the buds begin to swell. But such trees as the Cherry are often infested with the black or Cherry fly, and in order to destroy



as far as possible the larvæ of this troublesome pest it is necessary to dress such trees as soon as they are pruned; and as a strong dressing, if applied when the buds are considerably advanced, is not unlikely to prove injurious to them, on that account it is advisable to prune and dress such trees as soon as the leaves have fallen. Infested trees of the Peach and Nectarine may also be so treated, although a later period, when wood and bloom buds can be readily distinguished, is generally the best time to prune them. The winter dressing for fruit trees of all kinds should not be made too strong, in case of injury resulting to the buds, and care should be exercised in applying it. A solution of Gishurst compound, at the rate of say 6 oz. or 8 oz. to a gallon of hot rain water, will not be found to be too strong, and will generally be effective; or a composition may be formed of about equal portions of soot and flowers of sulphur, to which should be added tobacco water until it is of the consistency of ordinary paint; with this the trees should be painted, as it were, with an ordinary soft brush, beginning at the lower portions of the trees and finishing with the young shoots, drawing the brush always in an upward direction, which is less likely to injure the buds. Although one application of this dressing may not always be effective in annihilating the various pests to which fruit trees are liable, it will nevertheless seldom fail to very considerably check their progress, and with the aid of syringing and fumigating, if found necessary, during the growing season, healthy fruit trees of all kinds may be kept perfectly clean. When trees become hopelessly unhealthy, which under the best and most careful management will happen in the case of trees subjected to the necessarily artificial treatment of being confined to pots or tubs, they should be discarded, and replaced by young and healthy plants, while to meet this demand it is necessary to annually, or at least occasionally, pot up a few maiden trees. This should be done about the end of October or early during the succeeding month, or even the present time, on account of the weather being unusually fine, may not be too late to do so.

**Fruits for orchard houses.**—No fruit trees are more amenable to pot or orchard house culture than the various kinds of Cherries, and none are more useful, as the fruit has the desirable property of hanging in good condition upon the trees for a considerable time after it is ripe. The Peach and the Nectarine may also be regarded as the trees *par excellence* for orchard houses. The Apricot, too, is indispensable, although it does not always succeed there so well as the first mentioned trees, and as far as possible to secure success in the production of this delicious fruit it should occupy a situation in the most airy part of the house. Abundance of air being absolutely necessary to it when in bloom, or when the fruit is about to set, without placing the trees in a cold draught, as much air should be admitted at that period as the condition of the weather will permit. All kinds of Plums succeed well in the orchard house, but as these generally succeed well in the open air, or trained to walls, it is only the best sorts of table or dessert kinds which need occupy this structure, and the same may be said with respect to Pears. It is seldom considered worth while to attempt the culture of the Apple under glass. But if this is desired the selection should be confined to a few of the finest and most ornamental of table varieties. Where the Fig is appreciated as it deserves to be, all the varieties can be readily cultivated in the orchard house, and in its case the roots should be confined to the pots, as if allowed to root into rich borders, as has been recommended in the case of the Peach, &c., the plants become too luxuriant to be fruitful. The Grape Vine may also, if desired, be grown in pots in the orchard house, but it will generally succeed better when planted out and trained over pathways or in some other situation where it does not in any way interfere with the other inmates of the structure. Grown in this manner, it is exceedingly ornamental as well as useful in the production of fruit of

fairly good quality. Only the more hardy and early-ripening varieties, however, should be selected for this purpose, such as the Black Hamburgh, Esperione, and Royal Muscadine.

Bury St. Edmunds.

P. GRIEVE.

#### INFLUENCE OF THE STOCK ON THE SCION.

HAVING great respect for the opinion of Mr. Hovey, of Boston, I should like to ask through your columns whether his experience extends to the grafting of Grape Vines, and with what results. Grape growers in this country have observed and recorded various changes in form, quality, and flavour evidently arising from the stock. The time of ripening, however, of most fruit seems more stringently fixed than many of their other qualities. Still the Paradise stock does at times tend to hasten maturity as well as heighten fertility. Facts are very much wanted as to the time gained in maturing a crop through the agency of different stocks.

Changes, if any, so effected would possibly be gradual; the tendency to change, if any, would also be greatly influenced by the extent of stock left, and probably also by such a fact as to whether any of the stocks were allowed to grow or not. With established habits as to time of flowering and ripening, it is not likely that these would be suddenly changed at the bidding of a dwarf stock a few inches in length, though some features more in harmony with the nature of the stock might be gradually acquired. Facts are very much wanted on this curious phase of vegetable life, and to be useful they should combine such points as the following: name of stock and of scion, length and character of both, date of working, soil and site; any and every peculiarity or change observed in the produce affecting in any degree the size, form, colour, flavour, or time of ripening of the same. If facts of this character could be collected alike in Europe and from America, then we might be in a better position to judge whether or not the season of fruits can to any perceptible extent be modified by grafting or budding on earlier or later species and varieties. In that most striking of all graft hybrids the *Cytisus Adami*, the three sorts bloom almost, if not quite abreast, which seems to prove that time is far more firmly fixed than form; while as to colour it is so fugitive as to count for little or nothing in the determination of such questions.

D. T. FISH.

#### NEWLY PLANTED RASPBERRIES.

MANY when planting Raspberries leave the canes nearly their full length, which is a mistake, as instead of breaking below and forming others as they ought to do, they only start at the top and make a miserable effort at fruiting, and the result is they are not only poor then, but having formed no young canes they are in as bad a plight the following year. The best way to form fresh plantations of Raspberries is to select the stoutest and best canes with the most roots, and cut them down to within 6 in. or 9 in. of the ground, when they should be planted in rows at about 4 ft. apart. During the first year Cauliflowers, Onions, or some similar low-growing crop may be sown or planted between them, but the Raspberries should be mulched around with manure, as the great point in getting them established quickly is to afford the roots shade and prevent them from suffering from want of moisture, which the mulching does, and as the juices from it are washed down the plants are thereby greatly encouraged in their growth. As Raspberries like a little shade they will be found to do remarkably well between the rows of tall standard Apples, which, if these are at wide distances apart, is perhaps the very best place in the whole garden for them. A moderately light soil suits them best, but to enable them to bear the dry weather well, the ground for them should be trenched or broken up deeply in order that they may drive their main roots down and find moisture when the supply for the surface feeders fails. Amateurs and others often injure Raspberries by

digging amongst them; whereas the ground should never be touched beyond freeing it from weeds. Instead of digging, top dress heavily every autumn after the old canes are cut away, and leave the half rotten manure on to lie as a surfacing all through the summer. I have used seaweed with great success; it is a capital non-conductor of heat, and intercepts the evaporation of the earth's moisture better than anything else I ever tried. For supporting the canes of Raspberries nothing answers better than galvanised wire strained along the rows, to which they can be tied securely, and with the first outlay the expense is over; whereas with stakes it is annually recurring, and they are often a great trouble to get. Rather than get wooden ones I should prefer iron, and these are best for standard Roses, as they last almost for ever.

S. D.

— I notice (p. 531) Mr. Mackie's answer to this question. He answers it in the negative. But then his canes were really nice stools with good roots, very different indeed from the single ones received from nurseries at so much per hundred. There seems little doubt that the best way to get a crop of good young canes from the latter is to cut them down to the ground level in the spring, say February. The canes should not be cut at once, as probably they assist in forming roots throughout the winter.—D. T. FISH.

#### THE HAMPTON COURT VINE.

HAVING read that this old Vine has carried this season "1300 bunches of Grapes, weighing not less than 1000 lb.," "Peregrine" is naturally anxious to learn something about its culture. I think the most correct thing to say about it is that it is not cultivated at all at the root, but of course it gets such top-pruning as is essential to cropping. One great stem, coated over with zinc so that it may not receive injury, drops down into the gravel walk, over which the thousands annually pass who enter the once-sacred portals of the vinery. Beyond is an old flower garden, but no evidences of border or manure or special culture of any kind are visible, and as the main roots of such a Vine must be from some 20 yds. to 40 yds. away, I do not see how it would be possible to afford to these special feeding. Yet there is nothing particularly remarkable about this old Vine. When last at Heckfield I could but remark the enormous size of the *Deux Ans* Apple tree which stands in one corner of the kitchen garden. It is really a giant amongst Apple trees, and has a clean stem some 5 ft. or 6 ft. in circumference; quite two-thirds of the roots must run under gravel walks, walls, and buildings, and yet it is a fertile giant, annually producing large crops of fruit. I put the old Vine into the same category. These old trees have all found their lots cast in pleasant places, and therefore they produce goodly crops. But after all the Hampton Court Vine has for several years past been only just existing. As a sample of Vine culture it is most disappointing, and had it been in any private garden where good crops were regarded as of more importance than the maintenance of fossilised curiosities, it would have been long since uprooted. Statistics about the crops produced on this Vine must be taken *cum grano salis*. Competent observers have often thrown doubt upon the stereotyped 1300 as the number of bunches it is said to bear; and as to the 1000 lb., the least said the better. I saw this Vine twice last summer, and put the fair average weight of the bunches at  $\frac{1}{2}$  lb. each, and it is notorious that in judging the hanging weight of Grapes we generally overdo it. To the thousands of people ignorant of the true character of a Grape crop and what Vines in robust health should resemble, this old Vine is doubtless a marvel, but nevertheless it is in no sense a favourable example of Grape growing.

Since writing the foregoing remarks concerning this Vine I have been enabled to refer to one of those infallible authorities—a guide book, this particular one being compiled by Sir Henry Cole. This edition is dated 1878, and as that was but three years ago, and it is described as revised, no doubt



Sir Henry was careful to verify his statements. Here is the entire extract as relates to the Vine, and no doubt other readers besides "Peregrine" will scan it with interest: "The Hampton Court Vine, planted in 1769, is the largest in Europe, if not in the world, according to popular belief, and we are not disposed to call it in question. In the autumn it almost drags the house down with its thousands of clusters of purple Grapes, numbering in fruitful seasons as many as 2500 bunches. It is a wonderful sight. We can only report on hearsay that the fruit is very fine, for it is exclusively preserved for the Queen's table." I specially invite attention to the figures given—2500 in 1878 and 1300 now! "Oh, what a falling off is there" in that short space of time! When readers have looked on this picture and on the less imaginative one sketched above, they will have no difficulty in drawing their own conclusions. A. D.

#### RESTING VINES.

I FOR one, and I doubt not many others also, are able by their own experience to contradict Mr. A. Mackie's assertion (p. 531) that "where bedding or other plants have to be wintered in the vinery, as occurs in many places from want of room elsewhere, it is impossible to give Vines a proper resting time." He seems to forget that if it is good for the Vines to rest, it is also good for the bedding plants; and the only difficulty to be overcome is the keeping the vinery cool enough for both. Although frost in winter is good for Vines, it is not necessary to expose them to it; and I have never yet found them suffer in the least degree from the small amount of heat that is wanted to raise the temperature above the freezing point. At the present moment the leaves are falling fast from my Vines, and I shall have no difficulty in securing for them a three months' rest at least. I never force them, but only provide that they shall have fire-heat at any period of the year when they may require it, in order to keep their growth progressing when they have once begun to shoot. Throughout the year I give more air than is usual with most Vine growers, my aim being to produce the best-flavoured Grapes. Those who grow them for the market know very well that the buyers in general only judge by appearance, and that the larger the berries are and the heavier the bunches, the more money can be got by their sale, the public not caring to apply any other test. Had samples of mine been placed by the side of some others grown in this neighbourhood, they might have been bought for two-thirds of the price which was charged for their well-filled-out neighbours; but I had opportunities of tasting these fine Grapes, and I found they were neither so sweet nor so rich in flavour as my own. Vines, no doubt, are affected also by climate, and especially by the soil in which they are planted. I have heard that the Vine-growers of Italy consider that we in England obtain size at the expense of flavour by the over-enrichment of our Vine borders. Some of us are old enough to remember the fierce controversy carried on some years ago between two parties, the one advocating the free use of decayed turf with little else in the way of enrichment, the other maintaining that it was impossible to grow Grapes properly without a copious supply of horseflesh. B. S.

#### FRUIT PROSPECTS.

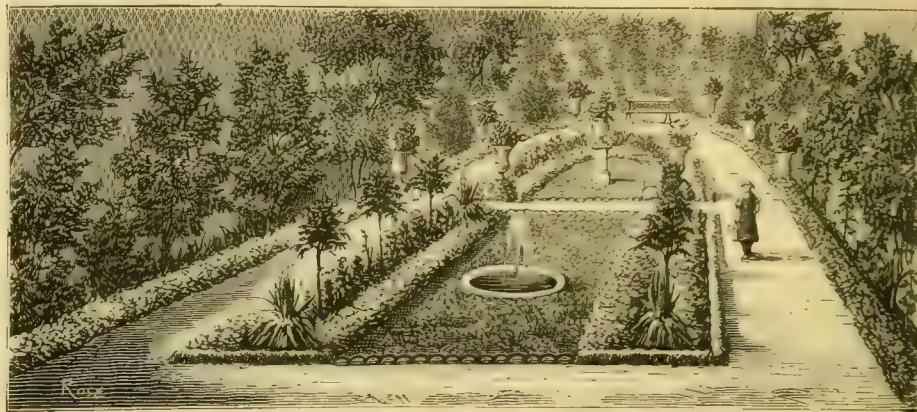
THAT memorable gale of the 14th of October will probably have more to do with the fruit crop of 1882 than most of us think. Just previous to its occurrence both fruit and other trees were still covered with leaves—not green leaves, it is true, but leaves nevertheless. After the gale there was nothing but bare branches. In ordinary weather the foliage would have held on for a fortnight longer, during which time the fruit buds for next year's crop would have been materially assisted by its presence. Whether the embryo crop of fruit has suffered by this sudden denudation of the trees or not it would be difficult now to say, but there can be little doubt that the presence of healthy

foliage for another week, or perhaps two, would have been of great benefit to the trees. Since the gales of October we have had a continuation of bright, warm weather—weather that would have gladdened the hearts of both gardeners and farmers in September. "The brief summer of St. Martin" may have done something to rectify the damage done by the excessive rainy, stormy, and inclement weather with which we were visited in August and September, but it is doubtful whether it has not been too late in coming. Sunshine in November is very different from sunshine in September. I have had an opportunity of visiting a good many gardens lately, both private and otherwise, and have made a point of examining the fruit trees and bushes with the view of ascertaining as far as possible what the prospects are of a fruit crop next year. Shortly after the gale an experienced fruit grower expressed grave doubts about the crop of next year. Since then I have had the pleasure of going over his trees with him, and I am glad to say that at present (November 21) there can scarcely be a better prospect of a crop than is to be seen in the case of both Apples and Pears, as well as on that of all bush fruits. My friend attributes this to the three weeks' sun which we had in November—a November without a fog. Many changes may of course take place before next fruit season, but I see no reason why the fruit crop of 1882, in situations where the wood

must be given when growth commences, and when the flower-spikes begin to rise a little more heat may be indulged in. When the flowers begin to expand gentle fire heat should be employed on dull days with air. On bright sunny days, when the pollen is thoroughly dry, the flowers should be gone over with a camel's-hair brush. This will assist fertilisation, and promote the formation of perfectly shaped fruit. Prior to plunging the plants the pots should be examined, to ascertain whether or not the drainage is in working order. There is generally an accumulation of soil below the pot shreds (or whatever material is used for drainage), caused either by the presence of worms in the pots or by heavy rainfalls. If the plants be turned out of their pots care must be taken to replace the ball in exactly the same position as that previously occupied by it.—R. G.

#### Rust on Grapes and barking Vines.

—Much has been written at various times on rust on Grapes. Watering and syringing with hard, cold spring water, or even excessive dampness may possibly produce it, but what is quite certain to do so is when thinning or otherwise working among the bunches to let the hair of the head come in contact with them. Let anyone when the bunches are fit for thinning try the experiment and see for himself; every bunch so touched will turn rusty and, of course, be unfit for table. Another point connected with Grape growing is, all loose bark



A Small Town Garden.

was moderately ripe before the October gales occurred, ought not to be a good one.

#### OLD MORTALITY.

**Strawberries in pots.**—The time has now arrived for housing plants in pots intended for forcing. Cold frames are best adapted for this purpose, but every one has to act according to his glass accommodation. The beginning of December is a good time to start an early lot, and little fire-heat need be used if the plants are plunged in a gentle bottom heat, such as that obtained from a good bed of leaves. The bed should be made up in a pit or frame where there is a little fire heat to expel damp and keep up the temperature on cold, frosty nights. Plants will start into growth much more freely when plunged in a bed of leaves than when placed on dry shelves in large airy houses, and a nice moist atmosphere is maintained by the leaves gently fermenting. This quickly induces growth, and the bottom heat greatly assists the plants through the dull weather to throw up their trusses of flower well above the foliage, an important point in Strawberry forcing. If the frame is fully exposed to the sun the plants could not be in a better position than therein until the fruits are set. Then they should be pushed on in a good brisk heat. From 40° to 45° is a good night temperature to commence with, closing with a little sun heat. In favourable weather abundance of air

should be peeled off at this season. For my own part I may say I should be sorry to see it left on; we know the time and labour it takes to strip it off, but if done properly it is beneficial. Underneath the bark I have found frequently mealy bug concealed, and only waiting for warmth to bring it out. This the dressing put on the canes would never reach; therefore, to paint the old bark and leave such insects underneath it is, I think, simply waste of time. In one place I found a vinery full of mealy bug, and I was told I should never be able to get rid of it, but now there is not a vestige of it. Of course, in barking Vines great care is necessary, and I should never allow a sharp knife to be used. Years ago, when at Welbeck, where, perhaps, there are as many or more Grapes grown than in any other place in England, six or seven of us used to be employed on this work at this time of the year, each Vine being properly barked and dressed with a solution of soft-soap and sulphur in the usual way, but a little paraffin added will be found more penetrating, say about three parts of a wine-glassful of paraffin to about a gallon of the solution. When the Vines have all been properly gone over and the house thoroughly cleansed, I then remove every bit of soil to the depth of about 3 in., and this I have carted right away, and anyone who adopts this system will, I think, never be troubled with mealy bug.—JAMES E. WHITING, *The Heath, Hampstead.*



## GARDEN DESIGN.

## A SMALL TOWN GARDEN.

Our friend André has a page in his "L'Art des Jardins" on the bad state of the small town gardens in England, and gives the accompanying illustration of what he considers a good example of a small town garden in Paris. We have seen a great many in both countries, and wish they were better, but on the whole there is not much to choose between them as regards design. He objects to statuary, &c., of which too much, no doubt, is seen, yet gives us eight poor vases in this small town garden! There is also one of those wonderful little fountain basins, which certainly never add to the charm of so small a place, with their stiff little cement margin. In our grimy cities no doubt little gardens do often present sad effects, particularly those of the rich in the West-end of London. People do not know enough of gardening and plants to enable them to see the plans that might be illustrated in town gardening successfully. So the poor thickset of Privet has its own way, and serves to choke any good thing near it. A walk from Piccadilly down to the Mall in St. James's Park, skirting the gardens of the houses in Arlington Street show well the neglected and grimy aspect of small London gardens attached to the houses of the wealthiest class. No doubt living in one's own chimney, so to say, makes all kinds of gardening difficult in London, and people give it up in despair. The glossy evergreens are soon black twigs or sticks, and the few summer-leaving things that do well are not noticed, and have no chance with the Privet unless in the case of a tree which gets its head above the crowd and becomes the master. In such gardens as we speak of groups of Lilac, Thorns, and other flowering trees and bushes could be perfectly well grown if the ground were fairly given to them, and if not overcrowded. The shoots as well as the individual plants should not be too crowded and never overshadowed by trees. And this reminds us that there are two ways of arranging bits of ground in towns—one for the growth of flowers and low trees, and the other for big trees. In the latter case, once the trees are up (and for their effect or what they may conceal they are often the most valuable) the best way is to leave the ground unoccupied beneath, save a bit of Irish Ivy or a few Ferns.

## NOTES AND READINGS.

No one doubts the success of the much esteemed Orchid grower of the Bridge of Allan, Dr. Paterson. The thing to be regretted is that the good doctor's success is left to be recorded by other people to the confusion of other Orchid cultivators. Your readers will remember how a while ago it was reported by one or more writers that Dr. Paterson grew his warm-house Orchids, Vandas, and the like with great success in a temperature agreeable to the *habitudes* of the drawing-room or the smoking-room. I think it was as a smoking-room the tropical house was used, and some Orchid growers expressed the opinion at the time that the doctor's system must be rather "cool." We have now another account of Dr. Paterson's system from Mr. Spyers, who in a contemporary, rather disillusionises the hopes of those who expected to grow Orchids from the Tropics in the highlands of Scotland with open doors for ventilation. Dr. Paterson has apparently only one way of ventilating his warm houses, and that is by opening the door of the cool house at the far end of an L-shaped range. The subjects that experience the volume of cold draught from the open door, when the tem-

perature of the external air is above 45° only, are general cool-house subjects like *Odontoglossums*, but Mr. Spyers says that although "this arrangement suits the warmer-growing plants, as the air in passing through the cool house and intermediate house gets nicely warmed, I am certain the *Odontoglossums* and *Masdevallias*, healthy as they are, would make greater progress if aired on a less wholesale system." There can be no doubt of it, nor of the fact that Dr. Paterson grows his Orchids in much the same way as other people. It appears he needs a cool house, an intermediate house, and a warm house—finds them useful probably.

There can be little doubt that under artificial culture in this country we may, with impunity, deviate considerably from the conditions under which plants are found growing naturally, but there is a limit to that sort of thing. We no more believe that inter-tropical and tropical Orchids thrive best in a temperate climate like ours without fire-heat than that plants belonging to temperate regions, like the Vine, for example, require a tropical temperature to bring them to full fruition, as some believe. From 45° to 50° is the lowest temperature cool-house Orchids should be subjected to in a general way in winter, and they will thrive uncommonly well in a higher temperature, while tropical Orchids still continue to require a tropical heat as far as that is justified by our darker skies and colder climate necessitating so much fire-heat. We do not believe in the door system of ventilation by any means, and any one who understands anything whatever of ventilation knows that such a method means undue exposure of one portion of the plants and undue roasting of the other in a connected range of houses.

Not long ago a case was tried involving damage to trees, and numerous witnesses were summoned to prove on one side that the damage was done by the weather, and on the other that it was the smoke from certain furnaces that was the cause of the mischief—the latter view being concurred in by the judge, who gave a verdict for the plaintiff, which it is, however, said will soon be questioned by another tribunal. We believe there are many places in this country where damage to woods is attributed to smoke from smelting furnaces and other factories, and it may interest parties concerned to know what conclusions have been arrived at on this subject in Germany. In the Upper Hartz Mountains the destruction has been great, according to the *Field*, which states that the gases from the smelting furnaces have ruined forests and been detrimental to men, cattle, soil, and pasture. It has been satisfactorily proved that the gases are the cause, and the degree of resistance offered by different kinds of trees has also been estimated pretty accurately: "Fir trees are the most sensitive. Of other trees, the Oak resisted them the longest; next came the Norway and Field Maples; next the Ash and the large-leaved Maple; the Alder and the Aspen following. All these resisted the gases for a comparatively long period, and are numbered respectively 1, 2, 3, and 4, as indicating their degrees of resistance. The other trees with lesser degrees of resistance are: 5, the Hawthorn and Apple tree; 6, the Linden; 7, the Hornbeam, the Mountain Ash, and the Birch; 8, the Hazel; 9, the Elm and Chestnut; 10, the Beech; 11, the Larch; 12, the Fir; 13, the Pine; and 14, the White Pine or Deal."

A pretty shrewd writer in *Gardening* maintains on good and logical grounds that the

question of bedding-out or formal system of gardening *versus* other systems which find room for as great a variety of plants as possible is not a question of taste at all, and never can be. It is pointed out that those who advocate the bedding system confine themselves to saying that they like it instead of stating clearly what are its merits. Questions of taste, this writer states, "can only arise between things tolerably equal. Whether a Carnation or a Chrysanthemum is the more beautiful flower is a matter of taste, but whether a hundred Chrysanthemums of one sort, or a hundred of different sorts, are a preferable possession is not if they are all equally beautiful. To make all gardens alike would be worse than formal beds still; indeed, one of the principal evils of the bedding system is its tendency in that direction. Anything, however, that is publicly recommended stands on a different footing from individual designs, and should be not only conspicuously good, but capable of great variety of adaptation."

The *Calanthe*, though by no means what one would call a magnificent Orchid, is nevertheless a useful and pretty stove plant at this season of the year, and Mr. Baines, last week, hits off concisely the essentials of its culture when he says it should have plenty of heat all the year round. I believe the *Calanthe* will endure a proportionally lower temperature during its active season of growth than at any other time, and some members of the trade whom we know grow their plants well in an intermediate temperature, but they have to put them into the stove to flower, and they would probably be as well never out of that structure. On the other hand, the instructions Mr. Clarke gives on the subject are of that kind which vexes the heart of the learner. What possible reason can be assigned for sticking to a hard and fast day temperature of 70° till the beginning of June, and then jumping up suddenly from 20° to 25° higher, "from 90° to 95°, with 10° less by night," or a night temperature of from 80° to 85°. A fine day in May is as good as a fine day in June any time, and one sees no reason why it should be lost in the one case more than in the other. *Calanthes* started in March should be in active growth by that time. In Orchids, as in other things, our experience is that there is no time to be lost in the comparatively short season of sunshine and light, the plants have to perfect their growth in this country. It behoves the cultivator to make the most of the sunheat and light whenever the sun shines both in summer and winter. Tying himself down to set figures of temperature by the week or month, irrespective of circumstances and situation, is not the best practice.

Mr. Baines pointed out in a contemporary not long ago that temperatures under glass in this country should be regulated by the amount of light experienced, and he regretted, as others had done before, that we had no means of measuring the intensity of the latter, so that the temperature might be gauged accordingly. Taking this view of the matter, it follows that the orthodox practice hitherto prevailing of regulating the temperature strictly by the month, or even by the week, cannot be the best or wisest. Temperature is indeed a matter of daily and hourly discretion, and probably the safest rule to go by would be to afford as much heat as the plants will endure with advantage while the sun shines, and just as little as will sustain healthy vitality during darkness. A safe way of putting it, this, some may think, but by the maximum and minimum here I mean a greater and a less amount of heat respectively than is usually given by cultivators of plants and fruits. The practice of permitting the tempera-



ture to run up or run down considerably according to the weather is particularly commendable in the case of plants that grow more or less all the year round, as some Orchids do, and particularly cool Orchids like the *Odontoglossums*, which appear to do this in a general way, only the leaves and bulbs made in winter are weaker and paler than the summer-grown ones from want of heat and light. Orchid houses, too, should face the south, for they need as much of the sunshine at this season as can possibly be got, just as any growing Vines, Peaches, and other forced fruits do.

One does not wonder at Mr. Fish or any one else growing enthusiastic over the Holly at this season of the year, or at any season. It is true, too, as the editor remarks, that we should be proud of such a tree. I sometimes think we need to see some of our common but pretty trees and plants through the eyes of strangers. Mrs. Beecher Stowe, when she landed at Liverpool, as she records in her "Sunny Memories of Foreign Lands," says of the common Holly, "I never saw any plant that struck me as more beautiful than this Holly. It is a dense shrub, growing from 6 ft. to 8 ft. high (she was only describing the first plants she saw), with a thickly varnished leaf of green. It is one of the symbolical shrubs of England, probably because its bright green in winter makes it such a splendid Christmas decoration." The common Portugal Laurel was to the same stranger "a beautiful evergreen in shining clumps," and finds a place and description also among the "Sunny Memories." Burns prayed that some power would "the giftie gie us to see oursels as ithers see us;" but what gardeners and cultivators generally need at the present day is the power to see the beauty and attractiveness of many of our common flowers and shrubs which they neglect to lavish their attention on other subjects that are not so good, only less common or more difficult to grow—always a strong recommendation in their favour.

PEREGRINE.

## SEASONABLE WORK.

### FLOWERS AND PLANTS IN THE HOUSE.

G. J., SURREY.

THIS week we have a fine wild nosegay—a bough of Gorse with flowers unusually large, wide open, and sweet smelling, Holly, thick-set with berries, green sprays of Broom and Polypody Ferns, in a large brown jug of old German earthenware. From the open garden there is a good handful of the large blue Periwinkle, with some of the nearly pure white variety (*Vinca acutiloba*), and an upright glass of yellow Jasmine. The room is filled with the sweetness of *Chimonanthus fragrans*. It can be floated in water or kept dry, but it keeps sweet longest dry. We have it on a little tazza of white engraved Venetian glass, and it could hardly be better placed. It is one of the best things to send by post to friends who are out of the reach of flowers. The powerful fragrance on opening the little parcel is always a delightful surprise. *Billbergia Baraquiniana* is a noteworthy pot plant, highly decorative whether in flower or not. This week it has developed perfect flowers in a sitting room where the plant has stood some three months. Other pot plants are groups of white *Cyclamen* and of red Chinese *Primroses*.

### FLORAL DECORATIONS.

J. HUDSON, GUNNERSBURY HOUSE.

WHERE a good stock of winter and early spring blooming varieties of Heaths and Epacris are grown, they will now be invaluable either in a cut state, or for dinner table, or drawing-room decoration. Spikes of *Epacris* will last sometimes for ten days after being cut—a great recom-

mendation in favour of this class of plants, and my only wonder is that they are not more grown than they are for supplying cut bloom. In colour they vary from the purest white to pink, and even crimson. When well grown, a good long stem can always be cut with the flowers, another advantage not to be overlooked in floral decorations. The smaller pieces will always turn in handy for button-hole bouquets being at once novel and attractive. *Cyclamen persicum* is another plant that yields flowers of great durability. A few *Cyclamen* blooms have a pretty effect when dotted over an arrangement of *Primulas* in various shades of colour. The earliest of the Indian *Azaleas* will now be useful in a cut state, particularly *A. narcissiflora* and *indica alba*. These with a few pieces of *Eranthemum pulchellum* will give a distinct and striking effect when used together, or if artificial light has to be studied add thereto a few sprays of *Begonia insignis* or *Plumbago rosea*. For the dinner table (to arrange in small glass bowls) a few blooms of *Abutilon* in two or three colours will give a pleasing change, using for instance the white with the golden variety or the former with a pink or rose-coloured kind. These will look well arranged with their own foliage. Small rustic baskets may be made very effective by means of a few bulbs of White Roman Hyacinths, well furnished with flower-spikes, and the same of Duc Van Thol Tulips (scarlet). A good surface of fresh green Moss will retain the moisture, and give a finish to the arrangement which will be a lasting one. If the Roman Hyacinths have been grown, three in a pot, and it is desirable to use single pots of these in ornamental vases or covers, a few seedling Ferns may be looked up and dotted over the surface of the pot.

### FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

THE multiplicity of beds which we see in most places, filled as they generally are during summer with plants ablaze with bloom, has in some measure spoiled that repose for which English gardens were once famous; for after all there is nothing so satisfying to the eye on a hot summer's day, or that yields such an amount of permanent pleasure, as rich verdure. This, therefore, being the case a general survey should be made to see what improvement can be effected in the way of reducing the beds, as this and other alterations that may be desirable to carry out can now be accomplished with speed and comfort; and not only these, but deciduous trees and shrubs transplanted before the close of the year stand a much better chance of succeeding than is possible for them if their removal is deferred even a week or two later. Any, however, of large size had better be left till next autumn, and to prepare them for lifting then they should have a trench opened around them now in order that their roots may be cut, when by filling in the trench again with light sandy soil the cut roots will form fresh fibres, which will be a great help towards rendering their future removal safe, and will assist materially in getting them quickly established. In the transplanting of trees and shrubs, the great point is to secure as many roots as possible, and to preserve each and all from injury. Another thing that militates greatly against the successful lifting and transplanting of trees is leaving their roots exposed to the air, through which they become dry and shrivel, and not only do the roots get in this unsatisfactory state, but the bark of the stems and branches contracts in the same manner, and when allowed to get in this condition it is a long time before the sap vessels come into proper working order again. To prevent this shrivelling of the rind of fresh moved trees, it is a good plan if they be large to bind their main stems and branches with Moss, large flaky pieces of which may be quickly tied on; the whole surface is thus enveloped by a covering which will preserve plenty of moisture, and keep the bark plump. Before doing away with beds by turfing them over it is a very important matter that they be well rammed, for if

this is not done there is sure to be a gradual subsidence of the earth, and this sinking soon causes unsightly hollows that cannot be rectified till the autumn. As the soil of beds is generally richer than that on which Grass has been growing it is always advisable when carrying out the alterations adverted to above to remove a portion of the surface and replace it with soil of a poorer nature, or the lawn will prove patchy for years. In the selection of turf the best is that near paths where it has been subjected to a good deal of traffic, which makes it come finer, and gives it altogether an improved texture and quality. The handiest sizes to have the flags for laying quickly and handling easily are about 2 ft. long by 9 in. or 10 in. wide, and 1 in. to 1½ in. thick, as, so long as they will hold together, the thinner they are the better will they roll and unroll, and the more speedily can they be beaten down level in their places. The beating down should first of all be done during a dry time, and then immediately after rain, and if the roller is afterwards passed over, a firm level surface will be the result.

**Herbaceous and other plants** of that class show off best in wide shrubby borders with low evergreens to back them up, but these latter ought not to be of a kind that root far about, or they rob the former, and so spoil their growth. *Rhododendrons*, *Berberis Darwini*, *B. stenophylla*, and such like, do not do this, and therefore should be largely made use of, as they are not only valuable on this account, but they are more desirable than most others on account of their moderate habit and the great beauty of their flowers, which they bear so profusely in spring. For variety of foliage, *Aucubas*, *Euonymus*, and *Hollies*, are the most suitable, and to these may be added the variegated Dogwood and *Acer fraxinifolium*, and by way of contrast to these, one or two of the dark-coloured Nut, which, with its rich coppery leaves, shows up well. To make sure of old borders being perfectly free of roots from trees and shrubs near, it is a good plan at this season to trench up the same, and when doing so to work well up around, cutting and removing all in the way. As most herbaceous plants are fond of rich soil, the opportunity afforded when trenching of giving a good dressing of manure should not be lost. The kind of manure most suitable for the purpose is that of a mild nature and which has been laying by for some time to get well decomposed. Such as this is agreeable to most plants, and may be used freely without fear of injuring the roots, but it is always best to keep it low down.

### INDOOR PLANTS.

T. BAINES, SOUTHGATE.

**Autumn-flowering Heaths.**—The use of strong stimulants, to which autumn and winter-flowering Heaths are usually subjected by those who cultivate this class of plants, is not favourable to their continuing long in a healthy state, hence so many die after flowering; yet if they can be induced to again start freely into growth they will be found very useful a second year. If, as often happens, they have been placed whilst in bloom in conservatories or other houses where a little extra warmth has been kept up, this will have excited them to growth at a season when they should have been all but at rest, and unless they are treated kindly after the flowering is over they usually die. In place of being put in a cold, chilly atmosphere I have found it better to keep them in a temperature of 45°, by which means they will often grow away freely, and make good plants a second season. They ought to have their strongest shoots shortened to about half their length, and must be kept well up to the light, a moderate amount of air being admitted to them daily when the weather is favourable. After cutting in care must be taken that they are not over-watered, for, like all other Heaths, they cannot bear their roots being too wet, and, in common with any plants that have their heads reduced, the roots receive a check, but, nevertheless, they must not be kept nearly so dry as the hard-wooded section of the family requires. Later on, when the plants show that they have



got well over the cutting in, they should be moved into pots two sizes larger than those in which they have flowered; by this course of treatment they may frequently be kept in a thriving state for several years.

**Winter-flowering Epacris.**—The earliest blooming varieties of these are frequently kept a little warmer in autumn than ordinary greenhouse stock, the result being that they flower earlier, but the warmth also has the effect of exciting growth; and if after they have done flowering they are submitted to cooler treatment, they, like the Heaths, are liable to die off. In fact, it may be taken as a rule that any plant, however hardy it may naturally be, that has its growth started in the autumn or winter should afterwards be kept on moving gradually, or the check will be such as to induce ill health. As soon as the flowering is over shorten all the shoots well in, and if possible keep the plants in a temperature similar to that which has induced them to grow. So managed, the progress they will make for the next two months will be little, but the check that so often destroys them will be avoided.

**Chrysanthemums.**—Cuttings of these may either be put in about this time or in February or March; in the former case they should be put in pots or pans, kept moist, and as close as they will bear without causing the leaves to damp by covering with hand or propagating glasses, but at the same time they should not be kept warmer than the temperature of an ordinary greenhouse. In this way they root slowly without the tops getting at all drawn, and as soon as struck they should be placed near the glass and have plenty of air, moving them singly into small pots about the beginning of March. These early propagated plants produce larger blooms where severe thinning is practised, and also a greater number of flowers where the plants are grown for ordinary decoration than those struck later. In all cases see that the cuttings consist of short, stout shoots, and not those that have been drawn up through the plants being crowded together whilst in bloom; where the cuttings are produced under the latter condition the plants are never so strong as they should be, and it is impossible to keep their lower leaves fresh on them through the summer. After the general stock has done blooming, all not required to furnish cuttings may be discarded, or they can be planted against walls or anywhere where there is a chance of their flowering out-of-doors.

**Lapagerias.**—Plants of these done flowering, if at all affected with scale or thrips, should be syringed freely with insecticide strong enough to kill the insects now when little or no tender growth is present, sponging the leaves and stems afterwards so as to remove any eggs that may remain. Both the red and white varieties are best increased by layering a few of the strong mature shoots, which, when so treated, produce through the spring suckers that in the course of the season can be taken off and potted singly. Supposing the plants to be planted out, the mode of procedure is to get some loose peaty soil to which has been added a little sand and leaf-mould. This should be laid about 4 in. deep on a portion of the surface of the bed in which they are already growing, and in this layer the shoots, covering them with the soil, so that the whole of the stems are buried and about one-half of the lower portion of each leaf, leaving the opposite end above the surface. The shoots must be pegged down with hooked sticks to hold them in their position. Keep the soil moderately moist, and when the young growths make their appearance above ground each should have a stick stuck in the soil to support it.

**Salvias.**—Those who grow a sufficient stock of the free blooming *S. Bethelli* and *S. Pitcheri*, will find them amongst the best plants for associating with *Chrysanthemums*, suitable alike for general decoration, and for cutting, for either of which purposes they will last longer than most flowers. If to succeed these some of the later flowering varieties, such as *S. gesneræflora* are

grown, a good display may be kept up for a considerable time in the new year, but the plants of these late blooming sorts must not be kept too cold or they will get stagnated in a way that will much interfere with their flowering. The opposite extreme must likewise be avoided, or they will come in too soon. A temperature of 40° at night will answer with the latest of the stock, and if the pots are very full of roots a little manure-water should be given every week.

**Sarracenias.**—These are extremely liable to the attacks of brown scale and thrips. The latter are almost sure to make their appearance every summer, secreting themselves under the recurved mouth of the pitchers, and unless means are taken to destroy them as soon as discovered they injure the pitchers so much as to cause their premature decay, and even when the mature insects are killed there usually remains a number of eggs ready to start into life as soon as returning warmth brings them on. To exterminate these all the pitchers should now be carefully sponged with strong Tobacco water, and in like manner wherever scale exists an effort should be made to completely eradicate it, for so exceptionally fast does it breed on the young growths of these plants that they are all but sure to get disfigured through the operations they are necessarily subjected to in removing it when the pitchers are soft and immature.

#### FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Vines.**—**LATE HOUSES.**—Muscats that were ripe in August or early in September may now be cut and removed to the Grape room, where, under good management, they will hang for a long time in perfect condition. As soon as the crop has been removed, prune the Vines, cleanse, dress and ventilate freely, to give them as long a rest as possible before they are again started into growth. Lady Downes and other thick-skinned kinds need not be cut before the first week in January, unless, like the Muscats, the fruit and wood were thoroughly ripe early in the autumn, and where these conditions, helped forward by fire heat early in the season, have not been attained, the attempt to keep them fresh and plump after they are cut will be useless. If any alterations, either inside or outside, are contemplated, have soil and drainage prepared in as dry a state as possible, protect from the elements, and, if possible, get the work finished before we have a change to severe weather. Assuming that the outside borders are in a satisfactory condition, remove all temporary covers as soon as the Grapes are cut. Apply the annual top-dressing of turf and bones, and protect the roots from frost with a thick covering of stable litter or fern. Take advantage of wet days for pruning succession houses; also young Vines which have thoroughly ripened the current year's growth. Wash with strong soap-water, dress the cuts with styptic, and sling the rods in a horizontal position.

**Early houses.**—If the Vines have been bent down to a horizontal position, to insure an even break, get them tied up to the wires as soon as the most backward buds are on the move. Syringe with warm water when the temperature begins to rise. Give air at 68°, close early, and syringe again if the afternoon is fine. If inside borders are well drained, a second supply of water at a temperature of 80° will help the young growths rapidly forward, and old Vines will benefit by the addition of a little clear liquid from the tank, or a dash of guano in the water, while vigorous young canes will produce more compact "shows," and set their fruit better if stimulants are withheld. Pay timely attention to disbudding, or rather the removal of weak breaks, from which bunches of Grapes cannot be expected, and when the best shows become prominent, raise the night temperature to 58° or 60° on mild nights. If forcing has been commenced with fermenting material on the borders, make frequent additions, turn the whole mass, mixing the old with the new, and aim at a temperature of 70° to 75° on the

surface of the soil. Where external borders have been well covered with a good body of dry warm Oak leaves, and protected from wet, they will retain their warmth much longer than when fermenting manure, which is objectionable, is used.

**Hardy fruit.**—The mild damp weather which has been so favourable for pruning and nailing will have held out inducements to many to postpone such work as top-dressing and mulching until walks and borders are in a better state for wheeling manure and compost. But so important an operation must not be longer neglected, as the timely application of a good covering to newly-planted or root-pruned trees cannot be overrated. Where Pears are grown on the Quince stock and the roots have not been disturbed, the annual top-dressing of good rich manure may be wheeled out on frosty mornings as soon as the nailing is finished. It is well known that the successful culture of Pears on the Quince stock greatly depends upon rich top-dressings; and as the borders in course of time become too high, old top-dressing and exhausted soil may be forked off and placed on the vegetable quarters to make room for the new. After a few years heavy cropping puts an end to extension; blossom buds only are formed, and as many people are quite incompetent to thin their own fruit, the annual removal of old spurs at pruning time should not be neglected. If on wet, adhesive soils the planting of trees has not been completed, it will be better to allow them to remain "laid in" on a dry border and well protected with litter than to attempt to plant while the ground is saturated with cold water. Push on the pruning and cleaning of all kinds of fruit trees, as the time may be at hand when it will be cruel to force men to stand for hours at a stretch against cold brick walls. Unfortunately, the winter dressing of hardy trees is much neglected; many troublesome insects are allowed to rest in the bark and walls from which they almost precede the unfolding of the earliest buds in spring.

**Cucumbers.**—Up to the present date, unseasonably mild weather has been highly favourable to winter Cucumbers, and indifferent indeed must have been the management where the plants have failed to produce an abundance of fruit. But the time may not be far distant when a sudden change to wintry days and nights will necessitate sharper firing, and as the latter is always injurious, provision should be made for economising fuel and checking variation of heat during the hours of darkness. A brisk bottom heat of 80° to 85° about the roots is of great importance, and where fresh Oak or other hard leaves and short stable manure can be obtained and well worked in an open shed, timely additions should be made to the beds in which the plants are plunged; the glass should be kept perfectly clean; and last, but not least important, all interior surfaces should be kept sweet and free from decaying matter. As Cucumbers cannot have too much light during the winter months, remove old leaves a few at a time, avoid hard stopping, and crop lightly until after the turn of the year. Old plants which have been a long time in bearing will require liberal feeding with tepid liquid, and top-dressing with rich compost, consisting of light turf, bone or charcoal dust, and old lime rubble. Manure in a solid form, is objectionable, as it encourages worms and produces canker, the best remedy for which is quicklime and powdered charcoal rubbed into the parts affected. If spider and mildew become trouble some renovate the beds with fresh fermenting leaves and a little short stable manure, syringe well with clear sulphur water, cut the fruit in a young state, and encourage robust growth by means of generous cultivation.

#### MARKET FRUIT GARDENS.

J. GROOM, LINTON PARK.

A FINER season for planting all kinds of fruit trees and bushes than this has seldom been known, but where this work is not completed it will now be practically suspended, at least on heavy lands,



owing to their saturated condition. Fruit growers are driven off the cultivated land to work in orchards on grass, for when in such a sloppy condition as at present it is impossible to carry on winter cultivation with advantage. Dry, frosty weather would therefore be welcomed by those who have manure to get on the land and similar operations requiring much treading of the ground. Whenever the surface is firm enough, however, to bear traffic pruning must be pushed forward, for after the buds begin to plump up all growers for market like to have the winter dressing completed. It is not only a waste of force to have the sap swelling up buds that are to be cut away, but those required to be left are liable to be rubbed off after the days begin to lengthen. All suckers springing up from the base of trees or bushes must be carefully rooted up. Some fresh soil should then be put to the roots, and the pruning of the tops completed, after which manure may be spread on the surface and dug in. Hereabouts the land being heavy the tools employed are necessarily stoutly made. What are called spuds or very stout pronged forks are in general use for digging amongst fruit trees and bushes; ordinary steel digging forks, so useful in light soils, are quite useless for this purpose, and spades are not good implements amongst the roots of trees.

**Manuring.**—I may mention that all sorts of refuse from factories and all kinds of sewage are applied to fruit trees. Many growers hereabouts employ men for weeks together to collect house sewage for their orchard fruit trees. A trench is taken out about 3 ft. from the stem and is filled with sewage. The soil is returned in spring, and it is surprising the crops of fine fruit that old and apparently worn-out trees bear where this system is followed up for a few years. Those who live by growing fruit for market make the application of manure the first of all considerations, and nearly all of it is applied either on the surface and just covered with soil or very lightly forked in about the roots.

**Roads** are now being put in order, the heavy traffic of loaded vans and carts soon rendering them impassable if not kept surfaced with good hard material, and in large fruit plantations at least one good hard central roadway must be provided for carting the produce out and bringing soils and manure in. Where good gravel is procurable there is nothing better, but about here broken stone has to be used. This is broken up into pieces 1 in. or 2 in. square, put into the wheel tracks, and under the heavy carting now going on it soon gets consolidated.

**Ditches.**—Watercourses and drains must now be cleared out, for any block in the working of these will be injurious; although a thorough saturation of the soil by heavy rain is doubtless of great benefit to fruit trees, it is by no means advisable to have stagnant moisture anywhere for any length of time.

**Good hedges** are important, and in no part of the kingdom have I seen more impenetrable ones than those that enclose the fruit gardens in Kent. They usually consist of Thorn or Quick, and are generally clipped or cut with sharp hooks twice in the summer; the sides are hoed and kept clean; at this season the surface soil for about 2 ft. from the base of the hedge is lightly forked over, and Couch Grass or similar weeds are carefully picked out. Seedling Elders or any coarse growing shrubs that spring up must be grubbed out now, as they quickly destroy the Quick and make gaps in the hedge. Any weak places must have stumps driven in to bar the passage until the hedge gets thick again. In addition to preserving the fruit, good hedges help in spring to break the current of cold winds. Where new hedges are being made, now is a good time to get the planting done; prepare the ground by thorough cultivation and cleaning at first. Good healthy young Quicks two or three years old should be planted in a double line and kept topped down until they get very thick at the bottom.

**Packing fruit** for the Christmas markets is now being pushed on Kitchen Apples, such as

Wellingtons, Graham's Russet, and others, are being sent to London in large quantities; also the smaller dessert kinds, such as Golden Knobs, Pearmain, and Pippins of various kinds. The large kinds of Apples generally go in sieves, and the smaller in half-sieves. The price of Apples, owing to the large crop we have had at home and importations from abroad, is not likely to get much beyond what it is at present, viz., from 3s. 6d. to 5s. per sieve for kitchen sorts, and from 2s. 6d. to 4s. per half-sieve for dessert kinds. Good Ribstones and Cox's Orange Pippins of home growth still command the top prices as choice dessert fruits. Pears are but very little grown as orchard fruits for late keeping; sorts that can be gathered and sent direct from the tree are those which market growers like. The best fruits as regards paying the grower now being sent from here are Kentish Cob Nuts; they grow on light or stiff soils, and their prices are not much affected by foreign competition. They now realise from 70s. to 75s. per 100 lbs., sent up in bags made of Hop pocketing, or else in sieves packed like Apples.

#### KITCHEN GARDEN.

R. GILBERT, BURGHEY.

SEVEN degrees of frost here on the 9th inst. prepared us for the coming winter; therefore look over plots of Broccoli or Walcheren Cauliflower; cut them with their leaves close to the ground, and lay them in sheds. I have kept them three weeks well in this way. What are left in the beds may be protected with bracken, which also does well for Lettuce, Endive, &c. The very mild weather which we have hitherto had has made Peas outside grow apace; therefore they now want a fresh supply of coal (not coke) ashes. Every inch of vacant ground should now be turned up roughly. If all Turnips, Carrots, and Beet are not already in store, lose not a moment in getting such work done. Look over seed Potatoes, turning them over to prevent them from sprouting. A lesson may be learned even just now in the case of early Potatoes. I have Veitch's Ashleaf, Hammer-smith Early Bird, and Stratton's Seedling lying closely together, and while the young sprouts of Stratton's Seedling are 2 in. long the others have not yet made a start; this shows Stratton's to be the earliest.

We have been busily employed for the last day or two sowing Peas in boxes 3 ft. long for very early produce. We generally gather from them on May 1. The variety I sow now is Minima, another of Mr. Laxton's. They grow from 1 ft. to 15 in. under glass, but outside not quite so much. The treatment simply consists in well draining the boxes, putting in a layer of turf, tops of crocks, and filling up with good loam. Place them in a coolinery to get them up quickly. They are then placed in a cool house near the glass, and they are a most useful and satisfactory crop. We also find Chicory and Witloof useful additions to the salad bowl, still not to be compared with Lettuce or Endive, of which we grow large quantities. The true black-seeded Brown Cos is the most reliable of winter Lettuces. Asparagus, Seakale, and Rhubarb must be brought in and forced in accordance with the demand. We are just now (December 10) supplying for the table Asparagus, Tomatoes, French Beans, Mushrooms, Cabbage, Broccoli, Spinach, Brussels Sprouts, and Cucumbers.

**Wasps.**—Allow me to inform Mr. Rawson (p. 538) that I have not seen a wasp for two months; during summer, too, they were very scarce. In spring queens were numerous; great numbers were killed, but as the season advanced they disappeared, owing, I think, to the cold, wet weather which we had in Renfrewshire.—W. LITTLE.

— Allow me to inform Mr. Rawson (p. 538) that on Nov. 6 I observed a nest where the wasps were very numerous, and busily engaged in passing in and out, quite as much so as if it had been summer time. The nest was dug up on November 7. Had it been left undisturbed I believe the

wasps would have continued working up to the present time, as we have not had any severe weather since.—WM. NEILD, Wythenshawe, Northenden.

#### NOTES OF THE WEEK.

FROM CAIRO.—The following note is extracted from a private letter from Mr. E. H. Woodall, who is wintering in Egypt: "Vegetation here is quite tropical where irrigation is practised, and the Poinsettia bushes are magnificent, some heads of flower bracts measuring 21 in. and 22 in. across! Flowers, generally speaking, are scarce, but there is a variety of *Bougainvillea spectabilis* which is here called lateritia, that so far exceeds in beauty and continuity of flowers any other variety, that I must try to get some cuttings or plants sent to England. The colour of the bracts is brilliant red of the orange scarlet type, and the flowers larger and whiter than the type; its growth is much less rampant than *spectabilis*, and altogether a most desirable plant, as it seems to me. Count Cioccolani tells me it is in bloom all the year round at Alexandria in his garden there. I have seen nothing else of special interest to gardeners in England, but there are many Australian and tropical plants and trees that I am glad to see again growing in the open air."

**BERRIED TROPICAL PLANTS.**—The stoves at Kew, though somewhat deficient in flower, contain some highly interesting plants remarkable for the attractiveness of their berries. One of the most noteworthy is *Melanocarpum Sprucei*, an erect-growing plant 1 ft. or 2 ft. high, the stems of which terminate in a dense irregular cluster of purplish-red berries about the size of Red Currants. It is an uncommon plant and very ornamental at this season. Others are *Psychotria cyanococcus*, with clusters of rich indigo blue berries borne along the stem; the various species of *Rivina*, such as *R. flava* with canary-coloured berries, *R. humilis* with deep red, and *R. tinctoria* with bright red berries. The curious *Columna Schiedeana* so beautiful in flower is not less so in fruit, for the berries that resemble the common Snowberry (*Symphoricarpos racemosus*) in a striking degree nestle prettily in the centre of the red star-shaped calyx. Another beautiful plant specially adapted for suspended baskets is *Coccocypselum repens*, which has indigo blue berries the size of large Peas produced on slender branches that hang gracefully on all sides of the basket. All the above may be seen now in perfection in Nos. 8 and 9 houses.

**MUSHROOMS FROM MR. BARTER.**—One of the most interesting exhibits seen at South Kensington on Tuesday last was sent there by Mr. Barter, who wrote the article on Mushroom culture lately published in *THE GARDEN* (p. 524). It consisted of illustrations of his very successful culture of the Mushroom, and certainly bore out all that he has written on the subject, for seldom have we seen a finer or more extensive display of Mushrooms of every size, from "buttons" to huge specimens 8 in. or 9 in. across, and weighing at least 1½ lbs. The small ones were in dense masses, indicative of the fine quality of the spawn, samples of which Mr. Barter also showed, and which, by its appearance and odour, bore unmis-takeable proof of its efficiency. We understand that the exhibitor makes quite a speciality of Mushroom spawn manufacture and Mushroom growing, the produce being sent to Covent Garden Market daily in large quantities.

**EUPHARIS AMAZONICA.**—We grow a quantity of this useful plant for cutting and table decoration. The soil that we use for them is the Clumber Park soil, or what may be termed good fibrous loam. Stacked for a season or two until the fibre



is decomposed, or from the appearance of the plants, they seem to flourish in this soil. They are now sending up their first crop of flowers for the new year. Sometimes we plunge the pots in bottom heat, but at present they are standing upon shelves in a division of one of our Melon houses. We grow them in various sized pots, from 5 in. to 10 in. across, which come in very suitable for our purpose. We keep the plants upon the green and growing system, in a brisk temperature, syringing over-head in order to keep a moist atmosphere. We consider the drying-off system a loss of time.—J. MILLER, *Clumber*.

**POINSETTIAS.**—I see of late there has been some remarks anent these. I saw when looking through the houses, in a neighbouring garden where these are made a speciality (being grown in quantity and of various heights, and in pots from 3 in. upwards), some of the heads, and they were 19 in. across, and many of them were 16 in., and these plants had beautiful green foliage almost down to the pots. I also observed at one end of the house a dozen or more of the double bracted variety of this plant equally healthy, although much later than the ordinary type. I think it is a pity the white form of this plant is not more often grown. Although not so useful as the red, it grows well under the same cultivation.—J. C. F.

**KAULFUSSIA AMELOIDES** as grown in the conservatory (No. 4) at Kew is an uncommonly pretty plant, particularly well adapted for the purpose for which it is used, as it is of compact dwarf growth, and flowers freely in small pots. The Daisy-like blossoms are as large as a florin, of a lovely sky-blue colour, with a conspicuous golden centre. It is a flower that every one admires for its colour, which is rare, especially at mid-winter. It is grown frequently in the open air, treated as an annual. It is known also as *Charieis heterophylla*, and is a native of the Cape of Good Hope, introduced from there sixty years ago.

**BILLBERGIA VITTATA MACRANTHA** is the finest of the Bromeliads in flower in the Palm house at Kew. Its broad, spiny-edged leaves, transversely banded with white on a greyish green ground, are arranged in the form of a hollow cylinder some 2 ft. in height, from out of which come the flower-spikes that droop over the sides about 6 in. in a charming manner. The membranous floral leaves or bracts are a bright scarlet, while the long flowers are a rich purple—a beautiful contrast in colour. It is a plant that certainly deserves to be grown by every one, as it never fails to flower in mid-December. It is apparently the same as *B. farinosa* of some collections.

**CANARINA CAMPANULATA.**—This quaint old occupant of the greenhouse is now seldom grown, except in botanical collections. It is a herbaceous plant which grows about 3 ft. in height, with deeply cut leaves and a symmetrically pyramidal habit of growth. The flowers are large, perfectly bell-shaped, and drooping, and of a reddish yellow, veined with a deeper hue. This colour is remarkable in a family in which purple and blue flowers prevail. It is a native of the Canary Islands, and is of easy culture, under ordinary greenhouse treatment flowering invariably in winter. In flower at Kew.

**WINTER-FLOWERING ALOES.**—The Cactus house at Kew is now enlivened with various species of South African Aloes that habitually flower in the winter season. The most noteworthy in bloom now are *A. arborescens* and its variety *frutescens*, both of which assume a tree-like character, having tall woody stems, surmounted by a huge tuft of fleshy leaves overtopped by

branching flower-stems, each branch being terminated by a dense cluster of drooping flowers of a bright orange-red colour, producing a showy effect. *A. platylepis* is another very ornamental species, much in the way of the preceding, as indeed are all the Cape arborescent Aloes.

**EREMURUS ROBUSTUS AND HIMALAICUS.**—Mr. W. E. Gumbleton has kindly brought us a life-sized and large sketch in colour of these remarkable plants; they remind one somewhat of the old *Asphodelus*, but are much larger and stouter, with immense, rigid, erect spikes. The plants must be very striking in the sun when in flower, but whether they are likely to be ornamental and lasting enough in our gardens, to make them permanent occupants thereof, we cannot say without seeing them growing. We believe that at least one of these species has flowered with Mr. Gumbleton for the first time in Europe.

**COPROSMA LUCIDA IN FRUIT.**—This is a very handsome shrub when laden with bright orange-scarlet berries about the size of those of the Mistletoe, and, like them, semi-transparent. Being a native of New Zealand, and consequently requiring the shelter of a house, it is only fitted for planting in large conservatories, as it seldom fruits unless allowed to grow freely. A specimen of it in the temperate house at Kew planted in one of the beds is every winter very showy owing to the quantity of berries with which it is laden. It is at the present time in full fruit.

A USEFUL WINTER FLOWER is *Sericographis Ghiesbreghtiana*, of which there are just now some good flowering examples in the temperate house at Kew. The pretty feathery racemes of scarlet flowers overtopping the green foliage are very attractive, and most useful in a cut state, as the flowers last in good condition for some time. It is easily managed if placed while growing in a moderately warm house and transferred when in flower to a cool greenhouse or conservatory.

**THE URN FLOWER** (*Urceolina aurea*).—Now finely in bloom in the Victoria Nursery, Upper Holloway, is a very pretty winter flowering bulbous plant, so very distinct from other plants. The drooping umbel of urn-like blossoms of a bright canary-yellow, tipped with green, makes them highly attractive. It lasts, too, a long time in good condition if not kept in a too hot and moist atmosphere. Well grown, it is a welcome addition to the indoor garden. It is sent in good condition by Mr. Crooke, from Farnborough Grange.

**NICOTIANA TUBIFLORA.**—Under this name Mr. Vertegans, of the Chad Valley Nursery, Birmingham, sends us a rather pretty plant with long spikes, bearing numerous white funnel-shaped blossoms with long tubes. They are sweetly scented and welcome at this season. The plant seems to be identical with *N. affinis* or *noctiflora*.

**FROM DUBLIN.**—We had small bit of frost here two mornings ago; nothing to hurt, however. Paris Daisies are still in flower in the open border; also *Ionopsidium acaule*, *Geum coccineum*, Stocks, Wallflowers, Christmas Roses, *Jasminum nudicaule*, Anemones, &c.—F. W. B.

**LIBONIA FLORIBUNDA.**—A bright pretty plant, not often well grown, but remarkable for its distinct colour and habit rather than for any beauty of form. What we mean is, it is rather too trim and sticky to be a first-rate plant. Well-flowered specimens come to us from Mr. Crooke, of Farnborough Grange.

**THE WEATHER AND HARDY FRUIT.**—The weather has had a marked effect on the finer hardy fruits, particularly Pears, in deteriorat-

ing and hastening the decay of the best home-grown kinds. The finer Pears of this season are scarcely obtainable or saleable; many of them purchased for the purpose of keeping by the trade have been spoiled through premature decay.

## SOCIETIES.

### ALEXANDRA PALACE CHRYSANTHEMUM SHOW.

DECEMBER 9 to 13.

To a Chrysanthemum show in the second week of December considerably more interest attaches than to the numerous exhibitions that are held in November, when the Chrysanthemum is in the height of its season. The extreme early or late productions of any kind of flower, fruit, or vegetable are of more value than such as come in at a season when there is plenty of all kinds, and it was with the view of encouraging the growth of late bloomers amongst Chrysanthemums that induced the lessees of the Alexandra Palace to offer prizes to the amount of some £50 to be competed for at this date. That the invitation was not numerously responded to is not to be wondered at, for the majority of cultivators—or at least exhibitors—of the Chrysanthemum were not prepared to show at so late a date, and the extremely mild and even warm weather that prevailed during November militated in no small degree against the success of the exhibition. Still it was an instructive one in so far as it showed well what varieties are best for late blooming, or those that could be retarded so as to produce exhibition flowers of fair quality late in the year.

The pot plants formed the worst part of the show. Anemone-flowered kinds and Pompones were the only sections shown in pots, though liberal provision was made in the schedule for the large flowered and Japanese varieties, which latter ought certainly to be shown under pot culture more frequently than they are, though perhaps the ungainly habit of growth that characterises most of them is against their being shown in this way.

Among the pot plants of the sorts shown in best condition were *Le Vogue*, a bright yellow Pomponé, one of the best of its colour, and flowering later than most others; *Antonius*, too, was bright and fresh, as was also *St. Michael*, a yellow Liliputian and an excellent late flower, though, perhaps, not so fine as *Général Canrobert*, a valuable yellow sort. The flowers of *Fanny* were well preserved, as were also those of *Julie Lagravère*, which, by the way, was shown among the Pompones. *Calliope* is a bright ruby-red Anemone variety; and the charming *Marie Stuart*, which for the delicate beauty of the lilac blush flowers, is unequalled in its class, was produced in good condition. The other pot plants showed evident signs of distress from long keeping. A week ago the worst plants here must have been fine, and the circumstance well illustrates what a length of time the plants may be kept in good flowering condition by a little careful treatment as regards preserving the bloom from the evil effects of damp at this season.

**CUT FLOWERS.**—As before observed among these there were some really fine blooms, and, having regard to the date of the show, creditable to the exhibitors. Mr. Hill's collection of two dozen blooms of the large flowered and Japanese types was uniformly of good quality, and as the names of the varieties may be useful to our readers we give the whole of those shown by this exhibitor who grows the later kinds well and has a capital way of preserving the earlier kinds in good condition. The Japanese sorts shown were, *Ethel*, white; *Nuit d'Hiver*, saffron-bronze, an excellent late sort; *Dr. Masters*, a showy variety that always comes fine late; *Apollo*, cinnamon, keeps well; *Baronne de Prailly*, a beautiful spreading flower of a deep rosy-pink, a colour which comes richest and deepest in the late produced flowers; *Parasol*, an attractive gold buff kind; *The Sultan*, a good



mid-season sort, but flowers late as well, and Bronze Dragon. The incurved blooms consisted of Bella Donna, Venus, Hero of Stoke Newington, Lady Slade, Princess Beatrice, and Princess Teck, all of a pinkish tint of colour. Of yellows the best were Jardin des Plantes and Guernsey Nugget, and of bronzes Mr. Jay, Abbé Passaglia, General Slade, and there were also two very beautiful sorts, Crimson Velvet, of a rich velvety crimson, and Heroine a reflexed sort with sulphur yellow in the centre, shading off into pink at the circumference. The next collection of 24 blooms though good did not contain nearly so great a variety, for instance, there were four blooms of Striatum, a beautiful striped crimson sort, four of Guernsey Nugget, four of Lady Carey, and three of the white Meg Merrilees. Baronne de Prailly was again shown finely by this exhibitor, also John Salter, Golden Eagle, Pluton, Dr. Masters, Hero of Stoke Newington and Grandiflorum. In the other collections there were good flowers of The Daimio, Bouquet Fait, Cry Kang. M. R. Dine, all Japanese sorts of a pinkish hue, also Eve, Yellow Dragon, Ne Plus Ultra, Sarnia, Barbara, Lady Hardinge, Mr. Gladstone, Fair Maid of Guernsey, White Globe, General Bainbridge and Mrs. W. Shipman.

Among the out Anemone-flowered kinds, and Pompones the best were of Marie Stuart, Fair Margaret, Pearl, Grace Darling, Antonius, Nellie, Mr. Astie, Bijou d'Horticulture, Fleur de Marie, Acquisition, Gluck, King, and Prince of Anemones, Lady Mary, Miss Bloustand, Emperor, Empress and Pericles, all excellent for late bloom.

**MISCELLANEOUS.**—The most prominent exhibit in this class was a wonderfully fine collection of Chinese Primulas and cut Pelargoniums from Messrs. Cannell & Sons, Swanley, which gave an air of brightness to the exhibition. The Primulas consisted of the Swanley Red, White, Purple, Carminata, and Delicata, all perfect as regards their respective colours, and admirably showed to what a high state of perfection these growers have brought the Chinese Primula. The zonal Pelargoniums consisted of the finest of the varieties suitable for winter flowering, and as their names may be of use to our readers we give them. Of doubles there were Urania, Henri Cannell, F. V. Raspail, Sergt. Hoff, M. Plaisançon, Candidum plenum, Jules Simon, Denfert Rochereau, Roi des Violets, Circe, Heroine, Silvia, Aglaia, and Namur. The single-flowered zonals consisted of H. M. Pollett, Henri Jacoby, La France, S. Birkey, Mrs. Moore, Lizzie Brooks, Hettie, Eva, Mr. Strutt, W. B. Miller, Eureka (the best white known), Lucy Christine, Beatrice, and J. Wakeford. All these are very beautiful sorts, and well adapted for winter flowering. Messrs. Cannell also showed a plant of Vesuvius, one branch of which bore a truss of pure white flowers, the other those of the normal bright scarlet hue.

A large and interesting collection of Cacti and other succulents was shown by Mr. Boller, Kensal New Town, among which we noticed some rare kinds, including the singular Echinocactus Wislizeni, which is an oval mass covered with strong hooked spikes, and often attains in its native habitat in Colorado a height of 3 ft. and 4 ft.

#### List of Awards—Cut Blooms.

24 large-flowering varieties.—1, Mr. Hill, gardener to A. Savory, Esq., Potters Park, Chertsey; 2, Mr. T. P. Kendall, Roehampton, Surrey.

18 large-flowering varieties.—1, Mr. Butcher, gardener to R. A. Glover, Esq., The Priory, Hadley, Barnet; 2, Mr. W. E. Clark, gardener to A. Nagle, Esq., Bijou Cottage, Kingston, Surrey.

12 large-flowering varieties.—1, Mr. W. E. Clarke; 2, Mr. Stewart, Langford Park, Malden.

12 bunches of Pompones varieties.—1, Mr. Clarke; 2, Mr. Butcher; 3, Mr. Kendall.

24 bunches of Pompones varieties.—Mr. Butcher.

12 Anemone-flowered sorts.—Mr. Kendall.

#### Pot Plants.

8 Pompones varieties in pots.—1, Mr. Butcher.

6 Pompones in pots.—1, Mr. Butcher.

3 standard plants in pots.—1, Mr. Butcher.

Extra first prize to Messrs. Cannell & Sons, Swanley, for Chinese Primulas and cut flowers.

Extra prize to Mr. Boller for a collection of Cacti, &c.

#### ROYAL HORTICULTURAL SOCIETY.

DECEMBER 13.

For a mid-December exhibition, and having regard to the inclemency of the weather, last Tuesday's meeting was of unusual interest, there being a rich display of new and rare plants and seasonable flowers, some creditable examples of fruit, and an excellent exhibition of vegetables, particularly those in competition for Messrs. Carter and Co.'s prizes. Amongst new plants submitted to the committee the following were awarded first-class certificates:

To Messrs. Veitch, Royal Exotic Nursery, Chelsea, for—

**CALANTHE BELLA**, a beautiful hybrid Orchid, raised between *C. vestita*, the species with a white flower having a deep crimson centre, and *C. Turneri*, also with white flowers and a carmine eye. The progeny combines in a remarkable manner the beauty of both species. The flowers are as large as those of *C. Turneri*, produced on long arching spikes densely covered, as in *C. Turneri*, with soft downy hairs. The outer three sepals are white, the inner two flushed with a delicate bluish tint; the lip is broad, rather deeply cleft into four lobes; the colour, a delicate bluish pink, contrasts beautifully with the conspicuous deep crimson-carmine blotch at the base, while the column is also of the same colour. The bulbs most resemble those of *C. vestita*.

**MASDEVALLIA IGNEA MASSANGIANA**.—This variety of a beautiful winter-flowering species has larger blossoms than the type, more rounded in outline, and of a fine orange scarlet colour, striped longitudinally with crimson. It is free in growth, and quite as floriferous as the type; therefore a valuable acquisition.

Mr. Bull, New and Rare Plant Nursery, Chelsea, for—

**CŒLOGYNE BARBATA**.—A handsome and distinct Orchid, bearing erect flower-spikes from 1 ft. to 1½ ft. high. The flowers are large, from 6 to 12 on a spike, pure white, except the shell-like lip, which is of a bronzy brown colour, and exquisitely fringed at the margins. It is a free grower and flowerer, succeeding in an intermediate house. A native of Assam.

Mr. B. S. Williams, Victoria Nursery, Upper Holloway, for—

**PHALANGIUM ELEGANTISSIMUM**.—A highly ornamental plant in the way of the variegated *Anthericum comosum*. The leaves are long, and marked with longitudinal bands of green and yellow of various shades, forming a gracefully recurved tuft.

Messrs. Cannell & Sons, The Nurseries, Swanley, for—

**HELIOTROPE WHITE LADY**.—The finest variety of the Peruvian Heliotrope yet raised. It bears clusters 6 in. or more across of nearly pure white blossoms, the perfume of which seems to be much stronger than that of the ordinary kind. The plant is altogether of a robust character. Even small-rooted cuttings shown bore large trusses of bloom. A white flowered Heliotrope cannot fail to be highly valued in winter.

Mr. C. Turner, Royal Nurseries, Slough, for—

**CARNATIONS DUKE OF ALBANY and NEGRO**.—Two extremely fine varieties of the tree or perpetual flowering section. The former bears flowers between 2 in. and 3 in. across of a beautiful vivid scarlet. Negro has somewhat smaller flowers, but very compact, and of a deep maroon-crimson. These were selected as the best from about a dozen new kinds exhibited.

Mr. Read, The Gardens, Moat Mount, Mill Hill, for—

**ONCIDIUM FORBESI** variety, provisionally named Carder. It is by far the finest form of this Orchid we have yet seen, the flowers being over 2 in. across, the sepals and lip unusually broad and of firm texture. The colour is a rich chocolate brown, but the beautifully crisped margins are of a bright golden-yellow.

Messrs. Veitch contributed a group of new and rare plants among which were several well

flowered plants of the new *Begonia socotrana*, which promises to become one of the most important of winter flowering plants. The delicate rosy-pink colour of the blossoms is certainly very lovely, and attracts everyone. In the same collection was a fine plant in flower of the new Bornean Jasmine (*Jasminum gracillimum*), which showed well the true character of the plant and how freely it produces its long wreaths of pure white, deliciously perfumed blossoms in mid-winter. Carnation Andalusia is a beautiful tree Carnation, with finely fringed flowers of a delicate sulphur yellow. It was shown better on this occasion than hitherto. Two extremely fine varieties of *Amaryllis* were conspicuous; they were Autumn Beauty, a hybrid from *A. reticulata*, with large carmine flowers, beautifully netted and banded with white; the other was the Siren, a tall growing kind, with large blossoms of a rosy-carmine; the plant shown has seven flowers. Among Orchids were *Cypripedium microchilum*, a new hybrid between *C. niveum* and *C. Druryi*. It is remarkable for its extremely small, pouch-like labellum; the colour is white, spotted and striped down the centre of each sepal with deep brown. *Masdevallia Fraseri*, an interesting hybrid between *M. ignea* and *M. Lindenii*, reminds one strongly of *M. amabilis*, and is exactly intermediate between the two parents. *Odontoglossum odoratum*, a fine specimen, bore a large branching spike; another, called *O. nævium majus*, appeared to be *O. gloriosum*. The interesting *Adiantum fissum* was also shown, and these, together with a group of about a hundred well-grown plants of the Persian Cyclamen, made a very attractive display.

Mr. Bull exhibited some two dozen plants of the new double *Bouvardia*, Alfred Neuner in fine flowering condition, likewise *Odontoglossum polyxanthum pictum*, a remarkably fine variety, having larger flowers than those of the type, and with larger and more strongly defined markings; also a large flowering plant of *Billbergia formosa*, one of the noblest and most beautiful of Bromeliads.

From Mr. B. S. Williams came a choice group consisting of a new Pitcher Plant (*Nepenthes Dormanianus*), which promises to be a very handsome variety, the pitchers being highly coloured and freely produced; *Cypripedium meirax*, a hybrid between *C. venustum* and *C. barbatum* and *Sisymbrium Millefolium*, a most elegant species with finely cut greyish-green foliage. It is said to be hardy. The double *Bouvardia* was also shown finely by Mr. Williams.

As usual, the Messrs. Cannell made a bright display with their winter-flowering Pelargoniums, which they showed in great variety; also some 50 cutspikes of the beautiful blue *Salvia Pitcheri*, intermixed with the scarlet *S. rutilans*, and thus producing a novel and beautiful effect. This firm also showed the old double white Primula in perfection, consisting of about two dozen of the finest plants that we have ever seen grown in 6-in. pots. Each plant, which was 1 ft. or more across, was furnished with healthy green foliage and an abundance of trusses of pure white flowers. Grown in this manner, the Primula is a most beautiful and valuable winter plant, and extremely useful in a cut state. Messrs. Cannell also had a new single Primula named Queen of the Pinks, a lovely variety, perfect in habit, free in flower, and distinct.

Mr. Herbert, Kew Nurseries, Richmond, sent a few plants of forced Lily of the Valley to show the fine condition in which he sends his plants to market at this early date, and they are certainly as fine as could be produced. A trayful of common and coloured Primroses from the Knap Hill Nursery, Woking, was a welcome sight in mid-December, and was a good illustration of the hitherto mildness of the season.

A group of new Tree Carnations from Mr. Turner, Slough, was a great attraction. There were a dozen distinct kinds, all new, and raised by the exhibitor. Besides those certificated, there were Firefly, Nimrod, Model, all rich crimson; Brightness, vivid scarlet; Wizard, deep crimson;



Lady Bramwell, vermilion; Dauntless, purple-lake, flaked with scarlet; and Tom Thumb, the latter only a few inches high, with vivid scarlet blossoms. Out of such a number of fine varieties it was difficult to select the best, but the two that the committee certificated were fine in every point.

A beautiful group of Chinese Primulas was exhibited by Mr. Odell, Hillingdon, Uxbridge, the most noteworthy being *Alba magnifica*, white with crisped-edged foliage; *Rubra Improved*, lilac purple; *Queen Victoria* and *Empress*, rich crimson.

A large group of the new *Primula*, *Holborn Gem*, was exhibited by Messrs. Carter, the distinct blue-purple of which renders it a most attractive variety, though the dim light under which it was exhibited did not show off the true beauty of the colour to advantage.

Mr. Vertegans, Chad Valley Nursery, Birmingham, sent plants of *Nicotiana tubiflora*, a species with long white, sweet-scented flowers; *Phlox* Miss Robertson, a white-flowered dwarf sort, and *Sisymbrium Millefolium*, referred to above.

The new double-flowered *Mignonette* was again exhibited by Mr. Balchin, of Hassocks Gate, in order to show its true flowering character in winter; also his new scarlet *Bouvardia Dazzler*, one of the brightest and best of all the varieties we know of.

Mr. H. B. Smith, Ealing Dean, showed another example of his strain of *Persian Cyclamen* named *Prince of Wales*, remarkable for the size of its blooms, which are of a beautiful deep crimson.

A remarkably fine example of *Dahlia imperialis* came from Mr. Wheble, Bulmershe Court, Reading. It was the top of a stem 18 ft. high, the part shown being profusely laden with flowers. The plant had been grown in a pot in an ordinary Peach house, the stem being slightly bent down.

Mr. Buchan, Wilton House, Southampton, sent a flowering plant of *Odontoglossum Lehmanni*, a dull coloured species scarcely worth growing if no better than the plant shown.

*Calceolaria Burbidgei*, a handsome hybrid between *C. Pavoni* and *C. fuchsifolia*, was shown by Mr. Douglas, Loxford Hall, Ilford, to whom a vote of thanks was accorded. A large and well arranged group of winter plants such as *Poinsettia*, *Primula*, *Begonia insignis*, interspersed with Ferns and other graceful foliage was sent by Mr. Barron from the society's garden at Chiswick, contributing largely to the attractiveness of the meeting.

FRUIT was not so plentiful as usual, though some excellent Grapes were shown. Three fine bunches of *Black Alicante*, well coloured and finished, came from Messrs. Laing, Vineyard Nursery, Forest Hill. Mr. Robert Fisher, Bangor Castle, Co. Down, sent fair examples of *Gros Guillaume*, and three large and fine bunches of the same variety were shown by Mr. Barron from Chiswick; *Pearson's Golden Queen* was shown well by Mr. J. R. Allis, Old Warden Park, Beds, but the committee considered it inferior to the *Muscat of Alexandria* which ripens under the same conditions. Mr. J. Wallis, Keele Hall, Newcastle-on-Tyne, sent some good examples of *Black Alicante*, Mrs. Pearson, *Muscat of Alexandria*, *Golden Queen* (well coloured), two excellent bunches of *Gros Colmar*, and a fine bunch of *Barbarossa*.

From Earl Fortescue's garden, Castle Hill, Devon, Mr. D. Wilson sent four admirable *Smooth Cayenne* Pine-apples, two weighing each 6½ lbs., the others 5 lbs. 4 oz. and 5½ lbs.

Cucumbers were numerous. Mr. Gilbert, Burghley, sent a brace each of *Montrose Seedling* (No. 1 and No. 2), *Frost's Prolific*, and *Veitch's strain of Telegraph*, all of which seem to be excellent sorts for winter use. Mr. Sutton, Ashley Park, Walton-on-Thames, sent a brace of uncommonly fine fruits of *Model Cucumber*, measuring some 2½ ft. in length, which were deservedly awarded a cultural commendation. Mr. Perkins, gardener to Lord Henniker, Thornham Hall, Suffolk, contributed a pair of fruits of *Dell's Hybrid Melon*, both creditable for the season. A vote of thanks was accorded to the exhibitor.

Apples were numerous, but they were chiefly unnamed seedlings. Mr. T. Laxton, Girtford, Beds, sent *Missouri Pippin*, *Franklin's Golden Pippin*, and *Henry Webb*, the latter a large culinary sort. Mr. S. Ford, Leonardslee, Horsham, furnished an excellent sample of the small red *Margaret Henrietta*, and seven seedlings came from the Rev. J. M. Straffan, Tillington Rectory, Petworth.

VEGETABLES.—A first-class certificate was awarded to *Winchester Red Celery*, a large and excellent variety, grown at Chiswick from seed sent there by Messrs. Rutley and Silverlock, 412, Strand.

Mr. W. Findlay exhibited two dishes of fine Onions, which he calls *Wroxton*, said to be a cross between *Improved White Spanish* and *Williams' Magnum Bonum*. The same exhibitor also sent *Brussels Sprouts* named *Wroxton*, which the committee considered to be too coarse. *Giant Brussels Sprouts*, a fine variety, selected 35 years ago, were shown by Messrs. Cutbush, of Highgate. Messrs. Carter showed samples of their new *Golden Queen Onion*, a remarkably distinct sort which the committee recommended for trial at Chiswick. Onions *Reading Improved*, *Nuneham Park*, and *Magnum Bonum* were shown well by Mr. Ewart, Wanford. Mr. Gilbert exhibited *Barr's Giant Cos* and *Bath Cos Lettuces*, both excellent winter sorts and very hardy.

An uncommonly fine dish of *Mushrooms* sent by Mr. Lyon, gardener to Sir E. H. Scott, Sundridge Park, Bromley, was deservedly awarded a cultural commendation. Some remarkably fine *Mushrooms* were also shown by Mr. J. F. Barter, Harrow Road, to which allusion is made in another column.

SPECIAL PRIZES.—There was a brisk competition for the prizes offered by Messrs. Carter & Co., High Holborn. Mr. Austen's collection, which was first, was in every respect excellent, not a faulty dish being among the dozen shown. They consisted of *King of Cauliflowers* (very fine), *Maltese Parsnips*, *Muskelburgh Leek*, *Incomparable Celery* (excellent), *Jersey Lily Turnip*, *Carter's Perfection Beet*, *Schoolmaster* and *King of Potatoes*, *Carter's Scarlet Incomparable Carrot*, *Improved Reading Onion*, *Carter's Perfection Brussels Sprouts*, and *Hathaway's Excelsior Tomato*—altogether a matchless selection of winter vegetables. The next best, from Mr. Haines, contained *Student Parsnip*, *Autumn Giant Cauliflower*, *Major Clarke's Celery*, *Perfection Sprouts*, *Carter's Naseby Mammoth Onion*, *Jersey Lily Turnip* (very fine), and *Tender and True Cucumber*. The best among the third collection, from Mr. Phillips, included fine examples of *Autumn Giant Cauliflower*, *Maltese Parsnip*, *Celery*, *Naseby Mammoth Onion*, *Snowflake* and *Schoolmaster Potatoes*, *Perfection Beet*, and *Long Surrey Carrot*. Among the other collections, of which there were four, were noticeable *Carter's Dwarf Red Celery*, *Pine-apple Beet*, *Wollaton Brussels Sprouts*, *Vick's Criterion Tomato*, *Early White Stone* and *Silver Ball Turnip*, *Sulham Prize Celery*, *Vicar of Saleham*, *Purple Kidney*, and *Snow's Winter White Cauliflower*. In nearly all the collections *Carter's Perfection Beet*, *Perfection Brussels Sprouts*, *Naseby Mammoth Onion*, and especially the *Maltese Parsnip*, were conspicuously good.

#### List of Awards.

1, Mr. Austen, Ashton Court, Bristol; 2, Mr. S. Haines, Cole Hill House, Highworth; 3, Mr. R. Phillips, The Deodars, Meopham; 4, Mr. R. Gilbert, Burghley House, Stamford; 5, Mr. R. Lloyd, Brookwood, Woking; 6, Mr. G. Goldsmith, Hollanden, Tonbridge.

In addition to the competition for Messrs. Carter's prizes, that firm filled one side of the entrance corridor with an interesting miscellaneous display of vegetables, among which was a collection of *Kales* grown at Messrs. Carter's trial grounds, the range of colour in the variegated section being very remarkable. There were also some curious hardy Continental varieties, notably the *Chou de Russie*, which withstood the effects of the last severe winter in Messrs. Carter's trial grounds when all other varieties grown side by side with it were destroyed. A large collection of *Potatoes* was also shown, amongst which were

*Improved Magnum Bonum*, and *Select Scotch Champion*, *Holborn Favourite*, *Cleopatra*, *Worm-leighton Seedling*, and *First Crop Ashleaf*; the last is a finely-shaped kidney of the true *Ash-topped* form, as early as the earliest in cultivation with a top not more than 6 in. long, and yet as productive as the more prolific varieties. *Worm-leighton Seedling* is a distinct and desirable variety, which when first shown was awarded a first prize as the best white kidney. It is distinct from *Magnum Bonum*, being shorter in the haulm, more prolific, and better in quality. *Cleopatra* kidney, a handsome second early, has, we believe, been awarded a first-class certificate at Chiswick. Of *Scotch Champion*, probably the latest *Potato* to commence to form tubers, a fine heap was shown.

Lecture.—The Rev. G. Henslow took for the subject of the lecture the "Diversity of means utilised by Nature to secure similar or identically the same ends." He illustrated it (1) by the process of doubling in flowers; (2) by a peculiar method of securing the fertilisation of flowers in *Salvia*, *Calceolaria*, and *Roscoea*, of the *Gingerworts*, each representing a different family—the process consists of a kind of lever which oscillates in a vertical plane; (3) by various methods of colourisation, so that different organs may be coloured, but which secure the same object of rendering the flower attractive to insects; and (4) methods of entrapping insects for food. The process of doubling varied in different flowers; thus, the pistil may remain perfect, but the petals and stamens (converted into petals) multiplied, as in *Carnations*, &c. The pistil may become foliaceous, and the rest of the flower a mass of petals as before. Such occurs in the double *Cherry*. The petals alone may be multiplied, the stamens and pistil remaining perfect (he had found this in double *Stocks*), or the whole flower may be converted into a dense ball of more than fifty petals, as in double *Wallflowers*. Again, a double flower may consist of a repetition of calyx and corolla over and over again, as in *Rock Rose*. Lastly, double *Poinsettias* were merely a multiplication of bracts; and double *Composites* a conversion of "disk" florets into "ray," as in the *Chrysanthemum*, *Daisy*, &c.

As illustrations of coloured organs, the lecturer exhibited *Poinsettias* and *Euphorbia jacquiniæflora* as showing how bracts could mimic a true flower. *Everlastings* were another instance of the same kind. In many cases it was the calyx, as in *Anemone* and *Marsh Marigold*.

A *Nepenthes* illustrated a carnivorous habit, and the lecturer made observations as to the use of such habit, as proved by Mr. Francis Darwin's experiments on *Drosera*, which clearly showed that the chief benefit lay in the production of seed.

#### Scientific Committee.

*Lilies attacked by larvæ of Brachycerus sp.*—Mr. McLachlan exhibited larvæ received from Mr. G. F. Wilson, of Weybridge, which eat into the centre of the bulbs of *Lilies*.

*Cocoa-nut attacked by larvæ of Hylocactus sp.*—The same gentleman also showed some remarkable larvæ with a curiously indurated joint below the head. The species, he observed, was remarkable in penetrating soft wood of Palms, as the European species attacks hard wood, such as *Firs*. He had met with the latter in the *Black Forest*.

*Proliferous Fir cone.*—Dr. M. T. Masters exhibited a cone of *Abies Douglasi*, in which the bracts were foliaceous, but the seed-scale partially atrophied, as is usually the case in *proliferous* cones. He contrasted this with a *proliferous* state of *Sciadopitys verticillata* (see Veitch's "Manual of Conifera," fig. 46) in which the seed scale became foliaceous, the bract remaining normal. The importance of this latter specimen in relation to the nature of the so-called leaves of *Sciadopitys* and of the seed-scale of the *Abietinæ* was commented upon.

*Embryo bud of Oak.*—Mr. W. G. Smith exhibited a specimen about 1½ in. in diameter. It was removed from beneath the bark. Such are extremely common in *Beeches*, in which they vary from the size of *Peas* to that of *one's fist*.



**National Rose Society.**—At the annual general meeting of this Society the committee congratulated the members on the continued success of the Society. More especially was this the case at Sheffield, where its provincial exhibition proved to be the best yet held out of the London district. Two handsome challenge trophies, each of the value of about sixty guineas, which had been subscribed for early in the season by amateurs and nurserymen respectively, and presented to the Society, were for the first time competed for at the last metropolitan exhibition. The one given by the Rose nurserymen was awarded to Mr. R. N. G. Baker, of Exeter, and the other to Mr. B. R. Cant, of Colchester. The contests for these two valuable gifts added greatly to the interest of the show, and the same may be said of the various other cups and pieces of plate offered for competition at both the metropolitan and Sheffield exhibitions. The next provincial exhibition will be held at Bath on June the 28th. The Rev. Canon Hole was re-elected president.

## THE KITCHEN GARDEN.

### AMERICAN CELERY.

AN English gentleman, much interested in horticultural matters, being about to return home after a brief visit to this country, asked us to put him in the way of procuring various garden appliances that he would like to take back with him, and also various seeds. Among other seeds he asked for some of our best varieties of Celery, as he had found that vegetable, even quite early in the season, solid and crisp, and greatly superior to that at home. The fact is, that there is very little Celery seed sown in this country that is not imported from England and other parts of Europe, and the superiority that is found in our Celery does not consist in the variety, but in the manner of growing it. In England, except by a very few market gardeners who have learned better, Celery is still generally grown in the old way of planting it at the bottom of a trench, 2 ft. or so in depth. As the plants grow the earth is from time to time filled into the trench. The upward growth continues, but a good share of this is at the expense of the lower part of the stalks, which are robbed of their nutriment, and become hollow or "piped." In our method, followed by all except the few who adhere to old ways, the Celery stalks are first allowed to make a strong, healthy, and solid growth. When the growing season is about over, these stalks are earthed up and, being excluded from light, they become perfectly blanched, and at the same time that they are deprived of their green colour they also lose their strong flavour, and we have the perfect solid product of a mild flavour, and so much superior to the common kind that our friend supposed it to be a peculiar American variety.—*American Agriculturist.*

[Although the manner in which Celery is cultivated has much to do with its solidity, it is not bad culture that makes hollow Celery. When a good strain of seed is obtained it can readily be kept true, and even indifferent culture will not render the produce hollow. As to blanching, there can be no doubt that if crisp, brittle, ivory-white hearts are required, blanching must be done gradually as the plant makes its growth. Seakale is grown in the dark, and it is tender and brittle, but if it were half grown before being put in the dark no amount of blanching could ever make it eatable. Many market growers allow their Celery to grow to its full size before they blanch it, and large heavy heads are the result. These sell readily in the market, but a very small portion of the head is eatable. It is stringy and tough. If it had been earthed up sooner and oftener the heads would have been much smaller, but would have been nearly all eatable.—S.]

**Huge Tomatoes.**—Gardeners are generally among the most sensible of men, but their pursuit of the colossal is scarcely worthy of them. In the many delicate and pleasant things which they produce for us there are conditions as to size which accompany what is known as excellence.

To grow things larger than the state in which they are best and most tender, or most delicately flavoured, is a great mistake. Perhaps one of the greatest improvements of late years in our gardens, and also in our kitchens, is the introduction of the Tomato. It has become so popular in market and private gardens that, as usual, a number of persons send out new varieties, or what are supposed to be such, though really some of the few striking varieties of Tomatoes sent out as new of late years have mostly been old French kinds with new English or American names. Now, while some variety is desirable, it must be confessed that the original Tomato of the ordinary fair size was as good as any of these, though some of them are fairly good. But among them there are one or two monstrous and large "strains" which are really ugly and coarse, grown or forced by the aid of much thinning and much feeding into the largest state they can be blown up into. If cooked, they are really not worth eating. Perhaps the noblest function to which a really delicate and good Tomato may be put is that of making a salad, which it certainly does make of the most perfect kind, if the oil and vinegar be of the best only, and the manipulation is as it ought to be. Medium or full-sized Tomatoes make it most perfectly, but we have lately met with some rough scarred large fruit, with a big hard core, which are not at all so good for this purpose; therefore, we say, do not strain after the large in this noble fruit, for you only get a bad result. The question of flavour is very important in the Tomato, and we think that it deteriorates in the case of this over-grown fruit, also that some of the new varieties are not so good in flavour as the common old red Tomato. The most important thing in the whole matter is the flavour. We can protect the texture by avoiding the coarse, over-grown fruit, but some comparison as regards the flavour of the different varieties is also desirable.—*Field.*

### Mushrooms out of doors in winter.

I cannot agree with Mr. Barter (p. 524) about his winter Mushrooms in the open air. I have read something of the kind before, but I have never at any time or in any place seen a constant supply of Mushrooms kept up throughout the winter from beds in the open air, although the greatest possible care has been taken to secure such a result. The Mushroom house here is none of the best, and I have often thought if a supply could be had from outside, Mushroom growing would be rendered comparatively easy; but although bed after bed has been made up from September onwards the crop has seldom been satisfactory, and we have had beds which should have begun to bear in November and December not commence to do so until April; nor could we hardly expect them, as 20° or more of frost week after week would, in my opinion, stop the best Mushroom bed in existence from bearing. Much rain, too, soon saturates the thatching, and heavy or repeated falls of snow all militate against the production of outside Mushrooms. How Mushroom beds could be opened up to gather the produce in such Decembers and Januaries as we have had lately without imparting a severe check to the crop, I am at a loss to imagine. Probably some may say they had a quantity of Mushrooms on such and such a time from their open-air beds; but how many can say they have gathered from such beds weekly from September until May for many years in succession? It is a supply like this that is expected from many, and I for one hold that to accomplish this out of doors is impossible.—J. MUIR, Margam, Glamorganshire.

**Gilbert's Cabbage Broccoli.**—We have made a fair trial (in the pot) of this and find it very delicate and good in flavour—peculiarly so indeed. It is large and forms a solid white head, but has withal a better flavour than any other Cabbage which we have tried in the same state. Of its hardness and culture we are unable to speak, and in the specimens cut open there appears no trace of a Broccoli, however small, to show "the cross." We hope Mr. Gilbert, of Burghley, who raised it, will tell us of its origin, cul-

ture, use, and how it helps to enhance the supplies we already get from the descendants of the ever-varying Brassica.

**Tomatoes.**—A correspondent of *The Rural New Yorker* says that the Trophy Tomato is more subject to rot than any other variety he has cultivated; while the Little Gem is perfectly free from it.

**Aster seeds.**—One of the chief German seed growers finds himself compelled to inform his customers that, owing to the inclement nature of the seed season, Aster seeds of certain kinds is such a bad crop that not only is the price doubled, but the growth is stated to be indifferent. We thus learn that some of the difficulties regarding seed-saving which have affected seed growers here have also affected growers on the Continent, and there can be no doubt, although so far little is said about it, that the seed stocks of many other things are short, and the germinating property of the seed anything but high. All the flat petalled Asters are very subject to damp if the weather when the plants are in bloom is rainy; and, indeed, though they will produce seed of fair average quality in dry years, yet in wet ones the crop is generally a failure. The massive blooms are so very retentive of moisture that the organs of fructification are soon destroyed, and then the damp passes into the flower-stems, the bloom droops, and there is an end of it. Where Asters are largely grown for seed, it is necessary that they should have shelter; the best are glass lights, erected and fixed securely over the beds at about 4 ft. from the ground; the plants thus get plenty of air, but are protected from rain. Quilled Asters are less affected by damp, always seed freely, and, except in the case of choice kinds, do not need protection. Indeed, having a first-class strain, it is not advisable in growing for seed solely to cultivate the plants too highly; that may be necessary for the production of exhibition flowers, but does not help the production of seed. Any plant grown either to produce show blooms or seed blooms should not carry more than four or five flowers, and for the first named use the blooms should be carefully supported with stakes and shaded and protected from rain.—A. D.

**Lemons and Oranges.**—Replying to "C. L.," Oranges and Lemons require heat in autumn and winter, and would not flourish in a house heated only in spring. A constant gentle heat is absolutely necessary. The best sorts of Oranges for a cool house are the St. Michaels and the Tangerine. Of Lemons, the Bergamot scented, the Bijou, and the Imperial Lemon. The Tangerine Orange will ripen in an ordinary greenhouse, but it requires heat for protection during severe weather.—R.

**Naming fruit.**—Readers who desire our help in naming Apples or Pears will kindly bear in mind that several specimens in different stages of colour and size of the same kind greatly assist in its determination. Local varieties should be named by local growers, and are often only known to them. We can only undertake to name four varieties at a time, and these only when the above condition is observed. Unpaid parcels not received.

J. C.—Apparently Ne Plus Meuris now in season; but in many cases not so good as usual.

**Names of plants.**—A. S.—7, *Pteris serrulata cristata*; 8, *Athyrium Filix-femina* var.; 9, *Pteris quadriaurita*; 10, *P. serrulata*; 11, *Scolopendrium vulgare* var.—J. D. Waite. *Juniperus virginiana*.—Italy.—*Hibiscus palustris* fl.-pl.

—Thorpe.—*Begonia metallica*.

### COMMUNICATIONS RECEIVED.

D of C.—D. A. C.—T. P.—R. H. V.—E. M. S.—J. C. C.—W. G.—H. J. M.—Miss B.—W. T.—H. P.—C. & J.—J. T. P.—R. M. G.—L. K.—W. W.—T. D.—H.—J. S. W.—J. D.—J. C. A. P. H.—A. P.—C.—C.—H. H. D'O.—A. M. G.—J.—B.—J. G.—K.—C.—D.—C.—H. R. D.—J. C. B.—J. S.—R. K. D.—F. W. B.—C.—D.—W. H. F.—A. S.—R. G.—J. G. B.—A. D.—J. S. T.—H. H.—W. N.—T. D.—W.—J. P.—T. F.—Faux.—K.—J. W.—C.—D.—H. & Sons.—F. D. H.—J. M.—J. M.—W. J. S.—A. M.—J. G.—Z.—E. J.—J. M. L.—R. G.—J. C. S.—D. T. F.—J. C.—W. F.—R. C.—T. S.—H.—F. M. S.—C. & Co.—J. C.—J. H.—H. G.—A. C.—C. B.—H. H. D.—R. H. V.—J. R. J.



"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—*Shakespeare.*

### CACTI INDOORS AND IN THE OPEN AIR.

I WAS very pleased to see in THE GARDEN of December 3 such a beautiful plate of a hardy Cactus. This is one of a class of plants in the cultivation of which I have taken great delight. I have tried a good many species in a considerable number of different positions—in open borders, under walls, on rockwork, in frames, and in greenhouses. I have had some failures, but I think that on the whole I have had considerable success, and am glad to give your readers the benefit of my experience, in hopes that many of them may be induced to attempt the cultivation of some most interesting, but nearly neglected plants. All of them are beautiful, and some quite splendid when in flower. *Echinocereus Fendleri* bears some of the brightest coloured flowers which I have ever seen, a rich purple. In June, 1878, I planted out some small plants of *Opuntia Rafinesquei* in a border under a south wall. The plants have never had any protection whatever from frost, snow, or rain. This is a very cold district, and the two summers after the one in which they were planted were wet and sunless, and they did not flower freely, but last summer these plants when in bloom were a splendid sight. One had 44 flowers upon it, the flowers being very much larger than those shown in the plate. There is, too, a beautiful satiny gloss on the flower of a Cactus that no drawing can reproduce. I tried to dry and press some of these flowers, but failed altogether. Cactus flowers seem almost impossible to prepare for the herbarium. Does any correspondent know how it can be done? When I found that I could not dry the flowers I put one of them down on paper and ran a pencil round it, and thus traced a rough outline, the diameter of which was 4 inches.

No species of Cactus which I have tried does well when planted in a level border. I have seen *O. vulgaris* grown in this way at Washington, U.S.; here it only exists, but does not flower. A narrow rock border, raised about 1 ft. high, against a south wall would be a capital position, but it is much improved if the wall has a good wide coping. The most slightly is a natural one of Ivy. I have a wall here where the Ivy hangs over in such a way that it keeps off a large portion of the winter's snow and rain from the plants growing underneath. In this position I have grown several species of *Opuntia* and *Echinocereus*, an *Echinocactus*, and a *Mammillaria*. Only small plants were tried, yet several of them have flowered in spite of our very severe winters and not very favourable summers. We had 41° of frost here last winter, but none of these Cacti were at all injured by it. My larger plants I have kept till now in cold frames, but I shall probably plant out some of them in my rock garden, where overhanging rocks will ward off from them most of the winter's rain. Last June I planted out 50 species of Cacti and other succulent plants under an overhanging rock; it is, however, too soon to judge how they will fare there; none of them have, however, been injured as yet with 12°, 14°, and 16° of frost.

My large plants in frames I have treated in the following manner: The pots are set on planks resting on a few bricks, and dry Cocoa-nut fibre is packed in between the pots. At this time of year the plants are kept as dry as possible; in fact, no water is given them from about

the beginning of October until March. They become brown or purple and shrivelled during the winter, but as the sun gets more powerful in spring they begin to swell up again and to turn a better colour. When I see this I take it as a sign that I may begin watering them a little. The soil in the pots never becomes dry although no water is given all the winter, for a good deal of moisture condenses at times inside the lights and drops down, and so keeps moist the Cocoa-nut fibre in which the pots are packed. At first the plants are watered sparingly, but when warm, sunny weather sets in, a large quantity of water is given them so as to soak them thoroughly. The syringe also is used freely; in fact, during hot weather the Cacti are treated almost exactly like the Cucumber plants in the neighbouring frames—watering and syringing at about 3.30 every afternoon in really hot weather, and then shutting down the lights close and keeping them so until the last thing in the evening, when the lights are raised considerably at the back, and 1 in. or so in front. The first thing in the morning they are drawn right off and kept off all day except during misty or rainy weather. After the beginning of August less and less water is given at a time and at longer intervals till about the beginning of October, when watering is stopped altogether. During autumn and winter, as well as in summer, the lights are taken completely off on every fine day, and when the lights are on as much air is given as possible. My object in treating the plants in this manner is to induce them to make a healthy rapid growth during warm weather, and as early in the season as possible, so as to give plenty of time for the growth to ripen. A plant of *Echinocereus gonacanthus* which has been for two years in a greenhouse has never flowered, while all the plants of the same species which have been more freely exposed to the air have flowered freely every season; one plant had 30 of its scarlet flowers upon it last June at the time when it was exhibited at the Royal Horticultural Society's show.

The blooms of many of these Cacti last for a considerable time; the flowers of *Echinocereus gonacanthus*, *E. phoeniceus*, and *E. paucispinus* remain open day and night from about ten days to a fortnight; those of *Echinocereus Fendleri* (the best of all) will last more than a week, closing however, at night, and never opening fully except in sunshine, so that they can never be properly seen in an exhibition tent. *Echinocactus Simpsoni* begins to flower early in March, and continues to bloom till the middle of May. What success I have in the culture of these plants has amply repaid me all the trouble and care that I have spent upon them; but much greater success might reasonably be expected by any one who will undertake their cultivation in a warmer and more sunny part of England.

E. G. LODER.

Floore, Weedon, Northamptonshire.

### ALPINE PLANTS AT HOME.

ALLOW me to state that there is a difference between the alpine plants of the primitive and calcareous Alps. Many species prefer the one or the other soil for nutriment; but some not only are never to be found, but cannot be grown except in soil of the one or the other sort. I have tried the experiment by planting forty or fifty plants of the same species in soil containing lime, and the same number in soil containing no lime, side by side. When some of these were found not to thrive, and in a short time to die, while others grew beautifully in soil similar to that of their native place, I came to the conclusion that it was evident that these plants

require their peculiar soil, and will not succeed otherwise. I could only make this experiment with some plants not very difficult to obtain, or which were sent to me by friends for the purpose. I must be allowed to say that plants from the primitive rocks are killed in a short time—five or six weeks—in soil containing lime, which is poison for them; but limestone plants are killed only by hunger. It seems that there are many more plants peculiar to the primitive rocks than plants peculiar to limestone. I have also observed that it is of great importance whether the soil is sandy or clayey. Bog plants, such as *Drosera* and *Andromeda polifolia*, must be grown without lime. The following proved to be

#### LIME HATERS.

<i>Achillea moschata</i>	<i>Lloydia serotina</i>
<i>Alchemilla pentaphylla</i>	<i>Phyteuma humile</i>
<i>Androsace carnea</i>	<i>pauciflorum</i>
<i>glacialis</i>	<i>Primula commutata</i>
<i>obtusifolia</i>	<i>glutinsosa</i>
<i>Pacheri</i>	<i>hirsuta</i>
<i>Anemone vernalis</i>	<i>pubescens</i>
<i>Artemisia mutellina</i>	<i>Sturi</i>
<i>spicata</i>	<i>villosa</i>
<i>Campanula cenisia</i>	<i>Ranunculus crenatus</i>
<i>Dianthus glacialis</i>	<i>glacialis</i>
<i>Draba frigida</i>	<i>Saxifraga hircifolia</i>
<i>Gentiana bavarica</i>	<i>Silene Pumilio</i>
<i>frigida</i>	

The following are from the calcareous formations only:—

<i>Androsace lactea</i>	<i>Potentilla nitida</i>
<i>villosa</i>	<i>Primula carniolica</i>
<i>Anemone baldensis</i>	<i>Clusiana</i>
<i>Campanula cespitosa</i>	<i>venusta</i>
<i>Zoyai</i>	<i>Ranunculus Traunfellneri</i>
<i>Gentiana imbricata</i>	<i>Saxifraga Burseriana</i>
<i>Frœlichii</i>	<i>caesia</i>
<i>pumila</i>	<i>crustata</i>
<i>Geranium argenteum</i>	<i>petraea</i>
<i>Pedicularis Agertia</i>	<i>Viola alpina</i>
<i>Bonarota</i>	

A few species changed their appearance with the change of soil. Some which I raised from seed on alien soil I supposed at first not to have come from seed correctly named. *Rhododendron hirsutum* without lime appeared to be *R. intermedium*, *Hieracium villosum* came like *H. alpinum*, *Papaver Burseri* changed to innumerable colours, *Leontopodium alpinum* changed the colour of the flowers from white to green. It always flowers green unless freshly-powdered limestone sand is frequently scattered over it. The lowest elevation at which I have found it growing naturally is near Krainburgh, not much more than 1000 ft. above the level of the sea. *Gentiana bavarica* is generally found in the sandy, peaty soil at the margins of springs and running streams. I have found plants with sixty or seventy flowers in the neighbourhood of a spring where the soil was never dry.

Villach Botanic Garden.

H. GUSMUS.

### RED SPIDER ON VIOLETS.

"H. G." enquires about cause and cure of red spider on Violets. His plants were probably grown in a sunny place, and were no doubt allowed to go too dry in the summer. There is no cure for them now, and they will only flower late and feebly, but next year he may start afresh and have plenty of good Violets the following season. As our method of cultivation is quite successful, I may confidently recommend it. The Violets are divided every year in April; strong single crowns are chosen or strong runners; they are planted in well-enriched ground 18 in. apart in the rows, and the rows 1 ft. apart. The shady side of a row of dwarf or pyramidal fruit trees is a good position for them, or any place where they will be sheltered from the summer sun. We have no such convenient



place, and therefore have them on the south-west side of a kitchen-garden walk, and grow a row of Scarlet Runner Beans on their sunny side. Still, we keep watch for the enemy, and on the first appearance of a crumpled or yellow-specked leaf give a good dusting of sulphur. The Violets are never allowed to form runners; any that appear are cut off every week that all the vigour may go into the plants, and such grand foliage is developed that friends going past the Czar Violets have more than once delighted me by saying, "What a fine batch of young Holly-hocks!" We give copious waterings in dry weather, occasionally of liquid manure, and early in September a good mulching of leaf-mould. We begin picking the flowers about the second week in October; the plants bloom throughout the winter in any but severe weather till the middle of March, when after a final rush of flowers they suddenly cease. The runners from your correspondent's plants could be used to replant in spring without fear of their being necessarily infested, but they would not make such fine plants as good crowns from clean stock. I shall have plenty to spare in April, and should be happy to give him a good supply if he wishes, in which case, perhaps, you would kindly hand him my address or forward his application.

G. J.

Munstead, Godalming, Surrey.

## BERRY-BEARING SHRUBS.

As regards berry-bearing shrubs (p. 539), allow me to direct attention to *Cratægus* (*Mespilus*) *pyracantha*, which is now very attractive in the gardens here. It is one of the few evergreen shrubs that are able to stand our severe climate. Its rich scarlet berries produced in clusters remain on it during the whole of the winter. The Virginian Cedar (*Juniperus virginiana*) is covered nearly every winter with its light blue seeds. The large white berries of *Symphoricarpos racemosus* are still attractive. *Hippophaë rhamnoides* (the Sea Buckthorn) is densely covered with bright orange-coloured berries, whilst the Mountain Ash (*Pyrus Aucuparia*), *Ligustrum vulgare*, Briers, Thorns, Barberries, *Euonymus europæus*, *Rhamnus catharticus*, and *Viburnum Opulus*, laden with berries, abound in the woods hereabouts. I may add that passing some churches in Vienna on Sunday, the 4th Dec. (St. Barbara Day), I noticed that many small branches of Cherries were bought by the people, put in a bottle of water, and placed in a room; they are expected to open their flowers on Christmas Eve; if they do so, they are said to bring happiness to the owner.

Laxenburg, Vienna. LOUIS KROPATSCH.

**Yellow-berried Holly.**—In a recent number of THE GARDEN a correspondent called attention to the scarcity of yellow-berried Holly in England, and its remarkable growth in Ireland. In the west of England I seldom met with it, but yesterday I paid a visit to Towers Lodge, Brampfordspeke, the residence of Mrs. Bellew, and there saw a remarkably fine specimen of a green Holly tree full of yellow berries. The tree is quite 20 ft. high, and spreads its branches nearly to the ground, giving a very pretty effect to the other trees and shrubs. I wonder it is not more grown in England, particularly as a shrub. I prized a branch given me, which forms quite an acquisition to my Christmas decorations.—H. L. B., Wrentham.

**Rare plants.**—There are some plants which neither "love nor money" seem able to procure for one's garden. Of such is *Mutisia decurrens*, for which I have repeatedly applied in vain to the few nurserymen who print the name in their catalogues from year to year. Will any lover of plants

kindly say where this (or any other) *Mutisia* may be obtained by purchase or otherwise? Another plant rare to meet with is *Astragalus Tragacantha* (sometimes known, I believe, as *A. gummifera*). This I have long been looking out for, and so far in vain. Where may seeds of *Narthex asafetida* be procured, or those of *Ferula persica*? *Scirpus natalensis* and *Myoporum album* are other desired plants; so also the lovely blue *Jacquemontia azurea*, *Leucojum vernum* fl.-pl., *Delphinium grandiflorum* fl.-pl. (or old Siberian Larkspur), and the old Bugle *Pæony*, a variety of robust growth bearing large, crimson-purple, single flowers like big Poppies, these being followed by fruits which were very ornamental late in autumn, when they ripened and burst open, displaying blue-black seed the size of Peas along with abortive seeds of a bright coral red colour. I remember they formed quite a nice contrast with the fruit pods of the Gladwyn Iris, which—colour of seeds apart—they somewhat resembled.—ANONYMA.

## CAUTION TO NURSERYMEN.

I HAVE no desire to obtrude my own private business affairs upon the attention of your readers, but when a man has had the ill fortune to fall into a bog, into which other hapless people might tumble unawares, it is his duty to sound a warning, or put up a notice, for the benefit of the unwary. On the 27th of October last a case was heard in the County Court at Guildford, in which I was plaintiff. The action was brought to recover the balance of my account against the defendant (Dr. La Fargue) for altering and laying out his pleasure grounds and gardens at Farncombe, near Godalming, and also for planting a lot of shrubs and trees in connection therewith. Some of the trees were supplied, at the special request of the defendant, by Mr. Young, of Milford; the remainder thereof and the shrubs were from my own nursery. The planting took place in the autumn of 1879, and the whole of the work was finished to the entire satisfaction of the defendant. But, owing to insufficient watering afterwards, and the exceptionally cold and dry spring of 1880, a large portion of the trees died, and a portion of the shrubs also. As regards the trees, another reason for their dying was that they were selected by the defendant too large (the average height being 18 ft.), but he persisted in having them against my urgent remonstrance.

The only point in dispute at the trial was as to whether I was legally liable to replace the trees and shrubs that had died. It was not proved, nor even contended, by the defendant that there was any express agreement on my part to replace any trees which might die; and I called two nurserymen, resident in Guildford, to prove that, in the absence of such an agreement, *there was no custom of the trade which required me to do so.*

For the defence, Mr. Young did not venture to state positively that any such custom existed, though he believed it did; but, on cross-examination, he admitted that he expressly stated, in his printed circulars, that it was his practice to replace, the inference obviously being that, if it was the custom of the trade, an express statement thereof in his trade circular was a superfluity! Upon the sole evidence of Mr. Young and his trade circular the judge decided that the custom of the trade was against me; and, accordingly, he gave judgment for the defendant, with costs.

Now, I could have brought a dozen nurserymen, if necessary, to prove that, in the absence of any express agreement, no such custom exists in this part of Surrey, whatever might be the case elsewhere; and in this particular case my charges for the trees and shrubs were on too low a scale to admit of my incurring any such a liability as the alleged custom implies. Feeling dissatisfied with the judgment, I instructed my solicitor to apply, at the next court, for a new trial. The application was made on two other grounds (one of which being that I was not allowed by the defendant to view the spot to ascertain how many of the trees, &c., had actually died), but the judge refused the application, stating that his judgment was based

on the evidence of Mr. Young, and that as "regards evidence we must look at weight as well as number." I quite agree with the principle of evidence affirmed by the judge, but I think in my case he put the weight into the wrong scale.

I hope that my experience in a court of law may serve as a caution to some of my brethren in the trade.

WILLIAM KAILE.

Mead Row Nursery, Godalming.

## EDITOR'S TABLE.

**CALANTHES FROM DEVON.**—A remarkable growth of the beautiful winter-flowering Orchid *Calanthe Veitchi* comes from the Earl of Fortescue's garden at Castle Hill, Devon. It measures 4 ft. in height, cut from a bulb 13 in. long. It represents, too, one of the finest forms of this *Calanthe*, the colour being—particularly in the recently expanded blooms—of a lovely deep rose. With it comes the original type of *C. vestita*, with white flowers, one of the parents of *C. Veitchi*, the other being the now rare *Limatodes rosea*. A singular point about this fine hybrid Orchid is that it is more beautiful than either of its parents, far more robust, more easily cultivated, and freer as regards bloom. It is, therefore, a great gain, and Mr. Dominy, who originated it, deserves our thanks. There has been other work going on in connection with hybridising *Calanthes*, an example of which is the charming *C. bella* shown in public for the first time last week, but we doubt if any will become so popular as *C. Veitchi*.

**DYING POINSETTIAS.**—The large specimens from Shirburn Castle are superb in decay! The head that measured 21 ins. in diameter as it faded fell down into folds like a gorgeous flag on a still day, and might indeed have formed the banner of the horticultural fraternity. This plant well grown is so very important for the many who care for winter flowers that those correspondents who have sent such good specimens will help many by telling the best and simplest way to secure the noble crests we have spoken of during the past few weeks.

**GARRYA ELLIPTICA.**—What a beautiful shrub out of the poison smoke of London! It comes in perfect condition from Linton, which is not a peculiarly favoured place. It shows the large extent of country over which this evergreen may be enjoyed. Veiling itself with a delicate lace of long green catkins over the firm evergreen foliage, it is our loveliest winter evergreen, and at the same time it reminds us of the great claims of our own catkin-bearing shrubs and trees, the beauty of which many miss owing to their earliness or to their flowers appearing on leafless branches, or to their quiet, but not therefore less interesting colour.

**THE HARDY EVERGREEN ARALIA.**—The beauty of this plant for the foliage alone is remarkable. Mr. Groom sends us a good specimen of it in flower; the white flowers contrasting with the rich large dark green foliage. It is a very precious plant or bush, carefully placed as it deserves to be, and in many places as happy out-of-doors in winter as in a vase in a room at the same season. When we get such handsome plants as Siebold's *Aralia*—plants "good all round," so to say, we should not be content merely to possess a specimen or two not caring where they are particularly. We should consider how they may be placed so that they may grow well and their beauty be well seen—two aims which may usually go hand-in-hand so far as out-door things are concerned. Someone has



reminded us that this *Aralia* is properly and according to recent botanical lights a *Fatsia*, but it would be a mistake to change a name which many use, and which will probably be found to be a true *Aralia* by-and-by.

**LARGE WHITE BINDWEED IN DECEMBER.**—It is odd to see this coming in a fresh state so near Christmas with its bold flowers and large leaves. It is sent by Mrs. Woodley, of Halshanger, Ashburton, Devon. She says it is "still blooming over the front of the house. Aspect, south-east by south, 1100 ft. above the sea level. It has been hanging in festoons of bloom, and encroaches everywhere." It is *Calystegia sylvatica*, one of the really fine hardy herbaceous climbing plants. Neglected in most good gardens, it may in some small or cottage garden be seen garlanding a Laurel clump, a house, or a railing with large white cups and wreaths of good leaves. No plant is better worthy of being carefully placed so that its beauty might be seen and its roots kept where we want them.

**SINGLE YELLOW WALLFLOWERS.**—Why should the yellow Wallflower seem so well suited to flower in the winter? That from Linton is very sturdy, and belongs, we presume, to what is called the Belvoir race. In passing Pevensey Castle last spring and seeing its many Wallflowers, we wondered if among single kinds any real advance had been made on the old plant. Evidently there is a little as regards colour, but the old flower of the ruin will for ever be among our best flowers of the spring. In the many places where the Wallflower is cut off by frost on the level ground would it not be well to establish colonies of it on walls, stone heaps, or dry banks where it would not be likely to perish? It will root in a newly-made wall if no more picturesque spot can be found for it.

**MYRTLES.**—We are, alas! a little bit too cold to allow of the full enjoyment out-of-doors of this fragrant bush, but a few sprays from Linton remind us of those classic lands where it is everywhere at home in the copses and under the small Pines by the shore. Where Myrtles will not grow out-of-doors they are generally ignored now-a-days; so many new and popular things get a place while these old friends are left to the old woman who has her garden in her window. Even window-gardeners have given Myrtles up for something more showy. The great tubs which we used to see were not manageable to all, but well-grown plants in pots still deserve a place. Their culture is easy, and the glossy foliage and pearl-like buds and beautiful.

**CORONILLA GLAUCA.**—A pretty shrub, often grown in the greenhouse, but quite hardy in many seashore gardens and in others, judging by some flowering shoots from Linton. However, the recent winters have done much to settle many an experiment with this neat free-flowering plant, which was killed in many districts. Walking by the sea in Sussex a few years ago, I was much struck by seeing bushes of this, about 2 ft. high, full of flower. Sheltered, warm banks would seem to suit it best, but it will probably always be what botanists call a "local" plant.

**A FADING VANDA.**—Sir Trevor Lawrence's beautiful and large form of the blue *Vanda* has in fading turned white and transparent. An Orchid grower of large experience who saw it said, "Why these flowers are as large as those of the white *Phalænopsis*." *Vanda cœrulea* endures a long time in the cut state, and is

scarcely less beautiful when the flowers become paper-white and transparent, the network of the veins showing itself clearly by contrast with the transparent portions.

**WINTER HELIOTROPE.**—An immense bunch of this fragrant weed from Linton, where it is allowed to carpet one clump of shrubs, and make it an islet of fragrance in winter. It is no trouble to any gardener, except gathering the flowers and preventing it from straying into other departments where it might become a nuisance. A hedgerow or warm bank in any rough place beyond the limits of the pleasure ground or garden would suit it best.

**FLOWERS FROM A COOL HOUSE.**—From Mr. Garnett, Olney, near Dublin, some *Roses* very good in colour and *Bouvardias*, with a note, saying that these "flowers are grown in a perfectly cool house, no heat whatever being used. They comprise *Cyclamen persicum giganteum*, and the lovely purple-rose kind *Duke of Connaught*. These bear their blossoms high and vigorously above the foliage, and are most floriferous. *Bouvardia Hogarthi*, which seems to be as impervious to the cold as a Snowdrop. I find *Bouvardias* quite first-rate in an unheated house, facing due south, and kept dry, and free from any draught. The *Roses* are *Maréchal Niel*, *Niphetos*, and that grand Tea Rose *Perle de Lyon*. The foliage of the *Maréchal* I think you will admit is fine."

**BIGNONIA VENUSTA.**—From Pendell Court come beautiful specimens of this handsome climbing plant. The flowers are of a peculiarly bright orange-salmon colour, and they cover a large space with hundreds of hanging shoots that toss the gay flowers off as gracefully as a Honeysuckle. In some of the trusses sent to us there are over fifty flowers and buds in different stages! It matters little whether a plant is old or new; it matters much if it be good! This is one of the grand things, as precious for the large stove or intermediate house as the Scotch Fir is for the grove.

**FUCHSIA VELUTINA.**—A very elegant *Fuchsia* from Sir George Macleay's garden. It is a distinct species with flowers 2 in. long, but remarkable for the velvety look of the leaves, which are a soft dark olive-green, large, and good in form. The foliage is very beautiful, and the plant will probably be liked by the connoisseur.

**A ROSE IN WINTER.**—A good *Rose*, *La France*, from Miss Cairns, which was gathered in the open air at Eggerslack, Grange-over-Sands, on Monday, Dec. 12; also a *Veronica*, gathered Dec. 17. A flowering shoot of one of those ever faithful New Zealand evergreen *Speedwells*, which do not require a specially mild winter to bloom in many a garden near the sea.

**CHRISTMAS ROSES FROM HOWTH.**—Plant happy in its name and right well deserving it. With Covent Garden reeking with soiled evergreens and Mistletoe, it is pleasant to be reminded by a small box from St. Bridgid that it is not only evergreens our climate bears at this season, but brave big flowers, fair, too, as those of summer. They are nearly 4 in. wide and spotless as *Amazon Lilies* nursed under glass. St. Bridgid writes: "Alas! the storms of December, lashing in their fury the hillsides, have robbed St. Bridgid of every bright blossom, and she has nothing to lay on the editor's floral shrine as an offering from the departing year but this bunch of Christmas *Roses*, sorely tried by the searching winds and beating rains, without protection save that of

their own handsome leaves. Not even the firm and glossy leaves of the *Arbutus* could withstand such cruel blasts as have swept the hill of late. Shrivelled up and brown at the storm side, the evergreens seem as if swept by a scorching flame, and the cheerful Ivy has lost its happy green, and mourns its fate in blackness. Gracious as are the climate and soil of Howth, its storms are relentless and desolating." These are the positions where the herb that dieth not is precious!

## GARDEN IN THE HOUSE.

### TABLE DECORATION FOR CHRISTMAS.

HAVING long been an advocate for simplicity and lightness in table decoration, I would venture to offer a few remarks on the subject. There seems a natural tendency to run to excess in this matter. Many think that the more rare or beautiful plants, flowers, or leaves there can be piled on a table, the better the decoration. There can hardly be a greater mistake. As an illustration, I saw a decoration in progress a few weeks since. Three light March glasses occupied the centre of the table; they were tastefully and sparingly filled with a light hand, and fringed with light Fern fronds, reclining on the damask cloth. Spraying out from these towards the finger glasses, which were filled with choice flowers, were light, delicate sprigs of Ivy, so thin as to end in mere points of verdure. These were sparsely used, and the effect was charming—a perfect blending of lightness and simplicity. Strolling in an hour or two later, the decorators were still at work finishing, i.e., utterly spoiling their work. At the points where the graceful twiglets of Ivy vanished towards the finger-glasses a stiff continuous double line of *Coleus* leaves had been laid on the cloth; and all among the Ivy, *Chrysanthemum* blooms in threes and in single flowers had been worked in as rosettes; similar rosettes were then stuck on at the corners. This tendency to overcrowding is generally rampant at flower shows. Again and again have I seen the most chaste decorations absolutely spoilt because decorators did not know when to stop. Sprays of the most exquisite grace, finishing touches, choice combinations that would have been the envy of artists have been overlaid until completely hidden out of sight.

Not only is too much material used, but the material is too much mixed. Nothing tends to produce monotony so effectually as the employment of all kinds of plants and flowers at once. It is hardly too much to say that each decoration should consist of one or a few homogeneous plants only. Not that only one flower may be used, though that often produces the most satisfactory results, but the flowers, foliage, and plants employed in any given decoration should develop into harmony through their congruity. Many flowers, however, are strong enough to stand alone, such, for example, as *Roses*, *Camellias*, *Heaths*, *Lilacs*, *Valley Lilies*, *Lilies*, *Snowdrops*, *Primroses*, *Forget-me-nots*, *Spiræas*, *Deutzias*, *Cyclamens*, *Anemones*, *Lapagerias*, *Tacsonias*, *Stephanotis*, *Passion Flowers*, *Gardenias*, *Odontoglossums*, *Dendrobiums*, and hosts of other plants and Orchids. With abundance of their own foliage and a few Ferns or Palms for extra greenery the most exquisite table decorations may be formed. The pure white flowers may need a little support from others, such as *Squills* with *Snowdrops*, *Forget-me-nots* with *Spiræas* or *Deutzias*, purple or scarlet *Bouvardias* with *Stephanotis*, &c. But with abundance of verdure it is astonishing how effective even white flowers may appear on a dinner table, especially as they may readily be fringed with bright *Coleus*, *Iresine*, *Alternanthera*, or other leaves. In harmony with their leaves what better table decoration for Christmas than thickly-berried sprays of *Holly* and *Mistletoe*, supported with bunchlets of leaves and sprays of Ivy of different colours. For rosettes on the table Christmas *Roses* and *Camellias* might alternate. The vases might be either filled with leaves and berries, to harmonise with the other decorations, or with bright flowers of promise of



the coming beauties of the spring, such as Valley Lilies, Spiræas, Lilacs, Roses, Cyclamens, or Primroses, not all mixed, but any one of them; or more choice still, Calanthes, Phalenopsis, Odontoglossums, or other elegant Orchids. Or, still more in harmony with the season, small plants of variegated Holly, golden Yews, Retinosporas, Laurustinus, Cupressus, or other variegated or green foliaged or flowering plants could be used instead of vases or rosettes of flowers. Such hardy plants are far more effective for Christmas decorations than the more tender Ferns, Palms, Marantas, Crotons, Dracænas, Ardisias, &c., so generally used for such purposes. And besides the hardy plants in pots are within reach of all; young Spruces and silver Firs are about as beautiful and effective in a young state as the most rare and costly trees or exotic plants. It is the taste in the arrangement, not the cost nor the mass of material employed, that tells in Christmas and other decorations; and it may be added that the higher and purer the taste, the more sparing of material, and *vice versa*. A few touches of the pencil sufficeth the painter with genius, but the mere dabbler's brush is ever in motion between the palette and the canvas. It is very much so with table decoration. A few bold touches please, while a multiplicity of intricate details land us in confusion and disappointment. And what is true of dinner tables and rooms is even more so of churches. The amount of "love's labour" absolutely lost on these at this festive season is appalling. Destined to be viewed chiefly from a distance, the greater part of the labour involved is seen imperfectly or not at all. Simple designs executed in durable material are by far the most suitable. Holly, Ivy, Mistletoe, Yew, Box, should form the staple, the warp of them all; while more perishable or scarce materials, such as flowers and berries, may be used more sparingly as the woof to show up prominently in inscriptions or designs. For the furnishing of fonts, &c., there is no more useful plant than the Ethiopian Lily in flower, used with abundance of its fine leaves. It also has the merit of bearing the cold and draught of churches better than almost any other plant. Pyramidal or spiral plants in pots, as Yews, Hollies, Cupressus, Retinosporas, Laurustinus, Euonymus, Box, Bays, Myrtles, Acacias, Gum trees, &c., are also invaluable, as well as the more hardy Palms, Yuccas, Aloes, Ferns, &c. In warmer churches Azaleas, Camellias, forced Rhododendrons, Lilacs, and any other greenhouse or stove plants may be used. Few plants are more effective than good specimens of Heath and Epacris; while Chinese Primroses, Bouvardias, Cyclamens, and forced Hyacinths, Tulips, Narcissus, Crocuses, furnish any amount of colour that may be needed. But to mix all these in one church arrangement would to invite failure. Chrysanthemums are not named, as though several of the later Japanese and other varieties may still be in flower at Christmas, they seem to suggest a dead past rather than a joyous present or a hopeful future. This may be a mere fancy, and it must be admitted that Chrysanthemums last long and are showy in Christmas or other decorations. But a decoration of leaves and berries only is far preferable to one in which flowers already partially faded form any part. With such a prodigal profusion of Holly berries as we have this year, there can be little difficulty in making decorations bright and cheerful.

D. T. FISH.

**Ipecacuanha culture.**—A friend of mine wants me to ascertain for him if the Ipecacuanha plant would be likely to thrive at Singapore, Straits Settlement; it is about the same latitude as Brazil, from whence the root is imported and fetches wholesale now about 6s. per lb. in London. Where would be the best place to get some plants to start with? and in what sort of soil and situation should they be planted?—W. P.

[If your friend is in Singapore, and applies to Mr. Cantly, who is the superintendent of the Botanical Gardens there, he will obtain practical information. Brazil offers many widely different climates, as altitudes vary there extensively; in Singapore (the highest hill is only 400 ft.) a mean

temperature of about 82° may be reckoned upon all the year round. Doubtless the authorities at Kew would give you information. On no account would we advise the planting of Ipecacuanha as an experimental crop, unless on the authority of practical planters in India, where the root is, we believe, rather extensively grown. It is very easy to lose money in cultivating economic plants even at home—abroad the matter is often even more risky.—F. W. B.]

### NOTES OF THE WEEK.

**ROGIERA GRATISSIMA.**—This is a plant which has been most undeservedly underrated, a circumstance doubtless attributable to the fact that few have really understood its culture. We have not unfrequently met with it coddled up in a stove, but it delights under conditions quite contrary to these—in the genial cool air of a conservatory, for instance. A case in point is the fine plant of it which covers the end of a large Camellia house in Messrs. Backhouse & Sons' nurseries, York. This plant is now a magnificent sight, being studded with a profusion of flower-heads, some as large as a man's fist. The pleasing rosy pink hue of the blossoms and their delicious aromatic perfume render the plant most attractive. It is, moreover, a highly valuable shrub for the flower basket, as a daily cutting from such a large plant is scarcely noticeable. To thrive as well as the York Nursery specimen it must be planted out in free soil of good depth of moderate richness, and the bed or box in which it grows must be provided with good drainage, and until such conditions are carried out cultivators cannot expect to realise the real beauty of this plant. It is an object that requires bringing to the fore, for mid-winter plants of such sterling merit are by no means plentiful.

**CARMICHAEL'S HYBRID AZALEAS.**—The value of these beautiful new shrubs, raised by Mr. Carmichael, and recently distributed by Mr. B. S. Williams, is beginning to be appreciated, particularly for early forcing. Being descendants of the well-known *A. amœna*, they naturally are quite as amenable for forcing, and on account of their beautiful and varied tints are a decided gain, particularly in gardens where a large number of such plants is required in winter. The other day we saw a few of these hybrid varieties in Baroness Rothschild's garden at Gunnersbury Park, having been forced into flower in company with the old *amœna*. Already Mr. Roberts speaks well of them, and thinks that they will become valuable for mid-winter flowers. Among the varieties here we singled out three as being distinct and beautiful. These are Mrs. Gerard Leigh, with flowers of a bright crimson-magenta, larger than those of *amœna*, and borne plentifully; Princess Maude, a profuse flowerer, rich magenta colour, shaded with rose, flower larger than preceding; Princess Beatrice, light mauve-purple colour, finely shaped flowers, produced copiously. These are striking varieties, and well bear out all that has been said of them.

**POINSETTIAS FOR MARKET.**—In the matter of cultivating certain classes of popular plants, gardeners may often learn a valuable lesson from those who grow wholly for market, for which purpose they must be grown well and quickly, and often with appliances inferior to those at command in private gardens. A striking illustration of this is afforded in the case of Poinsettias, which are grown in every garden more or less largely. Nowhere could they be seen in such perfection as in such market nurseries as that of Mr. Reeves, of Acton, who makes quite a speciality of them, devoting some four or five spacious span-roofed houses exclusively to them. For some time past the gorgeousness of the

interior of these houses may be better imagined than described, the intensely brilliant scarlet of the floral bracts being quite dazzling. The plants range from 9 in. to 18 in. in height, and are arranged in uniform banks in sizes, so that looking down the houses from one end to the other they form unbroken masses. It is surprising how such a vast number can be disposed of in so short a time, but it is a fact that few are left by the time the new year sets in. The mode of cultivation here is to strike from cuttings, and afterwards shift into 4½-in. and 6-in. pots, none exceeding the latter size. The enormously broad heads of bracts, and the healthy foliage with which the plants are clothed down to the pots, are sufficient indications that their requirements are well understood. The houses are light and not over large, therefore are well adapted for plant growing, and especially for Poinsettias.

**A GRACEFUL PALM IN FLOWER.**—It is not a common occurrence to see flowers on Palms growing in 6-in. pots, but such is the case with a pair of *Chamædorea glaucifolia*, one of the most elegant of all Palms which Mr. Hudson, gardener at Gunnersbury House, has growing in the conservatory there. The flowers, as in most other Palms, are not very attractive, being small globular objects borne on branched twiggly clusters from the bare stem of the plant. The circumstance, however, points to the fact that it is possible for plants to thrive under extreme restriction of pot room, whereby they are rendered doubly valuable for decorative purposes, as they can be readily moved and be employed for a variety of purposes which plants in weighty pots or tubs cannot be. The plants in question are about 10 ft. or 12 ft. high, the fine spreading head of elegant foliage standing clear above a naked stem. Not only with this Palm, but with others Mr. Hudson practises the same system of keeping the plants in small pots, and he finds them most valuable for room and hall embellishment.

**WINTER-FLOWERING PLANTS.**—I send a few spikes of the Winter Heliotrope (*Tussilago fragrans*), which is now in fine condition amongst the Laurels in a clump, where it is thoroughly at home, and isolated from other plants, for if planted amongst tender or slow growing subjects, it soon smothers them. Along with it I send sprays of *Garrya elliptica*, one of the best of winter-flowering wall plants. *Chimonanthus fragrans* is likewise flowering profusely. It must be allowed to grow in its own way, for if cut into a uniform flat surface, it loses half its beauty. Primroses are anticipating spring time already. Although, however, we usually get mild weather compared with northern districts, yet from all accounts these beat us this year. Green Peas and green Gooseberries in December are things at present unobtainable about Maidstone, yet these are reported to be plentiful in the north.—JAMES GROOM.

**CATALOGUE OF TREES GROWN AT BITTON FIFTY YEARS AGO.**—We thought it might interest our readers if we published the list of trees grown by our correspondent, the Rev. Mr. Ellacombe, now of Clyst St. George, Devon, in his garden at Bitton half a century ago. Some of our readers may remember that on a former occasion we published a catalogue of his collection of hardy plants, naturally more voluminous. To have collected and enjoyed such a large collection of trees at Bitton previous to 1831, and still be enjoying his garden in Devon, speaks of garden pleasures such as fall to the lot of few men. Occasionally we have the pleasure of getting some blossoms from his Devon garden. We trust such long-lived happiness may prove hereditary in the family.



**NEW BORNEAN RHODODENDRON.**—A beautiful species of *Rhododendron*, probably new, is now flowering for the first time in Mr. Bull's nursery, Chelsea. It is one of the *R. javanicum* type, having dense terminal trusses of flowers which are large and of a beautiful rich yellow suffused with a reddish tinge. In the same nursery there are also several other fine new *Rhododendrons*, hybrids of the *jasminiflorum* type, but as they are as yet under numbers only we cannot describe them; one in particular is very charming, the blossoms being large and of a rich pink, distinct from those of others which we have seen.

**BILLBERGIIAS FROM GLASNEVIN.**—Two very handsome species, *B. Baraquiniana* and *farinosa*, the first having the little tuft of long pea-green flowers enveloped in an unusually large tuft of salmon-pink bracts hanging in a weighty tuft on a slender stem. The other (*B. farinosa*) is an elegant species, though not half so large as the preceding, the bracts being more scattered, but of a rich carmine tint; the flowers are long, pea-green, purple tipped, a singular combination of colour. With better and different treatment to what they usually receive, and a good selection of winter-flowering kinds, they might become important for our warm houses.

**JAPANESE CHRYSANTHEMUMS.**—*Chrysanthemums* still lovely, although open five weeks ago. Japanese varieties are now at their best, and will go on into the new year. We began with early blooming kinds in July (20), and have never been without *Chrysanthemum* flowers since that date.—**ANON.** [This lateness of blooming is another reason why these precious Japanese *Chrysanthemums* should not be degraded from their unique charms by being crossed (and "improved," forsooth!) by the ordinary roundish forms. We want both classes as distinct as may be.—**ED.**]

**LARGE POINSETTIAS.**—The following are the dimensions of some *Poinsettias* in bloom here: One plant grown in a 6-in. pot bears bracts measuring fully 17 in. across, with beautiful green leaves 8½ in. without stem. I have other plants whose crests of inflorescence measure 15½ in. and 16½ in., and also a quantity of plants in 4½-in. pots only 10 in. and 12 in. high, with bracts as much across, and beautiful healthy foliage down to the pot.—**N. FULLEGAR, Eastbury Manor, near Guildford.**

**SPARAXIS PULCHERRIMA** is absolutely lovely in the plate in *THE GARDEN*. Mr. Smith, of Newry, says deep planting in pure sand is the secret of its culture. It is then out of reach of frost, never gets dried up, and grows stronger every year. I am trying his advice.—**ANON.** [Good plants are always lovelier than plates of them! So is this *Sparaxis*, which, when well grown, is a new revelation in the union of graceful form and good colour.—**ED.**]

**POINSETTIAS.**—We have here several dozens of beautiful dwarf plants with healthy foliage, and most of their bracts measure 22 in. in diameter. We have also two or three plants of a dwarf drooping habit, producing four beautiful bracts, the stem being only 6 in. in height. These, with a quantity of *Calanthe vestita* rubro-oculata and *Euphorbia jacquiniæflora*, produce a grand effect.—**F. W. E., Penrhos Gardens, Holyhead.**

**CHINESE PRIMROSES AT BIRMINGHAM.**—A very bold and large strain of these comes to us from Mr. Caldicott, of Harborne Road, Edgbaston, Birmingham, raised from seed obtained from Mr. Tomkins in the same town. We have heard a very good account from Mr. Ware of the fine strains of these plants grown by Mr. Tomkins.

**ACANTHUS LEAVES.**—The tendency which some kinds of *Acanthus* possess of growing far into the winter is shown by some *Acanthus* leaves from Linton, but not of the kind which usually has the most permanent foliage, viz., *A. latifolius*. When those beds we have talked of for evergreen hardy plants are made, this *Acanthus* should find a place in them. *A. spinosus* is the kind that comes from Linton.

**BOUVARDIA ALFRED NEUNER.**—This double white novelty from Messrs. Laing & Co., of Forest Hill, with blooms large, double, and firm, but few, and in consequence not in a condition to enable one to judge of its value fairly. Everything will depend upon the profusion and vigour of its bloom. We must wait to fairly estimate its worth.

**GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—The annual general meeting of this charity will be held at the Bedford Hotel, Covent Garden, on Thursday next, January 12, when eight pensioners, having been subscribers for fifteen years, will be placed on the funds without the trouble of an election; this will exclude all other applicants.

**NATIONAL DAHLIA SHOW.**—It is proposed to hold a large exhibition of all classes of Dahlias next year at the Crystal Palace, Mr. G. Smith, New Villa, Hedge Lane, Edmonton, being the hon. secretary and treasurer. The committee hope to meet with support to carry out this project.

#### NOTES AND READINGS.

WHEN a body or an association exists for some professed public purpose or good, it is customary to look for some record of its doings, and we think the occasion is opportune for asking the committee of "knowledge" at South Kensington to furnish the horticultural public with some account of the transactions, experiments, and investigations it was expressly founded to carry out. The committee has now been in existence for tens of years, and ought to have a very good report to show. It was to accomplish great things and tell us more, but has all along been a modest and unobtrusive body indeed! The *Gardeners' Chronicle* at the outset published, in the shape of a leading article, a kind of general prospectus of the committee's intentions and purposes, and promised "with due limitations" to open its columns to the "proceedings" of the society, and we are sure these limits have never been overstepped—in fact they might have been extended, and would have been, no doubt, had it not been for the exceedingly modest limits of the "proceedings" themselves. It is interesting now to recapitulate the intentions of the committee. The establishment of a "scientific committee" was a very "important" step, and its advent was compared to the "birth of a royal stranger;" and "no better omen for the future working of the committee could be had than the presence not only of professed horticulturists and botanists, but also of a strong muster of chemists." It was what would be called "strong" in the "scientific" element.

The programme of work sketched out was rather formidable. It was to settle "such important questions as the action of light on vegetation, investigate the chemical properties of soils, of the atmosphere, and of manures," &c., and "these and many others which might be mentioned" were matters "which could not be undertaken" without the aid of experts. "All the great results of modern civilisation had been brought about by the division and combination of labour;" and the great deeds of the scientific committee were to be accomplished on

the same principle, and "the full elucidation of many a chemical problem," &c., was to be the result. "What better channel," it was asked, could be provided "for recording ascertained facts? what better source of information than a committee so constituted?" It only wanted "a good whip" to make the team run together well, and that whip was provided in the then excellent secretary. The committee was chiefly to concern itself with the investigation of subjects "of direct and immediate importance to practical horticulturists," and it began with alacrity with "spot on Orchids," to be followed up by "nomenclature of plants" at an early date, two subjects which it is well known are now in an advanced stage of consideration. In short, there was nothing so great or so difficult that the scientific committee was not to grapple with, from the Cedar of Lebanon to the Hyssop which groweth out from the wall, or in the more pointed, if less poetical, language of the *Gardeners' Chronicle*, from a timber tree to a Rose.

Such was the position and prospects of the committee at the start. How far its hopes and purposes have been fulfilled should be shown by the "record of facts" that was to be so diligently tabulated. A good deal has been accomplished since 1868; horticulture has advanced rapidly, and not a few things have been learned and unlearned, in which an ungrateful horticultural public say the "scientific committee" has had absolutely no share at all, and that for any sensible assistance it has ever rendered practical horticulture it might never have existed, and that there is no excuse for its continuance. We do not go this length, because we think such a body might accomplish something, but it is impossible to disguise the fact that the committee, whether from want of work or through inability or a disinclination to perform it, has certainly not deserved a character for industry, and that it has failed in the most lamentable manner to fulfil its promises.

I have never been troubled with an overpowering veneration for the Horticultural Committee at South Kensington, as readers of *THE GARDEN* will have guessed by this time, although I have friends in it, and I have occasionally hinted that the discussions given there are open to question now and then; but I was not prepared for the *Gardeners' Chronicle* testifying to the correctness of my surmises, and your contemporary must know. It is clear that journal cannot stand the doings of the committee (always excepting the "scientific") any longer, and it has spoken the truth in a way likely to do good, if it does not promote good fellowship at the next meeting. Speaking of the decisions of the committee, it says: "The judgment of the members is sometimes too much fettered by commercial, or what we may call market, considerations, so that a plant is judged too exclusively upon its assumed commercial merits. By keeping one object before their minds too exclusively, and that not the highest, it sometimes happens that some commonplace flower of little intrinsic interest, and whose fellows may be numbered by scores and hundreds, as in the case of a *Coleus* say, or a *Dracæna*, or a *Dahlia*, gets invested with the highest honours, while some less familiar but intrinsically much more important plant is honoured, satirically so, with the same award, or is passed over. The large number present engenders a certain amount of looseness in carrying on the business of the meeting, in consequence of which some members rarely vote at all, or vote more because someone else has done so than from independent conviction. On the other hand, some members vote on almost every occa-



sion, as, indeed, they are legally permitted to do; but it must, and does sometimes, happen that the voter in such a case passes judgment on what he does not understand." Encouraging revelation this. There are some members on the committee the *Chronicle* means, as I apprehend it, who are only influenced by "shop" considerations; some vote because somebody else has voted, and it "does sometimes happen that the voter passes judgment on what he does not understand." This, I believe, to be the truth. The *Chronicle* proposes, as a remedy, to divide the committee into what we should call first, second, and third class sections, according to the abilities and special knowledge of the members, or establish a new committee, properly constituted together. Upon the whole, however, it will be admitted that the Horticultural Committee does perform some work, and does pass judgment upon something, be the verdict right or wrong; and its doings will compare favourably with that other committee, the scientific, "which must sit in immediate proximity to the Lindley Library," and has never passed decided judgment upon anything.

Now is the time to use such useful utensils as the French cloche for protective purposes. Lettuces and such like will this winter suffer more than usual should frost set in in a severe form, and there can be no doubt now about the saving power of the bell-glass. Innovations of this kind popularise themselves slowly. When the cloche was first recommended seriously about a dozen years ago the author of "High-class Kitchen Gardening," I think it was, described it as the old English "kitchen garden bell-glass," and stated his preference for a low house built on the orchard house principle, which is no doubt a very good thing, but procuring an orchard house and investing in a few cloches are two very different matters to many people. There can be no doubt about the utility of the latter as protectors without any other aid, but when set on a slight hotbed—one composed of leaves alone—hardly any frost that we are likely to experience will do harm to the plants under them. The cloche, too, has been found to have other uses besides Lettuce growing and raising. Its use in the large Surrey nurseries is spreading every day, and also in the London market gardens. To get it at a low price and carefully packed is very desirable.

Reverting to the subject of Orchids, not a few cultivators are still halting in doubt whether in the case of many species, and particularly cool Orchids, they should shade or give more air. We have not yet seen nor heard of an *Odontoglossum Alexandræ* flower-spike as thick as one's little finger in this country, but we have seen the remains of some that thickness on some of the fine imported masses sold at Stevens's rooms. Apparently they must have been 1 yd. high at least, and one wondered under what favourable conditions they had been produced. In the highlands of Central America they are said to grow nearly all the year round in the open under the intense light, but tempered heat of an almost vertical sun, and if so, a canvas sheet over-head does not seem, on the face of it, to be an essential point of their culture in this country, where more light is the thing we most need. Has anyone grown the *Odontoglossums* successfully without shade under glass? Nurserymen all shade—some of them heavily. Growers complain that the foliage and bulbs get browned too much by exposure to the direct rays of the sun, but the browning is probably due to previous shading more than to any other cause. The way to test the matter would be never to begin shading, but let the plants grow up in the full light.

No doubt it is difficult to meet the wants of all the species grown under one roof—some needing shade and some none, but there can be very little doubt that the cause of many species not flowering often or well is too much shade. We never heard of the fine old *Renanthera coccinea* flowering well except when fully exposed to the sun, and some good examples of culture produced in that way have been recorded. *Angræcums* are another class that are better exposed, and I think *THE GARDEN* once gave an engraving of *A. sesquipedale* growing in Madagascar in an exposed situation under the full blaze of the sun, with a traveller, apparently admiring the plant, standing beside it with an umbrella over his head to protect him from the heat.

Will the fruit of the Vine stand more frost than the leaves? We remember an excellent judge on such matters giving his opinion in favour of the fruit. No doubt varieties differ. A salesman once stated in one of the horticultural papers that in a consignment of Black Hamburgs and Muscats that had been frozen on their journey the Hamburgs were very little the worse, while the Muscats were quite spoiled. My opinion is that Black Alicantes, Lady Downes, and other Grapes of the same stamp hanging upon the Vines at this season of the year are better subjected to the lowest temperature possible short of freezing, provided the atmosphere is kept dry, but Muscats decay in a temperature much below 50°. There can be very little doubt that much fire heat and a dry atmosphere is one of the most fertile causes of shrivelling. It has been proved already, in regard to Apples and Pears, that, other things being equal, the fruit exposed to the driest atmosphere, the air being deprived of its moisture by chemicals and not by heat, perished soonest, while that preserved in a moist air comparatively kept its weight and flavour longest. An account of experiments on this subject was published some years ago. Grapes, however, must be kept fairly dry, but at the same time cool, and no fear need be felt about dropping the temperature low at this time of the year in late houses where Grapes are hanging subject to these conditions. To prevent moisture from arising by evaporation from wet surfaces is what we should aim at more than at its expulsion by fire-heat after it is produced.

Mr. Temple, I am sorry to see, has misunderstood my allusion to his Grape growing, and to which he takes exception in the *Chronicle*. I did not "find fault" with his system, which after all is not his own, nor did I doubt his success, as recorded by himself, for a moment. I credit him with doing all he states, but what amused me and a good many more who read his communication was his clearly implied meaning that although he had done a clever thing in Grape growing himself, nobody else need try. With regard to his challenge (if he was sure who "Peregrine" is, which he is not), I have only to say that the opportunity he seeks now he might have had many times—when my enthusiasm, like his own, had not cooled—of contesting honours with me, but although I have met Mr. Temple on several occasions, and at the places he names, he was "not in it." There is certainly no obstacle on my side that I know of to the acceptance of his challenge if the question in dispute was his success, exceptional as it is, but it is not that, but his incomprehensible letter on the subject that is under discussion. Besides I cannot undertake to demonstrate the absurdity of the utterances of everybody who may be commented on in these columns in the way indicated, and I am not sure that I would even undertake to

compete against anyone with Grapes grown in a soil that had been certified never to have produced any kind of vegetation before—not even "pasture or anything else for generations." Nobody has offered to do that before but Mr. Temple, and I am too modest to think of succeeding in the attempt.

PEREGRINE.

## THE INDOOR GARDEN.

**Cineraria leaves curling.**—"J. H." (p. 567) has undoubtedly over-watered his *Cineraria*, and putting the plant into a larger pot only made bad worse. In order to save the variety it ought to be cut down at once, then turn it out of the pot, shaking away all the old soil, and divide it into as many offsets as can be obtained. With care the greater portion will sever from the old plant with a little root attached to them; repot into well-drained 3-in. pots, using a light open compost consisting of leaf-soil, loam, and silver sand in equal proportions. It is a good plan to put a pinch of silver sand immediately round the young plants or cuttings; it greatly assists them in forming young roots. When the potting is completed place the plants in a cold frame on a bed of clean sifted ashes. Keep the frame closed and give no water until the plants show signs of young growth; even then water must be given sparingly, as the moisture which rises in the frame will be sufficient until the plants are in active growth. In severe weather the frame must be well protected with mats, so as to keep out frost. In order to grow *Cinerarias* successfully they should have a moist, cool temperature; always avoid using fire heat, except in the case of raising seedlings and keeping out frost.—R. GREENFIELD, *Warwick*.

**Diseased Anthurium leaves.**—I send some leaves of *Anthurium*, marked by some cancer-like disease, from one of five plants in the stove, and the only one thus affected. It is in strong vigorous growth and blooming well. Was potted last spring, and has grown much since then. Can you assign a reason for it?—J. T. P., *Riverston*. [There is no fungus or trace of anything of the sort on the leaf sent. At first sight the spots look as if resulting from insect bites or punctures, but we can see no insects, or any traces of them. The leaf is covered with spots, and in these places the cuticle is corroded, and the cells beneath have perished, apparently the result of scalding from drip, but it may be from the biting or puncturing of some insect not sent with the leaf.—F.]

**Heliotrope White Lady.**—This plant well deserves the high character given it in *THE GARDEN* (p. 598). It will undoubtedly be grown extensively, and become popular. The fragrance of the flowers on the plant shown the other day at South Kensington was delicious.—J. H.

## SHORT NOTES—INDOOR GARDEN.

**Grevillea Preecel.**—This is a plant which is more interesting than showy. The flowers are borne in clusters at the ends of the twiggy shoots, and the light feathery appearance of the plant, combined with its lively green leaves, render it useful for conservatories or small vases. The culture usually given to winter-flowering Heaths suits it remarkably well.—J. S. T.

**Luculias dropping their buds.**—I have a *Luculia gratissima* about 7 ft. high planted out against the wall of a conservatory which is high, as it forms an entrance to drive into. The plant grows rapidly, but the last two years all the flower buds have dropped off before opening. I wish to know the cause.—J. T.

**Orange trees.**—Is there any work on the cultivation of Orange trees? A friend who is trying to cultivate them in Florida thinks there is a work on this subject in Italian, which may possibly be translated into English.—B. E.

**Camellias and Azaleas.**—Will someone kindly say which is the best way to strike *Camellias* and *Azaleas*?—A YOUNG GARDENER.

**Eucharis.**—What is the best treatment for these? Can they be made to bloom twice a year? Would someone kindly say?—YOUNG GARDENER.



## SALVIAS INDOORS IN WINTER.

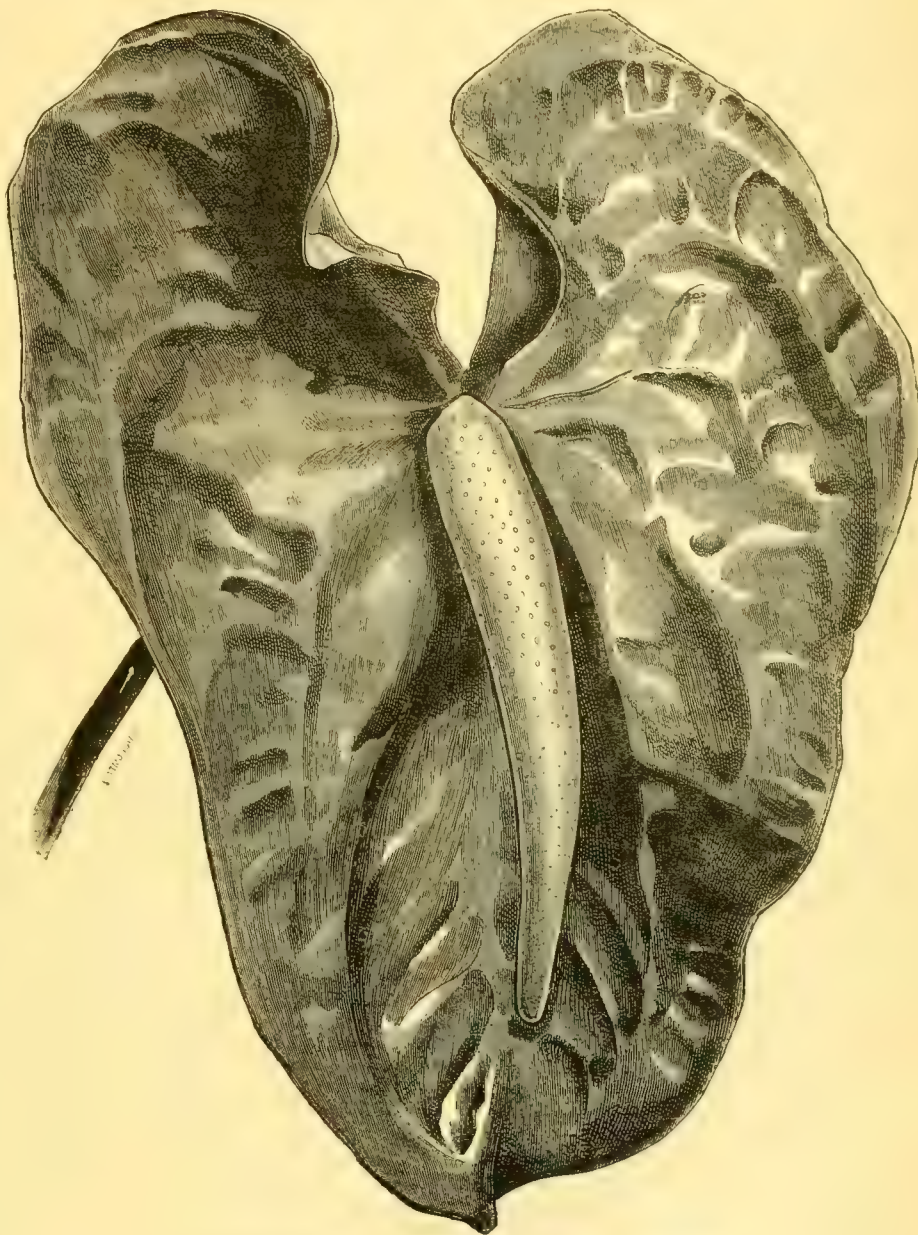
For assisting in the embellishment of greenhouses and conservatories during winter and spring there are few things more showy and useful than *Salvias*, especially such as *S. splendens* and its new variety *S. Bruanti*, and the old *S. Heeri*, which is by far the best and most effective for the spring. *S. splendens Bruanti* is a remarkably fine kind, and a great improvement on the one from which it originated, as it is of a better habit and has larger spikes of flower of a much brighter colour. The plants, too, have better foliage, being more serrated, thicker, and of a more glossy green; I find it also hardier, although to have it in perfection it needs more heat than is generally kept in an ordinary greenhouse. In a temperature ranging between 50° and 55° it sends up its long bold scarlet spikes of bloom in succession nearly the whole winter through. *S. Heeri*, on the other hand, is very impatient of artificial heat, which, if given for any length of time with a view to force it or bring it on before its season, is almost sure to spoil it, as not only do the plants grow up weak and spindly, but the blossoms come weedy and poor.

In order to have large specimens it is necessary to put in cuttings in February or March; but as smaller plants are generally the most serviceable, a batch should be put in later, and another lot some time in July or August. These latter may be grown in 6-in. pots, and will be found to come in most useful for window decoration, a purpose for which they are specially adapted, as they look well in boxes associated with small white *Chrysanthemums*, *Carnations*, or *Eupatoriums*, and produce a chaste and pleasing effect. In a greenhouse, placed between or near large plants of *Chrysanthemum Elaine*, *Empress of India*, and *Mrs. George Rundle*, *Salvia splendens Bruanti* is particularly striking, as it lights up the whole by the brilliancy of its colour. The way in which these *Salvias* should be managed is to pot them off singly when struck, and keep them gently growing on in any frame or pit where they can have a little heat till the end of May, when they should be gradually hardened preparatory to exposure in the open air, where they always do best during summer, as there they grow short-jointed and stocky, and keep cleaner and healthier than under glass. To prevent the sun acting on the pots, it is advisable to have them plunged in some loose, open material, such as straw or leaves, which keep the roots cool. The most suitable soil to grow *Salvias* in is good fibry loam, and as they are gross feeders, they are benefited by frequent applications of liquid manure, especially after they have filled their pots with roots, and are approaching the time when they begin to show bloom—a period when they cannot well have too much, if the liquid manure is not strong and rank. By the middle or end of October it will be time to put the plants in a house or pit to protect them, for if left out in the cold after that they begin to lose their lower leaves, or get them discoloured, which detracts from the beauty of the plants when they get into bloom. Some grow their *Salvias* in the open ground instead of in pots, and it is a good plan in cases where large specimens are required, as, by having more root room, they attain a larger size, and can be taken up and potted early in the autumn. If this is done with care during a dull showery time the plants sustain but little check, as they soon get hold of the fresh soil, and become re-established.

*Salvia Heeri* does best wintered in a cool airy house, where it can have plenty of light, and, like its congener *S. splendens Bruanti*, should be well fed with liquid manure. The natural time for *S. Heeri* to flower is about the middle of March, and it continues to last in full beauty for quite a couple of months. As cuttings made from the young fresh growth are best, the old plants, when they have done blooming, should have their branches shortened, and be then placed somewhere in a gentle, moist heat to give them a start, when the young shoots may be taken off, and if put in the propagating box, in cutting pots, in the ordinary way, they soon strike root. *Salvia patens*, with its unrivalled blue blossoms, is a very desirable variety

for pot culture; but to have this good late in autumn it is necessary to keep it pinched back, and grow it in a sunny position outdoors to get the growth hardened. Being tuberous-rooted, this kind may be kept from year to year, in the way in which *Dahlias* are kept, and may be increased either by division or cuttings. The only insects that affect *Salvias* are green fly and red spider; the latter may easily be kept off by syringing in the evening after sunny days, and the former

bouquets, and for choice flower decorations generally. The best plants I ever saw of this variety were in Messrs. Low's nursery, at Upper Clapton. They were in 5-in. pots, and were so finely developed in every way, so full of flower, clothed to the rim of the pots with healthy foliage, as to render them quite striking objects. It is commonly supposed that in the case of the *Bouvardia* planting out in summer is indispensable to perfect development, but in this instance the plants had



*Flower of Anthurium Andreanum (life size), colour bright scarlet.*

*From a plant grown at Ashgrove, Pontypool.*

in the same way with weak tobacco juice, or fumi-gating the plants when placed under glass—a precautionary measure that should always be taken before they come into flower. S. D.

**Bouvardia jasminiflora.**—This *Bouvardia* is one of the sweetest winter-flowering plants that we possess, and is, moreover, one of the best of this family of winter bloomers. The flowers, pure white and endowed with a grateful perfume, are of infinite service in the formation of hand

been grown along in the ordinary manner of pot culture, thus proving that it is simply a question of care and management.—J. CORNHILL.

## ANTHURIUM ANDREANUM.

This fine South American plant, so brilliant in colour and so novel in aspect, has, like all other new introductions, improved greatly under cultivation. Of this we have a striking illustration in the flower here represented, which was sent



to us some time ago by Mr. E. Fowler, Ashgrove, Pontypool, who has been singularly fortunate in its culture. This flower we had drawn, and its size and general appearance are well shown in the accompanying woodcut. Large as this is, however, Mr. Fowler informs us that he yet expects to have even finer blooms.

#### HOME-GROWN SPIRÆAS AND LILY OF THE VALLEY.

**Spiræas.**—I find that when the treatment is right, home-grown Spiræas are equal, if not superior, to those grown from imported roots. As we require a good many for forcing, both large and small, I grow them in pots one year before they are wanted for forcing, a plan which I can recommend to any one who has not tried it. The plants for forcing next year should be potted at once, if convenient; if not now, it should be done early in the new year, for it is important that they should start into growth as early as the season admits. We have always a stock of plants in the reserve ground, some of which we dig up and divide into pieces of various sizes, some to put in 6-in. pots, and others in larger sized ones. Such pieces should be selected with a moderate number of crowns; for 6-in. pots five or six crowns will be necessary, and for larger pots the number should be in proportion. The pots should be moderately well drained; the soil should consist of three parts fibrous loam and one part well rotted manure, with an addition of some coarse sand or grit. In this mixture the roots may be potted pretty firm, and when the potting is completed and the soil has been well watered, the pots may be taken to a cold pit, or placed in any other structure where they will be free from frost, but they must not be exposed to more fire-heat than is necessary to keep the temperature above freezing. Their culture in spring is best carried out in a cold pit or frame, as they want no coddling. All they want is plenty of air whenever the weather is favourable, water, and shelter from cold winds, rain, and frost. We generally turn our Spiræas out with the bedding plants, where they get some shelter for a week or two before being altogether exposed to cold nights and morning frosts.

**Summertreatment.**—When warm weather sets in I select an open position for them fully exposed to the sun in the frame ground near water, of which they want plenty. Under each pot is placed a saucer, which is kept constantly full of water. From June to the end of August we water regularly with weak manure water, and the saucers are filled with it as often as they get empty all flower-spikes are cut off as they appear. That they like this treatment is evident from the colour of their leaves, and the plump and numerous crowns which we find in the autumn; in fact, the pots may be said to be full of crowns. I have before now counted as many as seventeen flower-spikes on a plant occupying a 6-in. pot. At the beginning of September the saucers are removed and the supply of water considerably reduced, with the view of inducing them to rest. If very wet, dull weather sets in at the beginning of October, the pots are laid down on their sides where they remain until the leaves get quite ready to be cut off. Once or twice perhaps the pots are set upright again and receive some water, but that depends entirely on the state of the weather. If it keeps dull and moist they do not require any further assistance in that way. As soon as the leaves are sufficiently matured they should be cut off close to the crowns, as their early removal promotes early resting, and this is necessary in the case of those who want to begin forcing them early. While resting they may remain in the open air, but it is not wise to expose them to more than 5° or 6° of frost, as a severe frost would probably cause the pots to crack, owing to their being so full of roots.

**Forcing.**—The Spiræa, I find, does not respond readily to artificial heat early in winter, and in order to get it in flower in the middle of January it should be introduced into a temperature

of 70° early in December. When I have tried it in a lower temperature for early flowering I have been disappointed. After the end of January it will do very well if started in a heat of 60°, with an increase as the plants progress. Those wanted to flower early do best in bottom heat; we place our first batch of plants in a propagating pit where the temperature is not less than 75°, and after being well started we bring them out into more light and air. I have great faith in the merits of bottom heat in the case of all plants that have to be started into growth some time before their natural season of making growth occurs, and as soon as there are some well-developed leaves each pot should stand in a saucer of water while it is in the forcing house, and if manure water so much the better for the rising flower-spikes. If the plants are to make handsome specimens they must not, when growing, be crowded, and they should stand in a light, airy position. As soon as they go out of flower they should be placed in a cold pit or greenhouse, where they can be gradually hardened off, and about the beginning of June be turned out of their pots and planted in the reserve garden until wanted again for potting. In order to give them a good rest, and to secure strong plants, three sets are necessary, as they make no progress the first summer after being planted in June.

**Lily of the Valley** should be potted at the same time as Spiræas, and treated in the same way up to the time when it is placed in the open air. 6-in. and 7-in. pots are a very suitable size for it. Pieces may be cut out of an established bed of plants the size of the pots and potted. These will produce more flowers than if single crowns were selected. The drainage should be liberal and the soil of the best description. The summer treatment may be the same as that for Spiræas, except that Lilies of the Valley do not require so much water; therefore the saucers may be dispensed with. Any extra attention in keeping the plants under the shelter of a frame or pit until favourable weather sets in in June I have found to be well repaid. In the case of those that are required to flower early the foliage evidently gets better matured by the plants being grown a few weeks under glass. They go to rest earlier than those grown in a bed of soil, the number of flower-spikes is greater, and plants established in pots will flower earlier and with greater certainty than those not prepared in that way. The forcing of Lilies of the Valley has been so often referred to in THE GARDEN, that it is not necessary to refer to that matter farther than to say that I like to plunge the pots of those that are required to flower early in a gentle bottom heat of about 70°.

J. C. CLARKE.

#### HYDRANGEAS INDOORS.

BECAUSE the Hydrangea flowers fairly well under a rough and ready mode of culture, it seldom gets the treatment best calculated to show its true character. I know of no flowering subject that more lavishly repays generous culture than the Hydrangea, and it must be admitted that a large specimen carrying some four or five dozen flower-heads is, in spite of the wealth of material now at our disposal, scarcely to be surpassed for effect by any summer-blooming plant. The Hydrangea strikes so easily that I need only remark that July is the best time to propagate it, and that the best cuttings are the terminal shoots without flower-buds. The quickest way to form a large specimen is to insert some six strong cuttings round the edge of a 6-in. pot. When rooted set them out in the open air until the middle of October, and then place them in a frame or cool-house. I would of the two prefer a frame, plunging the pots in ashes and covering with a mat, as there they get a complete winter's rest; whereas in an ordinary plant structure the occasional rise of the temperature caused by keeping out frost will be apt to excite them into growth before it is advisable to do so. By April they will begin to move a little, and as soon as they get into full growth shift into 8-in. pots, setting them in the open air about the first week in June. As soon as they

get well established feed well with liquid manure, and you will, if the cuttings have been struck early enough and hardened in the manner recommended, get a fine effective specimen that summer. If instead of turning the plants out-of-doors they are kept under glass the heads of bloom may by liberal feeding be brought to a large size, coming in most usefully for conservatory decoration in early summer. When in full bloom the duration of the flowers will be prolonged if they enjoy partial shade, and the plants will be quite happy in any semi-secluded situation when once they have attained their full development, but the moment the bloom fades bring them out into the full sun, so that the wood may thoroughly ripen, never allowing them to know the want of water. Let them remain outside until November; they will take no harm from a few degrees of frost, and winter them again as cool as possible. Now, however, comes the difficulty that often hinders those who grow this plant into specimen size from doing it justice. Want of space compels the storing them away under stages, in cellars, or some such place, for the winter, but this would not matter provided they are kept quite cool, did they not, as is too often the case, start into growth there, in which case, even when well treated afterwards, they never produce flower-heads of the best quality. There is no better place for these large Hydrangeas than an orchard house during the spring months, as there they will commence to grow with the season, and always enjoying a free circulation of air will make a free and robust growth. By the beginning of February they should be pruned back to three eyes, and when well in growth may be shifted into 12-in. pots, using good loam and plenty of rotten manure in it, treating them in other respects as in the first year.

J. CORNHILL.

**Forcing Spiræas.**—These, as one of your correspondents lately stated, should not be rushed from the open air to the heat of a forcing house all at once. On the contrary, they should be protected from frost, and gradually worked into a temperature sufficient to induce the flowers to open; first they should be placed in a frame, then under the stages or in any out-of-the-way place in the greenhouse, and finally in a temperature of from 60° to 70°, in which they advance rapidly, but even there space is greatly economised by placing the plants, whether Spiræas, Tulips, Hyacinths, or Lily of the Valley, underneath the stages until they start into growth, when they must be at once removed to the stage, or weak growth will be the result. Another point to be observed is on no account to allow them to become dry, or the development of the flower will be at once arrested. When plants are required very early, a good way is after placing them underneath the stage to invert a pot over each, thus keeping them in total darkness, in which they start better than in the light. Pots are to be preferred for covering, as if leaf-mould or fibre is used, the roots push into it as soon as they start, and the check which they receive when removed injures them. In forcing Tulips very early they will often come poor and stunted unless drawn up in this way.—H. P.

**Winter blooming plants.**—"A. B. C." should select *Correa Brilliant*, *Habrothamnus*, *Camellias*, double white, and imbricata, red; *Lasiandra macrantha*, and *Bouvardia jasminiflora*, white. For planting out *Camellias* stand first, and if well managed will, if large enough, yield a continuous supply of flowers from December to February. The *Habrothamnus* is almost a continual bloomer. *Lasiandra macrantha* will flower in winter in a temperature of from 45° to 60°, but unless a good sized plant is procured to begin with, it will take a couple of years to make much show; the same holds good with the *Correa* and the *Bouvardia*, that are not climbing plants, but yet both have such a decided inclination to run up that they will soon attain considerable height, either grown bush fashion or trained to a pillar or wall. But if your correspondent requires the most



flowers in the least space, and these of a character suitable for cutting, beyond the Camellias he must depend on pot-grown plants of Bouvardia, Cytisus racemosus, Epacris, Primulas, double and single, Cinerarias, Cyclamens, Daphne indica, zonal Pelargoniums, Tea Roses, winter-flowering Heaths, &c., all of which will bloom well in the temperature named, provided the best positions for each are selected, and they are treated according to their respective requirements.—T. B.

#### LINDENIA RIVALIS.

THIS handsome stove evergreen shrub, from

with the foliage. It is not difficult to cultivate; in fact, it thrives admirably under the treatment usually given to Gardenias. W. G.

**Anemones in winter.**—Quite recently the common single scarlet Anemone has been blooming as freely and brightly as it does in an ordinary way in early spring, plants such as would be accommodated by an 8-in. pot carrying a dozen large perfect blooms. I see no reason why we should not enjoy this gay, hardy flower in winter. A proper system of culture would undoubtedly ensure a succession of blooms all through the dull

strong single crowns from the open ground in 4½-in. pots, using good loam with a little manure for them to grow in. I plunged them out-of-doors during the summer, and in autumn as the flower-spikes appeared I removed them to an airy greenhouse, where the flowers opened beautifully. Being confined in pots, they were not more than 1 ft. in height; the number of blossoms on each was from three to seven—few it may be said, but the flowers individually were large and bright. The last blossoms are just over, the flowering season having extended over two months.—H. P.

#### THE ABBEY GARDEN ON THE LAACHER SEE.

"Do not forget," said the friendly German as we got out of the rauch-wagen; "do not forget, when you have explored Andernach, to visit the deserted Abbey of Laach. It is a pleasant excursion, though few of your countrymen trouble themselves to go so far out of their way. You will be well repaid. To see the Water Lilies is of itself worth the journey; and besides Laach is a quaint, old-world place. I wonder whether you will get inside the monastery garden." We spent a charming week at Andernach, and before we left, J.'s portfolio was almost full of rough sketches of the mediæval watch tower, the grand Romanesque church, the ruins of the archbishop's palace, and many of the curious old houses which are still standing, for the hand of the restorer has not reached this beautiful old Rhenish town. We decided to go to Laach for two days. The railway took us to Nieder-Mendig; the rest of the short journey was performed in a rough sort of carriage. As we approached, we met parties mostly of peasants) returning home; they might have been pilgrims from some ancient shrine, only instead of Palms or cockle-shells, they carried armfuls of Water Lilies with long trailing stalks and broad leaves. Neither lake nor abbey are visible until you near them, but at a little distance you look down on a tranquil piece of water fringed with Willows and Alders, and bordered by wooded hills. To the left, on a slight declivity, stands the grand abbey with its five stately towers. Behind it stretches a large garden and some buildings which once formed part of the monastery, and are now used as an occasional residence by the proprietor, the Count von S. We directed our steps to the little inn Maria-Laach, principally frequented by visitors who are attracted to the neighbourhood by the readily accorded permission to fish for pike in the lake, and by excursionists who drop in for the 12 o'clock dinner. The extreme beauty of this lonely spot, shut out from the world, enchanted us. On clear days the abbey, standing on slightly rising ground, is reflected in the lake. High hills crowned to their summits with Pine and Fir form a background. The abbey itself is one of the most perfect examples of Rhenish architecture. It is entered at the west by a cloister with finely carved pillars. These were garlanded with Roses and Clematis, and in the quadrangle were the remains of what had once been a carefully tended garden. The church was small and quite bare—no altars, only one monument, that of the founder, Pfalzgraf Henry II., was left. Deserted by the living, it was given up to the dead. Beneath our feet almost every stone bore an inscription—"Dom Petrus de Remagen, 12 Abbas, 1538;" "Ora pro me viator;" "In Gott verstorben." It was almost a relief to pass from this dim and defaced temple into the brilliant sunshine of the July morning, and the cheerful company which occupied the inn yard; here all was life and activity. In the shade of an ancient Oak which might have been a sapling when the abbey was first built, a rosy-faced maiden, with beautifully plaited hair, through which a brass bodkin was



*Lindenia rivalis.* (Drawn at South Kensington, July 26, 1881.)

Guatemala, has again been brought into prominent notice, after having well-nigh lapsed into oblivion since its first introduction some years ago. Some short time ago Messrs. Veitch exhibited it finely in flower at South Kensington, when it was awarded a certificate of the highest class. As may be seen by the annexed illustration, the long tubular flowers are produced in terminal clusters, and, being pure white and of wax-like consistence, they contrast beautifully

months of the year. The great point would be to encourage an early growth in autumn, potting the roots in rich soil in August and watering freely. Afford shelter from hard frosts, and place them for the winter in a light house in a temperature of from 50° to 60° by day.—J. C. B.

**Senecio pulcher indoors.**—This showy autumn-flowered plant is one that should certainly be grown where there is a conservatory to keep gay at all seasons. Last spring I potted up some



drawn, was peeling Potatoes and washing crisp salads. The watch-dog basked lazily in the sun. The forst-meister's children made the neighbouring garden ring with their merry play, while the hum of bees and the soft cooing of the pigeons, immemorial tenants of the wood, were faintly heard. The comely landlady, with her silver girdle, in which sundry brass spoons and ladles were inserted, and from which depended a jingling bunch of keys, came into the courtyard from time to time to see how the preparations for dinner were going on. Beyond the inn, on one side, a rustic path led through yellow Cornfields, while on the other a winding road, bordered with flowers and Moss, gemmed here and there with bright, wild Strawberries, wound up to the woodland heights. "*Guten appetit*," said the landlady as "J." and I joined the *table d'hôte* in the large room, with sanded floor and old carved Oak furniture bright with constant rubbing. We were the only foreigners. I overheard "J." making friends with a stout, bald-headed gentleman, who, with his napkin tucked under his chin, was assiduously feeding himself with his knife.

He was asking this patriarch if we could obtain admission to the garden of the monastery at which we had looked with longing eyes that morning. "No, quite impossible; no stranger ever enters. The buildings, which are very extensive, the farm and gardens, all once belonged to the abbey, and are now the property of Count Von S——. He farms for profit, and seldom visits Laach. His steward, Herr Rosenthal, is a very courteous gentleman, but he has been ordered to admit no strangers."

THE ABBEY GARDEN.—We determined, however, to try to get into these guarded grounds. The dragon who watched there was a bent old man, who at first declined to take a message to the steward. "Nein, meine herrn, nicht möglich; however, as you have come from such a distance (did you say England or America?) I'll eno go and ask the rentmeister; your cards with your names and your dwelling place plainly written." This concession was doubtless extorted by the sight of a couple of marks slipped into his hand with the cards. The steward appeared shortly afterwards, and after a great deal of mutual taking off of hats, bowing, and exchanging of cigars, he graciously consented to show us the garden. We passed through a narrow wicket and found ourselves in a spacious pleasure ground surrounding a house, probably of the 16th century, which had recently been white-washed. It consisted of a handsome front with two wings. There was some fine carving over the doors and windows, while a figure of St. Benedict, life size, adorned the principal entrance. A border ran under the windows; it was full of the gayest of flowers, straggling masses of scarlet and pink Geraniums, many coloured Phloxes, Pinks, and Carnations, white, red, and yellow Roses, Jessamine, Clematis, and other creepers garlanded the ancient façade, peeping into the old rooms and filling them with sweetness. A long and broad stretch of grass sloped gently down to the part of the garden devoted to vegetables. In the middle of this plot a sun-dial, green with age, which may have marked "Time's thievish progress" for the recluses who once dwelt here, cast a deep shadow on the smooth turf. It bore this motto, "*Utere presenti, memor ultimi*." Every nook and corner was gay with Fuchsias in great bushes, Asters, and Petunias, while in front of a well-clipped Yew hedge which divided the floral part from the vegetables a row of tall Sunflowers flaunted in their livery of green and gold. (I have had two or three opportunities of observing the effect of a row of Sunflowers planted in this manner having a closely

clipped formal hedge as a background; it cannot be surpassed.) A broad walk stretched along the left of the garden; on either side of it was a row of Pomegranates—trees in pots and tubs. They were a mass of flaming scarlet blossoms. Raspberries and Currants were in great profusion. The wall was covered with well-trained Peach, Plum, and Pear trees, fastened to a trellis, while on the standard Apricot trees, of which there were forty or fifty, the fruit was turning yellow. We crossed a bridge which connected the garden with a long terrace planted with trees and overlooking the abbey. "Before you go," said the rentmeister, "take a last look at our church." The afternoon sun lit up the fine carving on the west front, and brought out the noble proportions of the abbey, while the wooded hills with their varied tints served as a background to the picture. Below the tranquil lake reflected the quiet scene.

THE LAACHER SEE doubtless occupies the crater of an extinct volcano. It is 666 ft. above the level of the Rhine and very deep. There is a popular notion that no bird can fly over it without being killed by the poisonous vapour. The circumstance that a jet of carbonic gas issues from a small opening on the north-east side seems to account for the belief. The lake is fed by numerous springs below the surface, which keep its basin constantly filled. It has no natural outlet, but the superfluous waters are carried off through a subterranean canal nearly one mile long, cut by the monks in the 12th century after an inundation which threatened to overwhelm the abbey. On the banks of the lake are found masses of scoriae, cinders, ashes, with pumice stone and other volcanic products. "We have fallen on evil days," continued the rentmeister. "This once proud monastery, the home of learning, was the abode of 40 or 50 monks, who were splendid in their hospitality and divine in their charity. One wing was reserved for the use of strangers, who were free to stay as long as it suited their pleasure or convenience. They could spend their time in the fine library or wander into the picture gallery; while those who loved the chase or who preferred fishing, were welcome to enjoy excellent sport. The sick and poor were lodged in the opposite wing. The good Benedictines themselves divided their time between their devotions, friendly intercourse, and works of mercy. Some of them were no mean artists (a picture painted by Brother Jerome was rescued from the French when the monastery was suppressed nearly eighty years ago); while in the house are still to be found a few manuscripts, the poor remains of what was once the monks' library. I wish our chaplain had been at home, as he would have told you all this far better than I have done." "Does not the count care about books and antiquities, then? or does he bestow all his care upon the lovely garden and farm?" "The count is not a literary man. A good bear hunt is more to his taste. He is not over particular about anything but making money of the produce of the place, which is sent to the Cologne market. The chaplain, however, is quite a different sort of man, and takes to the well-worn parchments mightily. There is a learned man for you! He has Latin and Greek at his finger-ends and can besides speak French and English, yet he is contented to be buried in this quiet spot where we see no stranger sometimes for weeks together. He and I often smoke a pipe together under this old Walnut tree where we are now sitting. This is our favourite spot, as from it one can see all the country round. It is grand when there is a storm; it brings to my mind (though I am no reader) some lines of Goethe's in the Shepherd's Song—

(Und Regen, Sturm, und Gewitter,  
Verpass ich unter den Baum.)

After a friendly farewell we crossed the lake, filling the boat with the Water Lilies, which seemed to carpet its unruffled surface, then through the romantic Brohl Valley lined with tufa rocks, past the castles of Sweppenburg and Olbrück, situated on the confines of the volcanic region of the Eifel, we reached the Rhine railway on our way to Coblenz.

MARK NESFEILD.

## THE GARDEN FLORA.

### PLATE CCCXVI.—BATATAS PANCULATA.\*

THIS is one of the finest of the Bindweed family. It is a perennial twiner with a thick tuberous rootstock, from which the flower-stems are annually reproduced. They reach a length of 50 ft. or more, and are clothed with large handsome hand-shaped leaves. The purplish-pink blossoms are borne several together on lateral stalks, and are spread over a considerable portion of the stems, making a long continued display. No one who has visited the Water Lily house at Kew, from midsummer to autumn, can have failed to regard with admiration the fine specimen of this plant which almost completely encircles the tank, on the rails of which it is trained. It is from this plant the annexed plate was prepared. The pot stands over the water into which the roots descend, and supply plenty of moisture during the season of growth. This position seems to suit it better than any other. In winter the tank is dry, no water is given to the plant, and the consequent drought, together with a cool temperature, is precisely what it requires. It is found in India, Java, Mauritius, West Africa, Guiana, Brazil, and New Holland. In Western Tropical Africa it is commonly cultivated for food, and another species, the Sweet Potato (*B. edulis*) is grown largely in tropical and sub-tropical countries for the same purpose. The latter possesses little decorative value.

CULTURE.—Though best adapted for large houses this plant is also suitable for ordinary sized stoves. In such it may be trained over the pathway and around the house if necessary. Cuttings from old plants strike without much difficulty. They should be as short-jointed as possible, and from the least vigorous parts of the plant. When a small plant has been obtained, cuttings from it strike with the greatest facility. As to soil, it likes a rich loam, well consolidated. The pots should be carefully drained, as a large supply of water is required during the growing season. A shift may be given whenever the roots have well filled the pots, provided the new soil will be occupied by them before the plants go to rest. Moderate shifts only should be given at first, in order that the soil in the centre may be well filled with roots. As large pots must be ultimately used it is best to keep the roots together from the beginning. The necessity for shifting will be diminished as the plants advance in size, and when full grown they may be allowed to remain two or three years in the same pot. When repotting after a season of rest, some of the old soil should of course be shaken away, and fully developed specimens should be replaced in the same sized pots. After a decided season of rest, flowers are produced in abundance, but it may be well to mention that unless some water is given in spring the plants may not start into growth, and may remain dormant till the following year. This species is used as a stock on which to graft *Ipomœa Horsfalliae*, cuttings of which strike with great difficulty. Insects occasion little

\* Drawn from a plant growing in the Royal Gardens, Kew, September, 1881.











trouble in the case of this plant, but if they should appear they must be dealt with in the usual way.

R. I. LYNCH.

## TREES AND SHRUBS.

### TREES IN AUTUMN AT HIGHCLERE IN 1881.

DURING last September and October the autumnal tints of the deciduous trees here were remarkably fine, particularly the Beech, the leaves of which are of long duration and among the first to give colour—first yellow, then reddish-brown—to the autumn landscape. Such trees contrast beautifully with dark green Cedars of Lebanon, with which at Highclere they are associated. Towering Elm trees with bright yellow foliage also mix finely with the Beech and Cedar; and that monarch of the forest, the native Oak, with its ochre-coloured leaves, contrasts agreeably with the finely-tinted hues of the Maple. These, when all harmoniously combined, produce a pleasing and beautiful effect. Amongst Maples from the far west, *Acer macrophyllum* is worthy of special notice; it has fine large foliage, glossy green in summer, changing in autumn to yellow and brown, and being a free-growing sort it soon attains the size of a large tree. The English Maple (*Acer campestre*), with its small pale yellow leaves, has a graceful effect in autumn, and contrasts finely with evergreen Oaks, or trees of a similar character with dark green foliage. The dwarf variety of *Acer campestre* and the Guelder Rose formed a beautiful combination in a sunny spot here, the crimsoned leaves and red berries of the *Viburnum* being charming mixed with the pale yellow foliage of the Maple. The dwarf *Acer campestre* mixed with *Cotoneaster Simonsi* would make an effective combination in autumn. In the woodlands here is a Thorn partly overgrown with Ivy, and overrun with the Spindle tree, whose long racemes of red berries are remarkably showy among the green Ivy and grey lichened branches of the Thorn. Hawthorns profusely covered with berries this year have a fine effect half buried among Clematis with its woolly seed clusters. *Cratægus Layi* is beautiful in autumn, and so are *Magnolia macrophylla* and *tripetala*, *Virgilia lutea*, Tulip trees, *Salisburia adiantifolia*, *Gleditsia tricanthos*, *Diospyros virginiana*, and the white Lime, the latter remarkably attractive when moved by the summer breeze, so as to show the silvery undersides of the leaves, particularly in company with dark green foliaged trees. The islands in the lake were crimsoned this autumn with varieties of *Azalea pontica*, *Andromedas*, and *Gaultherias*. The *Azaleas* are not only effective in autumn, but beautiful in early summer with fragrant flowers. The foliage of the deciduous Cypress (*Taxodium distichum*) becomes towards the end of the year bright reddish brown, a colour which is shown off to advantage among groups of *Rhododendrons*. The many sorts of Oaks produce manifold hues, the scarlet *Quercus coccinea* and the red *Quercus rubra* retaining their bright reddish leaves long through the winter. The Birch and Willow, too, are surpassingly handsome by the side of the water, and the white Birch (*Betula alba*), with its bright yellow leaves, harmonises finely with the russet foliage of the Oaks. The drooping variety of the white Birch is also beautiful in form and outline, even after its golden leaves have been scattered by the autumn winds, its long slender spray-like shoots drooping gracefully over the silvery bark on its boughs and stems. The Birch will grow in almost any sort of soil and situation, but attains the largest size in moderately moist ground.

By carefully studying the form and outline of deciduous trees, and the colour of their bark, and by judiciously arranging them, either singly or in groups, combined with evergreens, good winter effects can be produced in both parks and woodlands. The Oriental and Occidental Planes are very ornamental trees both in summer and autumn,

and even in winter, when their boughs and stems have shed their bark, they have an interesting appearance, particularly when associated with Beech, Elm, and other trees with bark of a dark tint. The red Dogwood (*Cornus sanguinea*) and the Golden Willows, when mixed or planted in groups near each other, are very effective for the wilderness in winter.

Considerable advancement has been made of late in the cultivation of hardy flowering plants by the sides of woodland drives; in spring and summer wild corners have been made cheerful with hardy exotics that will keep their place in their struggle for existence with the indigenous plants. There are, too, plenty of material for selection among hardy trees and shrubs to vary the monotony of colour often met with in winter in parks and woodlands, and even after the winds have scattered the mellowed leaves there are still left among trees variety of colour and form sufficient to give life and beauty to our parks and woodland drives in winter.

S. ROSS.

### ORNAMENTAL SHRUBS.

THE numerous uses to which ornamental shrubs have of late been put in the laying out and beautifying of lawns, private gardens, and pleasure grounds have led to the introduction into this country of many valuable sorts, remarkable not only for their distinct and beautiful foliage, but also for the abundance of bloom produced by some of them, especially the American varieties. Amongst the latter are included several sorts of *Andromeda*, *Azalea*, *Kalmia*, *Ledum*, *Gaultheria*, and *Heaths*, all of which are admirably adapted from their easy culture and extreme beauty for a prominent position amongst British and other plants. Peaty soil or light fibrous sandy loam seems a necessary element as regards the growth of these plants, and such if not naturally present should be obtained, and substituted for the soil in places which they are intended to occupy. Partial shade and moisture should also be secured if possible.

*Andromeda floribunda* is an interesting plant which grows from 2 ft. to 3 ft. in height, and produces, as its name indicates, abundance of flowers of a creamy white colour, and well worth a place even in the most restricted collection. Several other fine forms of the *Andromeda* are also in cultivation. *Gaultheria procumbens* and *Shallon* are ornamental dwarf plants, cultivated in the American garden chiefly for the rich display made by their bright scarlet berries, and for their suitability for planting under the shade and drip of larger trees. *Kalmia angustifolia* and *latifolia*, pretty free flowering plants, which like a shady situation, are indispensable where American plants are cultivated. *K. latifolia*, a native of Carolina and other parts of North America is frequently found growing on hillsides in the most sterile soil. It flowers in May and continues in bloom during the greater part of the summer. The leaves of both plants, especially *K. latifolia*, are reputed poisonous to cattle and sheep.

Several fine forms of *Azalea* are now commonly cultivated out-of-doors. *A. indica* and its varieties are particularly fine, but only in a very few places sufficiently hardy to stand our ordinary winters without glass protection. The really hardy *Azaleas* are best grown in groups or compartments by themselves, or with other plants requiring a moist, peaty soil and a shady situation, as when massed in beds the flowers are very effective, especially those of *A. mollis* and *pontica*. The several varieties of *Ledum* are highly interesting evergreen shrubs, seldom exceeding 3 ft. or 4 ft. in height, the two finest perhaps being *latifolium* and *thymifolium*. Of Hardy *Heaths* there are such a variety, that one could almost have a succession of bloom during the whole season, were a sufficient quantity cultivated. Amongst the larger kinds more commonly grown for decorative purposes are *E. mediterranea*, *hibernica*, *arborea*, and most of the British varieties. *E. carnea* is one of the best for early spring flowering,

its beautiful flesh-coloured blooms being produced in great profusion. Although most *Heaths* will thrive in ordinary garden soil, yet they prefer peat or leaf-mould, and a cool, airy situation.

Penrhyn, N. Wales.

AUGUS D. WEBSTER.

**Olea fragrans.**—The blossoms of this plant are so inconspicuous that it might easily be overlooked were it not for their fragrance which at once arrests attention. This shrub, though nearly hardy against a wall, is nevertheless well worth the protection of a cool greenhouse at this season, so as to retain the flowers as long as possible. Small plants of it in 6-in. pots as densely laden with flowers as large bushes can easily be had either from cuttings or grafts. Cuttings of the half-ripened wood taken during summer and kept in a close frame root without difficulty, although they remain a long time before that takes place. It also readily unites with the common Privet, on which it may be grafted; in fact, this is the mode of propagation generally employed. The stocks when dormant should be potted in as small pots as possible, and plunged out-of-doors till required for use, when they should be brought indoors, headed down to the height required (they make the best plants grafted as low as possible), then cleft and the graft inserted wedge fashion. After tying securely, place them in a close frame till a union takes place, when they must be hardened off by degrees.—ALPHA.

**Euonymus radicans variegatus.**—Mr. Ware tells us of specimens of this neat silvery shrub 16 ft. to 18 ft. high in the town of Gloucester (in Worcester Street). We have ourselves noticed it nearly 12 ft. high on walls, and have been much struck with its fitness for covering a wall or portion of a house where any compact, silvery, or variegated subject is desired. Like others of its race, it grows well near the sea, and indeed in all parts of the land. Mr. Ware sends us a sketch he made on the spot, showing a three-storeyed house with the plant on each side grown well above the top of the second-storey windows. We are so accustomed to see this used as an edging or rock plant that its fitness for other uses is apt to be overlooked.

**Single Kerria.**—This I find is becoming popular. We have plants of the single yellow with variegated leaves, but the variegation is not very distinct, and the plant is a weakly grower, certainly not so strong as the double form. It is, however, very pretty, its sprays being light and graceful. It grows against the south front of a terrace wall, where a great variety of old-fashioned creepers and climbers mingle with excellent effect; for instance, the *Kerria* and crimson *China* Roses at the base are overhung by masses of *Wistaria* and *Banksian* Roses in early summer, and later the beautiful *Clematis Jackmani* covers all with its richly laden branches of purple.—J. GROOM, Linton.

**The crimson-fruited Snowberry** mentioned in THE GARDEN is probably *Symphoricarpus vulgaris*, the fruit of which is of the colour alluded to, but much smaller than that of the Snowberry, and contributes but little to the ornamental appearance of the plant. This species differs from *S. racemosus* in having a neater habit of growth; in fact, omitting the fruit altogether, it forms a much handsomer shrub than the Snowberry. Another difference is that while *S. racemosus* is entirely deciduous, *S. vulgaris* retains some of its leaves during the winter. Of this latter there is a variegated variety, in which the leaves are prettily edged with white.—ALPHA.

**Cydonia nivalis.**—A pure white form of this free-flowering shrub, so well suited for clothing a low wall, had long been a desideratum in the horticultural world. To Messrs. Veitch, of Chelsea, are we indebted for the above, which produces blooms of such exquisite wax-like purity as to render them far superior to the tinted white forms previously in cultivation; it is worthy of a place in the smallest collection.—J. T. POË, Riverston.



CATALOGUE OF TREES AND SHRUBS  
CULTIVATED IN THE GARDEN OF BITTON VICAR-  
AGE, DECEMBER, 1880.

CATALOGUE OF TREES AND SHRUBS CULTIVATED IN THE GARDEN OF BITTON VICAR- AGE, DECEMBER, 1830.		Hibiscus variegatus plenus Hippophae rhamnoides Hydrangea quercifolia arborescens Hypericum calycinum Kalmianum Iberis corifolia gibraltaria saxatilis Ilex Aquifolium flava albo-marginata aureo-marginata Scotch myrtifolia Parado ferox aurea variegata Ilex-leaved balearica heterophylla Jasminum fruticans officinale revolutum Cassine ferox humile Juglans regia Juniperus communis alpina prostrata hybernica sabina fol. var. suecica virginiana phoenicea chinensis Lycia tamaricifolia Kalmia latifolia Koeleruteria paniculata Laurus nobilis Sassafras Lavandula spica Ledum palustre Ligustrum lucidum vulgare leucocarpum italicum chrysocarpum nepalense Liquidambar styraciflua Liriodendron tulipifera Lonicera flava flexuosa grata implexa japonica Periclymenum quercifolia pubescens sempervirens minor tatarica Xylosteum Lyium barbarum Magnolia grandiflora Melianthus major Menispermum canadense Menziesia globularis polifolia fl. albo nana Mespilus Amelanchier germanica tomentosa Morus nigra alba papyrifera Myrtus communis mucronata Myrica Gale Ononis arvensis pendula fruticosa rotundifolia spinosa alba Ornus europæa Ostrya virginica Paeonia montana rosea Paliurus vulgaris Passiflora cerulea racemosa filamentosa Periploca graeca Philadelphus coronarius fol. var. Phillyrea latifolia angustifolia Media nana levis bunifolia ilicifolia olecefolia Phlomis fruticosa Photinia arbutifolia serullata Pinus Abies alba balsamea canadensis	Pinus Cedrus Mugo taurica Laricio Fraseri Laricio macrocarpa Cembra Larix Picea Pinaster Picea Pumilio lanceolata maritima serotina Strobilus syvestris Tieda nigra clausbrasiliana halepensis inops rubra Pistacia Terebinthus Lentiscus Pittosporum Tobira Platanum occidentalis orientalis Platanus undulata Polygala Chamæbuxus Populus alba balsamifera dilatata Potentilla dahurica trifoliata fruticosa Prunus armeniaca lusitanica Luro cerasus serotina cerasus plenus pendula Holbin's Plum angustifolia Chinese double Cherry Chinese Laurel narrow-leaved Laurel Punica Granatum Pyrus Aucuparia domestica japonica alba Malus prunifolia angustifolia intermedia angustifolia spectabilis Quercus Corris coccinea Robur Cerris dentata exoniensis Rhamnus Alaternus aureo-marginatus argenteus latifolius catharticus Faliurus Rhododendron hirsutum japonicum ponticum Rhus Cotinus lucida radicans typhina vernix Ribes alpinum aureum Grossularia sanguineum Robinia microphylla elegans hispidula inermis monstrosa Pseudacacia viscosa Rosa alba fl.-pl. great blush celestial alpina pendula speciosa anemoneflora arvensis variegata Andersoniana scandens Banksie lutea blanda horren benzalensis scandens alba Biebersteini Bom-austi alba bracteata fl.-pl. chinensis florida canina plena caucasica	Rosa carolina caroliniana collina cuspidata corymbosa centifolia muscosa multiplex alba pomponia cluster de Meaux mossy de Meaux Provins single common Childing's blush white Shadler's Spong's St. Francis cinnamomea fecundissima damaescena Grand Monarque blush Belgic blush Monthly Incomparable Quatre Saisons Pestana red Monthly red Belgic Rouge Agathe Swiss Watson's blush white Damask white Monthly York and Lancaster Zealand dahurica Doniana ferox dumetorum ferox florida fraxinifolia Grevillia hibernica gallica Atlas Bijou Bishop Bouquet Royale Brussels Cardinal Chancellor Couleur de Feu double velvet Duchesse d'Orleans Dutch 100 leaved Giant Grand Monarque grand purple Ornement de Parade standard grand velvet Mundi Pestana Pluto Pompadour Portland Proserpine Queen royal crimson gallica sanspareil single velvet Tuscany glaucophylla grandiflora involuta laxa Lee's Perpetual Brunswick indica superba coccinea nigra major minor Barclay's kamtschatica Lewis Lauranceana fl.-pl. lucida lutea lutescens macrophylla majalis microphylla Monsonic moschata fl.-pl. multiflora alba nitida Noissetiana rubra odorata superba oimica parviflora double	Rosa parviflora precoc pumila punicea pimpinellifolia sibirica rapa rubella striata alba reversa rubiginosa fl.-pl. ruga rubifolia Cherokee Sabini semperflorens alba diversifolia atrorubens sempervirens setigera stricta apinosissima blush marbled Provins red white yellow velvet purple purple Fairy bright crimson Townsend's Lady Finch Hatton Princess Elizabeth Lord Byron Sir James Mackintosh Artemisia aculeatissima Glasgow Juba Hector Lady Douglas Aristides Transparent Aurora Smith's two coloured Ianthe Proteus Saiina Mrs. Hooker Mr. Aston Lady Harriet Wynne Duchess of Gloucester Lady Stewart Agrippa Sappho Erebus Sylvia Scotia Hecuba Lady Compton Lady Banks Pomona Lady Gwyder Janus Saxonia dwi. bicolor Ajax Agrippa Lady Jane Mont- gomery Sybilla Lady Clive Lord Lyndoch March. of Bute stricta Dandry taurica teneriffensis Woodsi sulphurea systyla Monsonic tomentosa resinosa oxoniensis turbinata umbellata villosa fl.-pl. Roses from Sweet's Hort. Sub. 1830. alba vars. Rodway acicularis Globe white hip Italian evergreen Brier Hort. Varietates. Abundant Dutch Cluster Bouquet panache double Hip Tree Peony crimson Perpetual Globe white hip Brunswick Lee's Perpetual Grand Velvet Rosa Lubeck Watson's blush Wellington
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<i>Rubus coronarius</i>	<i>Tamarix gallica</i>
<i>fruticosus</i>	<i>germanica</i>
<i>variegatus</i>	<i>Taxus baccata</i>
<i>Ilex</i>	<i>hibernicus</i>
<i>Linkianus</i>	<i>Teucrium flavum</i>
<i>laciniatus</i>	<i>lucidum</i>
<i>arcticus</i>	<i>Thea viridis</i>
<i>macracneus</i>	<i>Thuja occidentalis</i>
<i>nootkatensis</i>	<i>Lucas's</i>
<i>odoratus</i>	<i>orientalis</i>
<i>saxatilis</i>	<i>sibirica</i>
<i>Ruscus aculeatus</i>	<i>plicata</i>
<i>Hypoglossum</i>	<i>Tilia europæa</i>
<i>Hypophyllum</i>	<i>Ulex europæus plenus</i>
<i>racemosus</i>	<i>hybernicus</i>
<i>Ruta graveolens</i>	<i>Ulmus campestris</i>
<i>Salisburia adiantifolia</i>	<i>montana</i>
<i>Salix argentea</i>	<i>pendula</i>
<i>anulata</i>	<i>spiralis</i>
<i>babylonica</i>	<i>Cornish</i>
<i>Bonaparte's</i>	<i>vegeta</i>
<i>candida</i>	<i>Viburnum Lantana</i>
<i>Doniana</i>	<i>Opulus</i>
<i>herbacea</i>	<i>tinus</i>
<i>lanata</i>	<i>lucidum</i>
<i>pentandra</i>	<i>rotundifolium</i>
<i>reticulata</i>	<i>lavigatum</i>
<i>vitellina</i>	<i>hirsutum</i>
<i>violacea</i>	<i>Vicia major</i>
<i>undulata</i>	<i>variegata</i>
<i>Smilax aspera</i>	<i>minor cœrulea</i>
<i>Spartium radiatum</i>	<i>alba</i>
<i>Spirea bella</i>	<i>fl.-pl. cœrulea</i>
<i>chamaedrifolia</i>	<i>atropurpurea</i>
<i>corymbosa</i>	<i>multiplex</i>
<i>frutex</i>	<i>variegata alba</i>
<i>hypericifolia</i>	<i>cœrulea</i>
<i>salicifolia</i>	<i>media</i>
<i>sorbifolia</i>	<i>Vitus laciniata</i>
<i>trilobata</i>	<i>riparia</i>
<i>ulmifolia</i>	<i>vinifera</i>
<i>Shepherdia sericea</i>	<i>Yucca acuminata</i>
<i>Symphoricarpos glomeratus</i>	<i>aloifolia</i>
<i>racemosus</i>	<i>glaucescens</i>
<i>Syringa sinensis</i>	<i>recurva</i>
<i>persica</i>	<i>angustifolia</i>
<i>vulgaris cœrulea</i>	<i>stricta</i>
<i>Syringa v. c. alba</i>	<i>Zanthoxylum fraxineum</i>
<i>dwarf</i>	

## SHORT NOTES—TREES &amp; SHRUBS.

**Sequoia sempervirens alba spica.**—Most varieties of coniferous plants to which the name of *alba spica* is given are at the best but sickly in hue, but this is an exception. The white, or rather the bluish-white, appearance of the young shoots is caused by the undersides of the leaves being densely covered with a glaucous bloom, and the leaves themselves are closely pressed to the stem, so that only the reverse sides are visible. This plant is very distinct from the type, the difference in colour being seen to most advantage in sunshine.—ALPHA.

**Kerria japonica and Rhododendron Russellianum.**—In answer to an inquiry from "E. H. E." concerning these, allow me to say that both are doubtless obtainable from any of our leading tree and shrub dealers. The variegated leaved form of the *Kerria*, which is of dwarf habit than the type, but like it bears single flowers, is a very beautiful shrub, and one that should on no account be omitted from a collection, even if small, especially as it is easily obtained and cheap.—ALPHA.

**Large trees at Syon House.**—The following are the measurements of some of the finest trees in the arboretum at Syon House, Isleworth—

	Height of branches	Spread of branches	Girth of stem 2 ft. above ground
Cedar of Lebanon	72 ft.	75 ft.	17 ft.
" "	80	84	15
Taxodium distichum	97	36	15
Planera Richardi	76	30	10
Acer creticum	44	40	7
Alnus glutinosa laciniata	76	60	11
Liquidambar styraciflua	80	48	6
Catalpa syriacifolia	30	36	5
Virgilia lutea	60	45	6
Sophora japonica	70	60	12
Corylus Columna	62	59	7

**Pernettyas.**—*J. S.*—*P. mucronata*, *Pentlandi*, and *pilosa* bear white blossoms in May; *P. Pentlandi* bears berries the size of a large Pea, of a dark blue-purple; *P. candida* and *P. grandiflora* are garden varieties of *P. mucronata*, the former having white berries.

**Plants under trees.**—Would some reader of THE GARDEN tell us if there are any plants that would grow and thrive under a common Yew tree?—*J. M.*

## THE FLOWER GARDEN.

## SINGLE PINKS.

THE accompanying illustration is that of a very pretty, sturdy, single Pink which we received during the autumn from Messrs. Dickson, of Waterloo Place, Edinburgh, who pay much attention to these plants. A single Pink cannot be said to be much of a novelty from one point of view, because the whole of the lovely Pinks of the Alps of Europe and other mountains are single, but we have been so long accustomed to the cultivation of the double kinds that one may not have had any means of seeing how bright, useful, and effective good sturdy single forms of the common Pink might be. Such is the one we illustrate; there is a brightness and clearness about good single forms which the double ones do not show, though for other purposes we value as highly double Pinks as those who never saw or cared for a single one. The introduction of a good race of single Pinks would simply enrich and widen, not narrow, such garden pleasures as we now enjoy from these fragrant and hardy



Single Pink.

flowers. We feel sure Mr. Grieve, of Messrs. Dickson's nursery, can tell us something of the single Pinks, and hope he will do so, as well as of the race of dwarf, self-supporting double Pinks which have lately been raised. Single ones of the same dwarf strong habit would be valuable for the rock garden.

## GENTIANA VERNALIS.

I AM in duty bound to speak in favour of this lovely native. Ever since the spring of the present year, until a week ago, it has pleased us with its matchless flowers. It seems, however, that there is another variety, compared with which the British suffers. I duly received plants of the reputed superior kind and certainly by their side the native plant looked lean and straggling, being smaller in all its parts (except the length of stem) than the beautiful Swiss kind. My stock, however, of the native sort was neither discarded nor despised, but grown on side by side with the best kind. It is now nearly 2 years since the two varieties met (if as varieties I should further speak of them). Both have grown well under exactly the same conditions and treatment; the imported plants have certainly not deteriorated,

whilst the native plants have so improved in their habit and constitution that I could not now tell one from the other if the pots and labels were transferred. I cannot, therefore, think that there is really any difference of form even, in this species; probably it has a happier home in the alpine regions of Switzerland than in our climate, but, be that as it may, it is my experience that our native strain is in no way inferior after a test of two years' culture. I know that *G. verna* is by many considered difficult to grow, and it may appear somewhat singular when I say that I have found no alpine of more easy management, and really I have in its culture nothing to boast of. I may briefly add that, like *Trientalis europæa*, it is best grown in pots, so as to prevent the creeping wiry roots from spreading too widely, so obtaining neater specimens. It is important to begin with properly-rooted plants, the crowns of which are frequently 2 in. to 3 in. below the surface, from which spring the numerous bare, yellow, wiry stems, too often taken for roots, I fear; whereas the main roots are radical, very long for so small a plant, and furnished with silky feeders. Good crowns, potted in rich fibrous loam, and plunged in sand in a dry and open situation, with an unstinted supply of water, is the substance of the simple treatment my plants receive the year round. I have never yet repotted them; they are mostly in 3-in. and 4-in. pots, and have this autumn yielded a nice crop of seed, and when a pot is lifted out of the sand the fine, long, silky roots are seen to have made their way through the hole, and to have spread amongst the sand, or, more properly speaking, sand and fine brick grit—a most useful material in either rock or pot plant culture. *J. Wood.*

Kirkstall.

## FLOWER GARDENING ON GRASS.

THOSE who may not yet have given a trial to the system of growing flowers of various kinds, especially bulbs, on Grass will find this a good time to make a commencement. Many of the most valuable are now fit for removal, and after the spring flowers in beds have been planted, the surplus plants may be utilised in this way as a start. The safest plan will be to commence with those that succeed almost anywhere, as the object is to decorate spots in the pleasure grounds that can hardly be turned to any other use. Even in the smallest gardens there are places under deciduous trees where the Grass naturally grows thin all the year round, and where it is useless trying to renovate it. These are the very spots for Snowdrops, Aconites, Jonquils, Daffodils, Anemones, Scillas, and similar flowers. Take out a good spade's depth of earth, and if poor, put in some rich soil, then the roots, and then fill up with the old soil. They will make these bare spots look beautiful in spring, and as the trees put on their wealth of verdure in summer, the bulbs will go to rest out of sight, and in the autumn the fallen leaves should be left as a protection for them. The worms will draw most of them into the ground, or, if in very conspicuous places, where on the score of neatness they must be removed, put them in pits, and the following year spread them in a decayed or leaf-mould state over the bulbs. There are, however, plants that require a lighter position to bring them to perfection that look better springing from the turf than in any other way, such, for instance, as *Bocconia cordata*, Solomon's Seal, *Acanthus latifolius* and *mollis*, the hardy *Fuchsias*, like *Riccartoni*, that are cut down annually like herbaceous plants, *Heracleum giganteum* with its noble foliage, and many others. On mossy banks very beautiful effects may be produced by planting at this time of the year various coloured Primroses, single and double Polyantheses, Oxlips, Hepaticas, Auriculas, Gentians, Cyclamens, Dog's-tooth Violets, Lily of the Valley, Colchicums, and similar plants, all of which will have a better effect so situated than in beds of freshly dug earth, there being no splashing of the blossoms with heavy rains; and there is no need for hurrying them out, as is too often the case when used in connection with ordinary spring flower gardens. On the contrary,



they can remain as permanent plants; or, if needs be, transplanted at the most congenial season for their separate wants, and by a little forethought a long season of floral beauty can be provided, and many an uninteresting spot rendered beautiful, by carpeting with *Myosotis*, *Silenes*, and the biennial plants that, when once established, will reproduce themselves from seed with but a minimum of care. The well known *Honesty* (*Lunaria biennis*) is not only cheerful in spring, with its spikes of crimson flowers, but its silvery seed pods are especially welcome in autumn, and it will grow well where the Grass fails to make a dense velvety cushion of turf. J. GROOM.

#### THE ROCK GARDEN.

**Erpetion reniforme** (the New Holland Violet).—The modest beauty of this little plant is sure to arrest attention, especially of those who see it for the first time. Belonging to the Violet family, it may be briefly described by stating that instead of five it possess only four petals, which are spurless. Mr. Wollaston, a traveller, collector, and grower of alpine, says whenever he has a plant reputed to be tender he tries it on a northern aspect, and in most cases finds that answer his purpose. It is more because a plant cannot stand being alternately frozen and thawed than from other causes that we fail with so-called tender things. In the right position and in a soil that suits it we have never had reason to regard this as a difficult plant to manage; growing in a soil almost wholly composed of limestone grit, in a narrow, rocky path, entirely shaded in summer as well as in winter, it is safe enough, and increases rapidly either by means of seed or division.

**Erysimums**, as far as we know them, are all much alike. They are neat, yellow-flowered crucifers, and do well in a good sandy loam. They are put down for lime in which we grow them, but they seem very hardy, and will probably grow in any soil. The three best I think are *E. pumilum*, *E. rhaeticum*, and *E. rupestre*.

**Frankenia lævis** is a British plant which grows along our south-east coast, and which is commonly known as the Sea Heath. It is surprising to me that a plant reputed to be an inhabitant of salt marshes should adapt itself so well to circumstances one would imagine to be unnatural. With us it forms a beautiful carpet of dark green, remaining in good character the whole year on a dry limestone bank fully exposed to the sun. It is said to be rarely seen in flower. For two months, however, two very fine plants of it were almost covered with sessile, star-shaped, pale rosy flowers resembling those of the Moss Campion (*Silene acaulis*).

**Geranium argenteum**.—This is one of those plants which require a little special treatment as regards soil. I take it that when an alpine reproduces itself from seed, it has found all it requires. We grew it in lime even before we knew it was put down as a lime-loving plant, where it reproduces itself. Unfortunately, however, seedlings vary, and appear to have a tendency to revert to *G. cinereum*. Another misfortune is that it is not capable of division, and must be grown from seeds.

**Erythraea aggregata**.—A very pretty biennial member of the Gentian family with deep rose-coloured flowers opening only when the sun shines. It grows as many more plants would grow by the side of a gravel path, shaking seed thereon, and this summer an ample supply of seedlings for next year's flowering is the result.

**Hedysarum obscurum** may be looked upon as a border plant in dry soils, but under other circumstances it should be grown in the rock garden. It is a leguminous plant which grows about 1½ ft. high, and has neat, pinnate foliage, and attractive, graceful spikes of magenta flowers. Having long, succulent far-penetrating roots, and a good body of soil behind, it may be planted on a ledge, over which it can hang. Thus situated it is seen to good advantage. It is best increased

from seed. Although roots divide like the Milk Vetches and many other Leguminosae, they take considerable time to establish themselves.

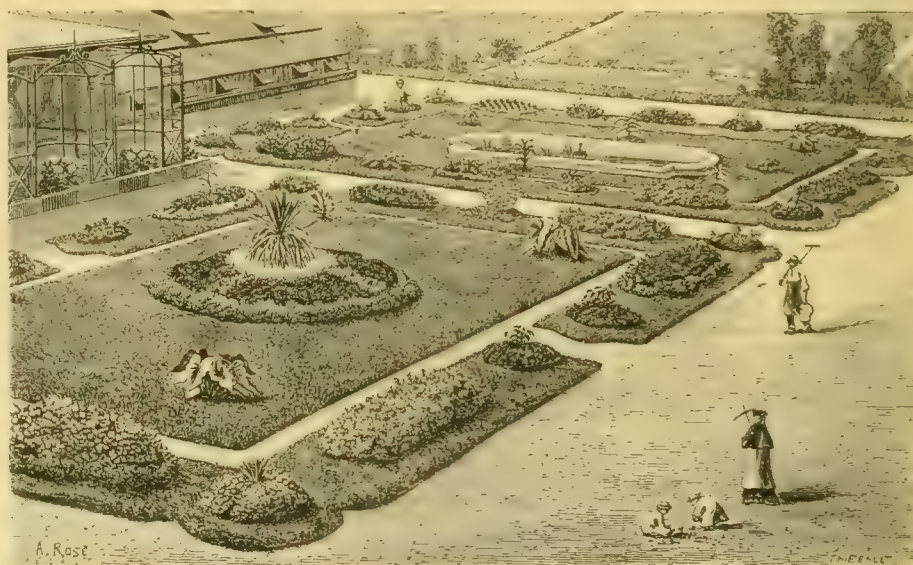
**Houstonia cœrulea** is quite at home in a moist sunny spot, consisting of peat and plenty of sand. A little limestone grit seems to be an advantage, our plants being healthiest where we have used it. T. D. HATFIELD.

#### BEDDING AND FOLIAGE PLANTS.

THE question of how far to modify what we call bedding-out flowers with foliage plants has been often discussed of late years, and thoroughly well illustrated by our best gardeners, both in public and private gardens. There can be no doubt that the use of the freer growing green and graceful fine-leaved plants has done a deal of good in our flower gardens.

In the south of England the variety of plants that one may grow in that way is very great. A number of greenhouse and even of stove plants may be placed in the open air without injury, and even with benefit to themselves. But it

less formal, none the less geometrical because we place green-leaved or graceful plants in the middle of it. A more radical alteration still is required, and must be carried out by our young and thinking men, and that is the abolition of geometry itself, formalism and straight lines, and all the other hateful gyrations which place the art of gardening on a level so much lower than it deserves to occupy. We can have all the variety, all the grace, all the beauty of form, all the glory of colour of which the world of flowers and plants is capable without any of the pattern business which is now the rule. But we can only make much progress in this direction by suppressing the bed as much as possible, by letting the vegetation tell, as it told in that admirable bed in Hyde Park. The plants we must feed and the soil we must enrich, but finicking beds, reminding one of the art on fire-shovels and all other such productions, are not necessary. Let us then, to begin with, adopt a bold, large, and simple type of bed, from which the flowers will spring and make us think more of them than we do of the pattern. R.



Bed in garden with foliaged plants.

wants some discrimination, because some plants which we put out are sickly-looking all the summer and make no good growth. Others always look well, even in the face of storms which injure them somewhat, as, for example, the great Abyssinian Musa, which did so well in Hyde Park during the past season, as was shown in our illustration recently published. Good judgment, in fact, is required in all such cases, and a very careful selection. In cases where the climate may be against the tender tribe of plants a very good selection may be made from hardy subjects, either of young trees cut down and kept in a single-stemmed state, shrubs, or plants like the Yucca. The cut of the bed in Hyde Park (p. 545) showed the bolder way of using fine-leaved plants in masses by themselves, and this, from Andre's "*L'Art des Jardins*," shows a smaller and neater type of plant inserted in the bed itself. While the bolder bed may break the general surface of the garden in a more picturesque manner, so the intimate union of fine-leaved plants with flowers in the beds gives us a pleasing variety.

But it is well to confess that there are errors in the system itself, from which these things cannot save us. A geometrical bed is none the

**Chrysanthemum culture**.—Being interested in Chrysanthemums, I should esteem it a favour if "H. P.," who writes of Japanese varieties (p. 566), would kindly inform me where the best varieties he mentions at the close of his interesting article are obtainable. I wish to get cuttings of *Rosa Bonheur*, *Flambeau*, *Striatum perfectum*, and *Pompon Marie Crozat*. Can I obtain by purchase or otherwise seeds of the Japanese varieties? Do any of the Jersey or Guernsey growers offer seed for sale? A small quantity would suffice for my purpose, but I am anxious that the quality should be prime. I shall also be obliged to any practical grower for exhibition or secretary who will give me what he considers the best set of Chrysanthemum rules as issued to exhibitors. Another question often asked is as to how the fine blooms one sees at shows are dressed or prepared for showing. Will an exhibitor be kind enough to say how it is done?—ANONYMA.

**Opuntia Rafinesquei**.—I purchased a healthy specimen of this in the spring of 1876, and planted it out on rockwork in good loam mixed with plenty of old mortar and broken bricks. It was elevated about 2 ft. above the ground level, on a slope facing due south, and well protected from rude winds by neighbouring stones. It dragged on a miserable existence for two or three years, never flowered, grew a little during the summer,



and was partially reduced to pulp during winter, until it disappeared altogether. It might have succeeded as a half-hardy plant put out in a pot every spring, but as a perfectly hardy plant I have expunged it from my lists.—EDWIN JACKSON, *Llandegai, Bangor*. [The greater rainfall may be against the plant thriving near the western coast; we have proof that it thrives and flowers perfectly in the southern counties.—E. C.]

#### GOLD-LACED POLYANTHUSES.

ON the comparison of young Sunrise with old George IV., red ground flowers, Mr. Brockbank will see that he has silenced Mr. Barlow's pen. It is the reticence of dignity, not defeat. Mr. Brockbank has retired upon ground where an open-hearted generous opponent cannot follow. Complaining that the raiser of Sunrise made the matter personal, which he certainly did not, beyond the actual sense, bearing, and necessity of the case, Mr. Brockbank has committed himself to a very grave and wide personality in suggesting that the fact of Mr. Barlow being acting president of the Northern Branch of the Auricula Society will—if adverse criticism may not override the knowledge and estimate of his own flower—make it impossible for judges to act impartially when Sunrise comes before them. "They will know whose plant it is, and that their chief insists upon its pre-eminence, and quarrel with anyone who ventures to assert the contrary." These are unjust and heartless words to apply in random fashion to our florist judges, who, as a body, are men painfully anxious to do their duty well. They are the light, raw words of inexperience if the writer knows not that awards to our florist flowers are made and trusted, frequently with open written statements whose the flowers are; and that whoever an exhibitor may be, his self-praise, whether it reach judicial ears, or be blown about among competitors, goes for all the commendation it is worth. But the words are grievous in particular as showing that Mr. Brockbank knows not truly the man of whom he writes. He will not meet with a better qualified and more strictly fair disputant; one who as a true florist would more cordially welcome an opinion from a brother florist competent to give it; one less capable of the unworthy line of conduct which Mr. Brockbank, with strange lack of hesitation, lays down as a likely track for Samuel Barlow and his fellow florists.

As regards the two Polyanthus themselves, it is known what Sunrise did in competition with George IV. I should not say that the young variety has yet been seen at its best. It has been exhibited mostly in the more or less rough tufts of its seedling vigour; and we must wait till we can judge it further upon some of those kindly moderate plants with a leading crown on which the true gold-laced Polyanthus is bloomed the best. George IV. in clumps of excessive vigour is an overgrown, coarse flower in points where Sunrise shows refinement and purity. George IV. is among Polyanthus what Fletcher's Ne Plus Ultra (rarely seen now) used to be among grey-edged Auriculas—a most immense flower, but wild and loose in colouring. Old George suffers, when grossly grown, from a kind of inflammatory bleariness between the ground colour and circle of the eye—the "foxiness" of the Auricula with similar fault. I do not think Sunrise would have that fault, however larger in the pip we may yet see it. But let us all wait till time shall show. The model to work for in red-ground Polyanthus is not George IV., but lost Kingfisher, of which I grew the last remembered plant, and in black grounds the true old strain of Cheshire Favourite, the black velvet ground with bright lemon lace and large round lemon eye. F. D. HORNER.

*Kirkby Malzeard, Ripon.*

**Aralia Sieboldi in flower.**—Favoured by an unusually mild autumn, this beautiful foliaged plant has lately been very effectively in flower, every shoot being crowned with a spike of bloom very much like that of a gigantic Ivy; it

is, however, as a fine-foliaged plant that this Aralia is most valuable, for, as it blooms at an inclement part of the season, it is very liable to have its expanding blossoms destroyed by frost. As there are many places where I believe this Aralia might safely be planted out-of-doors were it not for doubts as to its hardiness, I may mention that we have large bushes of it 5 ft. or 6 ft. in diameter that have stood out many years. During the last few winters we have had the thermometer close to zero on several occasions; nevertheless, the Aralias only shed more leaves than usual. Fine bushes of this beautiful plant look extremely well sheltered by large trees and springing direct from the turf, either singly or in groups of three or five. They should be planted where they will get shelter from the north and east, but they should be open to the full rays of the sun from south to west. Any one having large plants in pots or tubs, and wishing to give them a trial, should keep them as cool as possible from this time onward, merely sheltering them from the effects of severe frosts until April or May. Then plant them out in well-broken-up soil, giving good drainage. When such plants as this Aralia and the hardy Fan Palm can be grown out-of-doors without protection the year round, they add quite a tropical feature to gardens well worth a little trouble to secure.—J. G., *Linton*.

**Canna floribunda.**—This is a dwarf species rarely exceeding 18 in. in height, each leafy growth being terminated by a cluster of vivid reddish crimson flowers. After the main stem has flowered for some time—the blossoms gradually opening from below upwards—side branches are developed, by which the flowering season is prolonged. New growths are also continually appearing, so that during the time I have possessed the plant—now about six months—it has rarely been without flowers. During the summer months it blooms freely in an unheated conservatory; in winter a warm house suits it best. As an easily grown and perpetual-blooming kind it has no equal. Mr. Smith, manager for Rodger, McClelland, and Co., of Newry, sent it to me with a good character, but nothing they could well say of it would flatter it as an effective and free-blooming Canna of dwarf habit. Of other flowering Cannas *C. iridiflora* is well spoken of, but it seems rare and difficult to procure, as is also *C. Ehemanni*, which I saw in a London hothouse nearly 8 ft. in height, quite rivaling its ally *Thalia dealbata* as a fine-leaved plant of stately habit.—F. W. B.

**Lychnis alpina.**—Mr. Wilson Robinson, of Whinfell Hall, Cumberland, who is well acquainted with *Lychnis alpina* in its English habitat, tells me that there is a slight difference between the English and Scotch varieties. I do not find this noticed by any of our botanical authorities, and yet it would be very interesting to know if there is the same difference as that which obtains between *L. alpina* and *L. lapponica*. Perhaps some of your botanical readers could compare the specimens in their herbariums. Geologists build up very interesting theories from the occurrences of rare alpine plants such as this on isolated peaks of the older rocks, and if it should be ascertained, for instance, that the *Lychnis alpina* which is found on the Gramscians is the Laplandic, and that which occurs on the Helvellyn range is the variety which occurs on the Alps, a very curious set of inferences might be founded thereupon. Perhaps our kind friends would look into their herbariums and give us an opinion.—BROCKHURST, *Didsbury*.

**Chrysanthemum La Petite Marie.**—Souvenir d'un Ami and St. Mary are the same, and as *La Petite Marie* is stated to be distinct from the first named, it cannot be identical with St. Mary. Souvenir d'un Ami was introduced from France by Mr. Ware, who sent it out under that name, while the same variety was found in some garden by Mr. Cannell, under the name of St. Mary. It is a pretty variety, and has flowers of the purest white. It is one of the smallest of Pompones, and also one of the earliest to flower.—J. D.

**Senecio macroglossus.**—This is mentioned in THE GARDEN as requiring "a moderately warm and dry atmosphere." No doubt it does for producing its rather insignificant little blooms; but if your correspondents will try it out of doors they cannot fail to be pleased with it. I saw it the other day, as bright and green as ever, entirely covering a gigantic garden basket that had been full of Pelargoniums. In mild winters it has outlived the cold, but it is advisable to take cuttings of it in case frost should be severe.—A. P. H.

#### ORCHIDS.

##### ORCHIDS AT CHRISTMAS.

A PEEP just now into the Orchid houses in Mr. Bull's nursery in the King's Road, Chelsea, with their wealth of bright bloom, makes one forget for the moment the dreary aspect of things in the open-air garden. The large number of different kinds of Orchids that may be had in flower at Christmas in a collection such as exists here is quite remarkable. No fewer than 150 distinct species and varieties are in full bloom, and, provided the present weather continues, this number will soon be considerably increased, for a host of others are fast approaching that condition. Cool Orchids are the great attraction, and it would be difficult to imagine a prettier sight than the housefuls of these, their beauty of form and brightness of colour being striking in the highest degree. The way in which Orchids are grouped in this nursery, so different from the confused masses of them which one often sees in other places, also greatly enhances their appearance. For instance, we come upon a charming group of *Odontoglossum crispum* by itself; then one of *Pescatorei*; further on a sheet of bloom of the lovely little *Masdevallia towarensis*, contrasting finely with the brilliancy of the blooms of *M. Harryana*, *Lindeni*, *Veitchi*, *igneae*, and other brightly-coloured species. This massing together of particular kinds gives force as it were to the beauty of the plants, and renders the *tout ensemble* far more effective than it otherwise could have been. The large amount of bloom in this nursery is doubtless due to the houses being well adapted for Orchid culture—the outcome of a good deal of experience in that way—simple in construction withal. The great thing provided for here is light, which Mr. Bull considers, and rightly so, of as much importance as heat and moisture. The size of the pots, too, is a matter of some consideration; here, as a rule, they are remarkably small for the size of the plants, but when we see, as in the case of *Odontoglossums*, the fine plump bulbs which the plants develop, it is evident that over-potting is a mistake. Plenty of air, moisture, and not too much heat are the primary considerations as regards cool house Orchids in this nursery, and that the plants thrive under such conditions may be proved by anyone who cares to see for themselves.

In dealing with the kind of Orchids that flower at Christmas, we will throw them into generic groups, beginning with the largest, the

**Odontoglossums.**—Of these there is a wonderfully fine display considering the season, not only as regards quantity of bloom, but of distinct species and varieties, there being no fewer than thirty in full flower besides the host of forms invariably to be found in large collections like this. Of course the queen of cool-house Orchids, *O. crispum* (Alexandria), is represented in a marvellous variety of ways all more or less beautiful. Now that the forms of this Orchid have become so numerous



they are beginning to be dealt with pretty much in the same manner as a florist does with seminal forms of any popular flower as regards form, texture, colour, and other essential points. For instance, those that have flowers with broad sepals of firm substance, crisped margins, and distinct, well defined markings or none at all are regarded as ideal varieties, which are more valuable than those with narrow sepals of flimsy texture and ill-defined markings. In this collection well-nigh every intermediate gradation may be formed between the two extremes, the finest being *grandiflorum* and *roseum*, both well marked and distinct from the majority of others. The former has flowers considerably above the average in size, with broad sepals, exquisitely crisped at the margins and snow white, while the lip is blotched with a few reddish brown blotches. *Roseum*, as its name implies, has the flowers suffused with a deep rosy purple tinge, rendering them very handsome. Beautiful as is *O. crispum*, it has a dangerous rival in the well-known *O. Pescatorei*, than which few lovelier Orchids exist when seen in the perfection in which it may be found here. *Crispum* may have finer individual blooms, but *Pescatorei* makes up the deficiency in this respect by the large numbers which it bears on its long branched arching stems. A group of this Orchid is the principal attraction in one of the houses, and has been for many weeks past. As in the case of *crispum*, so in that of *Pescatorei* there is a wonderful diversity of forms, from the poor starry to the firmly set blossoms of wax-like texture. Another deservedly popular Orchid is *O. Rossi*, of which we have seldom seen a brighter display than is here, both as regards numbers and variety of forms. In some, such as the *majus* variety, the flower is some 3 in. across with snow white lip and beautifully spotted sepals. In others the lip is suffused with rosy purple, which with the golden yellow crest and rich violet colour is very striking. Another set of species, so to say, in which a strong family likeness prevails is that of the *cirrhosum* type, of which there are numbers in bloom, such as *O. gloriosum*, *Andersonianum*, *odoratum*, *nævium*, and of rarer examples, such as *crocidipterum*, *baphecanthum*, *Chestertoni*, three distinct and charming Orchids that need only to be seen to be appreciated. *Klaboch's* variety of *O. cirrhosum* is a remarkably distinct and beautiful form, the spotting of the flower being much more distinct than that of the ordinary kind, and the yellow crest more conspicuous. The distinct-looking *O. maculatum* and *cordatum* are represented by some fine forms, one in particular being noteworthy on account of the deep rich chocolate-red markings on a yellow ground. The sweet-scented *O. madrense* is an Orchid too little known, a remark which also applies to *Uro-Skinneri*, with flowers having large heart-shaped lips of a deep rosy-pink, mottled with white, and with richly mottled sepals of a chocolate colour. A good variety of this species is a really fine Orchid. *O. bicktonense*, in the same way as the last, but not so fine, is also in flower. A striking illustration of the length of time during which an Orchid will remain in bloom is afforded by a plant of *O. hastilabium*, which has been flowering since last April, having in the interval produced fifty-seven flowers, three or four of which are now in perfection. The soft rosy tint of the lip of this species, and the singular hieroglyphic markings of the sepals commend it to the notice of most people. Of the *O. luteo-purpureum* section there are *Halli*

*leucoglossum*, a new variety with a white lip, *O. tripudians*, and *O. polyxanthum pictum*, the remarkably fine variety shown last week at South Kensington. In a warmer house *O. Roezli* and its lovely white variety are still in flower, as is also the noble-flowered *O. grande*. Two other kinds remain to be noticed, and as they are new they merit special mention. One is

***O. mirandum*.**—A most remarkable plant, totally unlike any other in cultivation with which we are acquainted. It is not what can be called a striking Orchid, but the markings and colour of the flowers at once arrest attention. It has the habit of growth and style of bulb of *O. crispum*, and sends up its flower-spikes in the same arching manner. The flower, about 1½ in. across, has pointed sepals of a Primrose yellow ground colour, upon which are deep irregular blotches of chocolate-red, leaving a margin of yellow. The arrangement of the dark colour in the two lateral sepals is peculiar; about half-way down the sepal is an opening, leaving the yellow ground colour marked only by a thin bar of chocolate about ½ in. long; the pointed lip hangs vertically, and is wholly of a chocolate-red colour. The plant carries a dozen flowers and forms a most striking object. It bears the impress of an intermediate form between *O. nevadense* and *O. Lindleyanum*. Another new species is

***O. decorum*,** which is in the way of *O. gloriosum*, but the flowers have nearly a pure white ground, and the brown spots are much more copious, coming intermediate between *Chestertoni* and *gloriosum*. The lip is pointed and half white, and half brown. It is a neat little plant, bearing its flowers in a more congested form than those of others of the same stamp.

***Masdevallias*.**—These are flowering abundantly, though not really the season for them. Besides those already mentioned and *tovarensis*, of which there are some 300 flower-spikes, some bearing as many as five flowers on a stem, there are others of the showy class, notably *M. ignea*, one of the most useful of winter Orchids, *M. coccinea*, and *M. militaris*, a rare species in the same way as *ignea*, but with flowers of firmer texture, and the colour scarcely so bright a red. The variety of *militaris* named *purpurea* is a pretty plant. Of the *Chimæroid* group there is *M. Wallisi* and the true *M. Chimæra*, with its erect flower-spikes, which already have borne a crop of flowers this year; others are *M. Estradae*, *xanthina*, *melanopus*, *abbreviata*, and *polysticta*, of which latter there is a distinct variety named *caudata*, in which the sepals are attenuated into tail-like appendages of a yellow colour. Of the beautiful *M. Harryana*, we observed two exceptionally fine forms, *cærulescens*, and *purpurea*, both beautiful, the one overlaid with a bluish shade, the other suffused with a purple tint.

***Lælias*.**—The charming little *L. albida*, with its elegant waxy white blossoms on long slender stems drooping from suspended blocks, is at present quite a feature in the Mexican house, as is also the handsome *L. autumnalis*, not the dark red variety (*atrurubens*) that has of late been brought into such prominence, but the variety known as *grandiflora*, a kind with larger flowers than those of the typical form, and intermediate in colour between that and *atrurubens*. It is a most desirable plant, and one by no means plentiful. The tiny growing *Lælias* of the *pumila* type, of which there are some half-dozen kinds in flower,

form of themselves quite an attractive display. The peculiar characteristics belonging to each of the varieties constituting this group are richly marked, and may be readily distinguished when they are, as here, side by side. There is *Dayana*, with a deep purple-crimson labellum, having on its interior surface a series of longitudinal raised furrows, a character seen in none of the others; *marginata* has a rich purple lip with a well defined margin of white; *pumila* has smaller flowers with the colour intensified at the orifice of the labellum; *Pinelli* has a lip of a more uniform tint of purple; while *præstans* has fine large flowers like those of *marginata*, but without the white margin on the labellum. *Lælias* of this section are deservedly becoming favourites, for their flowering season is of long duration; they are easy to manage, and seldom fail to bloom profusely. There will also shortly be a bright display of *L. anceps* and its varieties, among which the chastely beautiful pure white kind (*alba*) and the lovely *Dawsoni* are conspicuous.

***Dendrobiums*.**—Though not the season for this fine family to flower, there is, nevertheless, already a few beautiful species in bloom, including the well-known *Dendrobium nobile*, *formosum giganteum*, *Pierardi*, *chrysanthum*, with its bright orange wreaths amidst bright evergreen foliage; *primulinum giganteum*, a lovely variety, with large primrose-yellow lips; and a richly coloured variety of *D. Wardianum*, represented by an uncommonly fine mass of some dozens of stems, wreathed for two-thirds of their length into blossoms.

***Oncidiums*.**—The prettiest by far among these is a fine variety of *O. cucullatum*, named *grandiflorum*, a charming little plant of dwarf growth, having slender stems supporting a small cluster of blossoms, the lips of which are out of proportion as regards size compared with the sepals. The colour of the lip is a pale rose, copiously spotted with the richest violet of various shades. This variety is much superior to the normal form which is in flower by its side. It is one of the prettiest of cool-house Orchids. The *crispum* type is represented by *Forbesi*, *prætextum*, and *crispum*, in all of which there is a strong family likeness; indeed, the similarity is so strong that it is difficult at first sight to distinguish them; *prætextum* has bars of yellow across the brown sepals, which in well marked varieties are handsome. Other *Oncids* in bloom are *murinum*, *excavatum*, the sweet-scented *tigrinum*, the pretty little *cheiroporum*, *carthagineum*, *Krameri*, *Cavendishi*, and *unguiculatum* with huge spreading branches; while of *O. macranthum* and the *hastiferum* variety there is a thick set of spikes which shortly will make a fine sight.

***Cymbidiums*.**—Though not numerous, this genus is rendered prominent by the chastely beautiful *C. Mastersi*, with its spikes of pure ivory-white flowers set off by graceful foliage. *C. giganteum* is a plant whose worth is underrated; it is, indeed, handsome when well in flower, as is also *Lowianum*, some plants of which have a score or more of buds on a spike.

***Lady's Slippers*** are plentifully in bloom, besides the commoner types, such as *venustum*, *barbatum* and its varieties, *longifolium*, *Roezli*, *Domini*, *insigne* and its varieties, *Maulei* and *albo-marginatum*, *Harrisianum*, *Sedeni*. There are such beautiful kinds as *C. nævium*, *Hookeræ*, the true *urpuratum* (very handsome), the white flowered



Schlimi, pardinum, Argus, besides the rare *C. virens*, a species somewhat in the way of *Hookera*, but distinct in having a grassy green tint over the whole flower, the dorsal sepal being particularly noteworthy in this respect, as it is bright green and faintly striped with white. The mottling of the foliage is not so strongly pronounced as in *Hookera*.

**Other Orchids** in flower include *Calanthe vestita*, both red and the yellow-eyed varieties; *Angraecum sesquipedale*, small plants of which are bearing fine flowers; *Saccolabium Blumei* majus and giganteum, *Maxillaria venusta* with lovely large white flowers; *Cœlia macrostachys*, *Zygopetalum Mackayi* majus and Gautieri, *Lycaste mesochlæna*, a species in the way of *L. lanipes*, but finer; *L. Skinneri* in variety, the ever blooming and bright *Sophranitis grandiflora*, the orange-red *Ada aurantiaca*, one of the most desirable of cool Orchids; *Trichosma suavis*, a pretty species with white blossoms, having lips lined with red and yellow and emitting a delicious aromatic perfume, and the beautiful *Cœlogyne barbata*, whose reputation unhappily stands in danger of becoming seriously damaged judging by what has recently been said about it. W. G.

**Dr. Paterson's Orchids.**—We have to acknowledge the receipt of some graceful photographs showing rich baskets of Orchids recently gathered for presentation to Her Majesty in Dr. Paterson's collection. Mr. Marshall, of York, tells us that for a select collection, Dr. Paterson's is on the whole an excellent one.

—I am sorry if in the account of these plants given in THE GARDEN, I have led "Peregrine" to understand that the sole ventilator used was the cool-house door. On turning to my notes made on the spot, I find the intermediate house, containing *Vandas*, &c., has two large roof-ventilators, both on the north side, that being the less exposed side of the house, and four bottom ventilators. All of these were used through the middle of the day if the external air was not boisterous or below 50°. The reason why I did not lay greater stress on the amount of ventilation was because the last fortnight of October at the Bridge of Allan was extremely mild. A fancy *Dahlia* in the way of *Fanny Sturt* looked quite happy in front of the Royal Hotel; while *Tropæolum canariense* and *Scarlet Runners* were untouched on the wall of a lodging-house on Oct. 30. Others who visit Fernfield House in really cold weather must be left to record the temperatures maintained. Those who recorded that these houses were used as a smoking-room merely told a fact which could be verified any day in the year between the hours of 9 a.m. and 12 a.m. To this I may add that these Orchid houses were used by scores of people as a promenade, debating-room, &c. Next to growing Orchids, Dr. Paterson takes the greatest delight in spreading their cultivation. Few of the wealthy people who visit him leave without being told that their health and future happiness depends in a great measure on their taking to Orchids.—J. C. SPYERS.

—In an account which I wrote some time ago of Dr. Paterson's Orchids I made the statement that gentlemen who had leisure time on their hands, when in search of health at the Bridge of Allan, were in the regular habit of sitting and smoking in Dr. Paterson's hottest Orchid houses, and that I heard a lady exclaim that she thought Orchids had always to be grown in an unpleasantly high temperature. Founding on a false construction put on what Mr. Spyers recently wrote concerning these Orchids, "Peregrine" arrives at more than one erroneous conclusion—first, that what I wrote was "cool," meaning when taken in connection with his other remarks, false, and that Dr.

Paterson has no means of ventilating his hot Orchid houses, except through his cool ones, and therefore the former could not be otherwise than so hot that gentlemen could not sit with comfort in them. This is what, on a fair construction, his language means; and seeing he never saw the houses in question, and knows nothing of the circumstances about which he writes, I do not think it would be wanting in courtesy if I characterised his conduct in this case as decidedly "cool." Every sentence I wrote about Dr. Paterson's Orchids was true, and can be vouched for by hundreds.—WM. THOMSON, *Tweed Vineyard.*]

—"Peregrine" indicates most unmistakably that he doubts the veracity of various writers who have described my Orchids, when they represented that some of my hottest houses were used as a lounge, in which gentlemen sat and smoked during all hours of the day. I beg to assure him that it is his want of knowledge that is at fault; that such is and has always been the case; and as he has tried to twist what Mr. Spyers writes to suit his purpose, I beg to refer him to Mr. Spyers for evidence of what I here state. "Peregrine," by a novel process of reasoning, comes to the conclusion that I have no way of ventilating my houses but through the door. Such is not the case, but the very opposite. I have ample means of ventilation for all my houses, and will be glad to see "Peregrine" here at any time when he will see for himself the system adopted by me and the result.—ALEX. PATERSON, M.D., *Fernfield, Bridge of Allan.*

#### Orchids in flower at Sudbury House, Ham-mersmith.—

<i>Angraecum sesquipedale</i>	<i>Masdevallia tovarensis</i>
<i>Calanthe vestitaluteo-oculata</i>	<i>Veitchi</i>
<i>rubro-oculata</i>	<i>Maxillaria nigrescens</i>
<i>Turneri</i>	<i>picta</i>
<i>Cattleya Harrisoniæ</i>	<i>grandiflora</i>
<i>Cœlogyne speciosa</i>	<i>Odontoglossum Alexandræ</i>
<i>Cymbidium giganteum</i>	<i>delicatum</i>
<i>Mastersi</i>	<i>grandiflorum</i>
<i>sinense</i>	<i>hictenense</i>
<i>Cypripedium barbatum</i>	<i>cirrhosum</i>
<i>Bullenianum</i>	<i>gloriosum</i>
<i>Dayanum</i>	<i>grande</i>
<i>Harrisonianum</i>	<i>Insleyi leopardinum</i>
<i>Hartwegi</i>	<i>pulchellum majus</i>
<i>insigne</i>	<i>Reichenheimi</i>
<i>longifolium</i>	<i>Roezli</i>
<i>niveum</i>	<i>album</i>
<i>Reichenbachianum</i>	<i>Rossi</i>
<i>Sedeni</i>	<i>magnificum</i>
<i>venustum</i>	<i>majus and varieties</i>
<i>purpureum</i>	<i>viridie</i>
<i>villosum</i>	<i>tripudians</i>
<i>Dendrobium bigibbum</i>	<i>Uro-Skinneri</i>
<i>fimbriatum</i>	<i>Oncidium</i>
<i>Epidendrum ciliare</i>	<i>abortivum</i>
<i>Galeandra nivea</i>	<i>Cavendishianum</i>
<i>Ionopsis paniculata</i>	<i>cheiophorum</i>
<i>Lælia albidæ</i>	<i>crispum</i>
<i>anceps</i>	<i>cuticulatum</i>
<i>Barkeri</i>	<i>curtum</i>
<i>autumnalis atro-purpu</i>	<i>flexuosum</i>
<i>rea</i>	<i>Kramerii</i>
<i>Dormanniana</i>	<i>ornithorhynchum</i>
<i>Lycaste grandis</i>	<i>roseum</i>
<i>lanipes</i>	<i>unguiculatum</i>
<i>Skinneri</i>	<i>varicosum Rogersi</i>
<i>alba</i>	<i>Phalenopsis amabilis</i>
<i>delicatissima</i>	<i>grandiflora</i>
<i>Masdevallia Chimera</i>	<i>Schilleriana</i>
<i>corniculata</i>	<i>Rodriguezia secunda</i>
<i>melanopus</i>	<i>Sophranitis grandiflora</i>
<i>ochnodes</i>	<i>Trichopilia laxa</i>
<i>peristria</i>	<i>tortilis alba</i>
<i>polysticta</i>	<i>Vanda tricolor</i>

**Lælia anceps and albidæ.**—These two lovely winter Orchids are now in great beauty in the York Nurseries, there being no fewer than 400 spikes of bloom, which must indeed be a lovely sight. Among the different forms of *anceps* some are pale, in fact almost white, others of an intense rich purple, while there is every intermediate shade represented between the two extremes. The plants, too, of *albidæ* include some very distinct forms, notably one named *rosea* with a bright rose lip and with a flush of pink in the sepals; another called *bella* has the rose colour scarcely so pronounced, but that too is very lovely. There are certainly few more charming Orchids extant than *L. albidæ*, and it is also most useful, being so well suited for cutting, a state in which it lasts an almost incredible length of time in good condition. Pretty as some Orchids may be taken individually,

it is only when they are seen in such numbers as they are here that an adequate idea of their extreme beauty can be obtained. In the case of the lovely little *Odontoglossum membranaceum* (the one with large pure white flowers marked with broken concentric lines of deep purple) we hear that some three or four hundred spikes are developed, which when expanded a few weeks hence will alone be worth the journey to York to see.—W. G.

## SEASONABLE WORK.

### FLOWERS AND PLANTS IN THE HOUSE.

G. J., SURREY.

THE leaves of some old Holly trees are nearly flat and without prickles; twigs of this form, without berries, are useful with many flowers in winter. They do well in all ways with Christmas Roses; the glossy deep green and pure white are charming in colour, and their comparative texture and habit make them suitable companions. The Christmas Rose has a certain stubbornness that makes it difficult to manage with any leafage less stiff than itself, and the stalk is so smooth and cylindrical that the heavy-headed flower is always inclined to swing round to obey the laws of gravity rather than the will of the decorator; therefore the rigid and highly becoming plain-leaved Holly makes a convenient substructure in which the flowers can be firmly fixed without fear of their moving. To some dozen and a half fine flowers so arranged some leaves of common green Hellebore are added; they are in finer condition than their own, and can be better spared. This is a handsome decoration in a large silver punch-bowl. A low, wide-spreading white china basket is well furnished with clusters of berries of *Crataegus pyracantha*, with branchlets of the creeping variegated *Euonymus* that have a pink stain running through their white markings. A tall glass has late-flowering, pale pink Japanese *Chrysanthemums* very happily combined with shoots of *Elæagnus argentea*, a shrub that seems to hold its silvery-backed foliage very late. In pots we have Paris Daisies, a large *Dendrobium nobile*, and the variegated *Bambusa Fortunei*.

## FLORAL DECORATIONS.

J. HUDSON, GUNNERSBURY HOUSE.

FOR the Christmas festivities, an extra supply of cut bloom and small plants in pots will in many cases be required. Of cut flowers, select those that will look well by artificial light; of these, *Euphorbia jacquiniæflora*, *Amaryllis alula* and other varieties, *Centropogon Lucianus*, *Epiphyllums*, *Plumbago rosea*, *Scutellarias*, and the bracts of *Poinsettia* will afford valuable aid in the way of bright colours. In *Eucharis* and Roman Hyacinths we have good white flowers. Nor must white *Azaleas* be forgotten. From the greenhouse there will be obtained the brilliant spikes of *Epacris* and *Heaths*, Chinese *Primulas* and *Salvias*, and occasional stray pieces of such things as *Chorozemas*, *Correas*, and *Eriostemons*. Moreover, *Camellias*, *Lily of the Valley*, and the earliest *Narcissi* are also to be had; while with slight protection, the Christmas Rose may also be made available. Of Orchids, *Calanthe vestita* and *Veitchi* will be valuable, and the same remark applies to *Dendrobium nobile*. These are generally grown in quantity. Effective plants may be found amongst small dwarf *Poinsettias*, *Apelandra aurantiaca* *Roezli*, Roman and other Hyacinths and *Narcissi*, and the earliest Tulips. These with various coloured *Primulas* and a few plants of *Arum Lily* will give a good selection of flowering plants. Of fine foliaged plants there are *Pandanus Veitchi* and *graminifolius*, both valuable, and bright-coloured *Dracenas*, besides many Palms and other plants. Amongst berry-bearers, we have *Solanum capsicastrum*, *Rivina humilis*, *Ardisia crenulata*, and small plants of *Skimmia japonica*, all characteristic of the season. Of choice Evergreens for cut purposes, *Garrya elliptica* is one



of the best, being both novel and striking. All kinds of decorations should be as varied as possible; avoid above all things repetition and formality. Time spent in making formal arrangements of foliage and other things, such as single leaves of *Aucubas* worked in designs, or *Holly* berries threaded, &c., is time wasted that might be better employed. The beautiful shades of colour in the latest kinds of *Vine* leaves render these valuable for the dessert, and the most should be made of them while they last. Leaves of *Berberis Aquifolium* will be useful when the former are over. These are better than *Ivy* leaves or those of *Laurel* or *Aucuba*, all of which give out a somewhat strong odour, unpleasant to many.

#### INDOOR PLANTS.

T. BAINES, SOUTHGATE.

**Anthurium Scherzerianum.**—Young plants of this may be raised from seed in unlimited quantities, but even when the seed obtained is the produce of only the best varieties, the progeny is almost invariably inferior to the parents, and the seedlings in nearly every case differ more or less from each other. Therefore worthless or indifferent forms of this plant are much more plentiful than good ones; consequently, it is well for those who possess a really good variety to give it suitable treatment, as on this the size and character of the flowers greatly depends. This *Anthurium* is never quite at rest, and the leaves and flowers attain a larger size when the warmth in the night is about 48° than if a higher range is maintained. When kept comparatively cool, too, it begins to push up its flowers later in the spring and summer than it otherwise would, a circumstance in itself of importance to many who require a good display at this season. Give plenty of water to the roots until the principal crop of leaves has attained their full size, after which less may be used, but it must not be forgotten that *Anthuriums* are swamp plants, and must never have their roots so dry as many others. The one or two white forms, from which so much was expected, have turned out disappointing, being much inferior to the red kind; they thrive, however, under similar treatment. Brown scale increases extremely fast on these *Aroids*, and where it exists an attempt should be made during the winter to exterminate it. Careful sponging repeated several times over the whole surface of the leaves and stems I have found to be the best remedy. Young plants raised from seed sown during the preceding summer should, as soon as they get a couple of small leaves, be pricked off into shallow pans, well drained, and filled with a mixture of peat, chopped *Sphagnum*, and small crocks or broken charcoal.

**Tuberose.**—The earliest potted roots will have made considerable progress in top growth, even if kept comparatively cool, and may now be subjected to more warmth; when the pots are well filled with roots, and the leaves have made some progress the plants will bear ordinary stove heat, but to prevent their being drawn they should always be kept well up to the glass. More bulbs ought to be potted to give a succession of flowers. One of the peculiarities of *Tuberose* is that by potting at different times, and by regulating the after treatment in the matter of warmth, they can be had in flower over a good portion of the year. An important matter is seeing that the soil is kept in a state that would be too dry for almost any other plant until plenty of roots are made.

**Jasminum gracillimum.**—Those who have obtained a stock of this free winter-blooming plant will find how useful it is for cutting, not alone on account of its desirable white colour and agreeable perfume, but from the fact that its flowers are produced on long slender shoots, which permit of their being cut with a much greater length of stem than the generality of plants that bloom at this season afford. This may appear a matter of little consequence; but where flowers are to be arranged in vases and similar appliances in a loose tasteful manner, it is essential that

some at least should have long stems, as flowers mounted on wires necessarily soon fade, and the mounting, if at all perceptible, is most objectionable. With a sufficient stock of this *Jasminum*, a succession of its flowers can be kept up for some time yet; the first forced plants will furnish cuttings that should be put in to strike as soon as they can be had. It is one of the best new winter flowering plants introduced for some time.

**Clerodendron Balfouri.**—So manageable is this pretty *Clerodendron*, that it may be had in bloom every month in the year if sufficient plants are at hand, and their season of growth and rest so arranged that they are in a condition to start when required. To enable this to be carried out it will, in most cases, be best to employ medium-sized examples, such as can be grown in 10-in. or 11-in. pots. Plants of this *Clerodendron* that were grown and put to rest in the autumn may at once be started in an ordinary stove temperature, giving them, if very dry at the roots, a good soaking by immersing them in tepid water for several hours, without which the centre of the ball is liable to remain dry after the surface has the appearance of being sufficiently moist, and in this condition the growth cannot be strong. If the plants have been well ripened, young shoots will be produced at almost every eye, which will show flowers when they have grown a few joints in length. Unless the roots are extremely cramped in the pots, it is best not to re-pot until after the blooming is over, as a disturbance of the ball along with additional root space is more calculated to produce growth than flowers. An application of manure water once a week will be an advantage when growth has fairly commenced. Independent of the attractive character of the plants when in bloom, the red flowers with their snowy bracts are very pretty in a cut state, but to have them in a condition to last well, when so required the flowering must not be hurried; 60° or 65° at night will be enough. Plants of this *Clerodendron* that are to be kept at rest longer must not be placed where the heat is insufficient; 58° or 60° is a temperature low enough to be safe, as even if dry at the root they perish if too cool.

**Pandanus.**—Suckers of the different varieties of *Pandanus* root freely in a brisk heat at any time when they can be had in suitable condition, that is, when sufficiently solidified. This is a good time to put them in, removing a few of the bottom leaves and potting them singly in small pots in a mixture of loam and sand. Keep them moderately close, but not too moist. The advantage of propagating them now is they get well rooted and in a condition to start into active growth early in spring. These plants are most useful in a small state, their elegant habit of growth particularly adapting them for room or table decoration, or for grouping amongst other things in the stove. The coloured-leaved kinds (*P. Veitchi* and *P. javanicus variegatus*) should have their variegation well brought out. This can best be secured by keeping the plants during the season of active growth in the full light, only shading them slightly in very bright weather. The best kinds for generally use are *P. Vandermeerschii*, *P. reflexus*, *P. Veitchi*, and *P. javanicus variegatus*.

**Lily of the Valley and Solomon's Seal.**—A sufficient quantity of the former should be put in heat once a fortnight, so as to keep up the requisite supply without having more than are wanted to be in bloom at a time. The *Solomon's Seal* is one of the best of all flowers for furnishing vases, its elegant habit of growth being in this way seen to the best advantage.

**Sweet Brier.**—Many like the perfume of this better than that of most other sweet-scented plants. It forces easily taken up and potted in the usual way, but it should be brought on slowly. An intermediate temperature is quite enough for it, for if kept too warm the young leaves are so tender that they flag directly the shoots are cut, a circumstance which detracts much from their use when mixed with cut flowers.

#### ORCHIDS.

J. DOUGLAS, LOXFORD HALL.

**East Indian house.**—It is important at mid-winter to see that the temperature of this house and its atmospheric conditions are congenial to the healthy development of its occupants. It was stated (p. 574) that such *Orchids* as *Phalaenopsis* that have no pseudo-bulbs are apt to suffer first, and since then I have seen an instance of it. The plants to which I allude were in a house, where it is necessary to over-heat the pipes to get up the requisite temperature, and owing to this and the atmosphere being allowed to become too dry, some of the older leaves of *P. grandiflora* became yellow while they should not have done so. This ought and can be avoided by seeing that the pipes are not over-heated, and that the atmosphere is kept uniformly charged with moisture. At one time we grew our plants of *Vanda suavis* and *V. tricolor* in this house, but they did not like such a high temperature in winter; they do much better in the shady part of the *Cattleya* house. If it is necessary to repot these *Vandas*, it should be done as soon as possible after January 1. Indeed it is very desirable to thoroughly inspect every plant in the house at this season, and to pot all that really require it. Those that do not need repotting may be surface-dressed; the pots may be washed, and the plants also may be dipped or washed with soft-soapy water as may be thought best. To cleanse them from dust and scale we merely wash with soapy water, but when thrips have made their home in the axils of the leaves it is necessary to add tobacco water to the soapy water. *Vandas* do best merely potted in a compost of clean *Sphagnum* freely mixed with potsherds and broken charcoal. If the plants are large, the broken pots and charcoal may consist of good sized lumps. Let the pots used be half full of drainage. In repotting these plants it is desirable not to injure the roots; it is better to break the pots than to tear off half the roots for the sake of saving a pot. In some instances it may be best to merely surface-dress them, but before doing this remove any decayed or rotten *Sphagnum* from the roots. After the plants are repotted or re-basketed, it is best to keep a much moister atmosphere than previously, in order that they may get established without losing their leaves. When the larger growing *Vandas* experience a check they are very liable to lose a pair or two of the lower leaves which is very undesirable.

**Cattleya house.**—We have now reached that season of the year when flowers are much valued, and there ought to be a good succession from now until midsummer. The best *Cymbidium* (*C. eburneum*) is now plentiful, and its grand ivory-white flowers last long in beauty. The spikes are showing, but the flowers will not open until those of *C. Mastersi* are over. This fine species is also now in flower. If it is necessary to pot these use good fibrous loam and a little peat. *C. Lowianum* is a new and good species, but its flowers are not so valuable as those of the other two. *Celogyne barbata* is now in flower, but this cannot be recommended for general cultivation. It does not invariably establish itself well, and though the flowers are white its sooty-fringed lip is not effective. *C. cristata* will always be preferred to it, but the flowers of this do not usually open before February. *Odontoglossum pulchellum* is now throwing up its flower-spikes with the young growths, and on that account must not suffer from want of water at the roots. One of the choicest of winter flowering *Cattleyas* (*C. Trianae*) will soon make a gorgeous display, and there are numerous other varieties that flower in the winter months. Many of the *Cattleyas* and other plants in this house may be potted in January, although it is desirable that all *Orchids* should be potted when the new roots begin to start from the base of the last formed pseudo-bulbs; indeed, it should be done before that, as the crisp little rootlets are easily injured. In some cases it is best to repot when the new growths start, but in many instances roots are not emitted until the growths are well developed. One cultivator recommends thinning the bulbs of *Celogyne cristata* when overcrowded,



and as a proof that he is right points to fresh bulbs being formed after two seasons' growth. That is not, however, the way to increase the stock of any Orchid. We have a number of plants of *Ceologne cristata*, and one of them has the bulbs so closely wedged together that there is no room for others to form. Our plan will be to turn the plant out of the pot and divide it into three. In two years we will have three good flowering plants, and not one bulb will be wasted. As I understand your correspondent, he did not thus increase his stock; the point he gained was replacing flowerless bulbs with flowering ones.

**Cool house.**—In this house the many beautiful varieties of *Odontoglossum crispum* (Alexandra) are now either showing for flower or in full beauty. Where there are considerable numbers of plants in bloom it is desirable to keep them in good condition as long as possible. They are easily injured if the atmosphere is overloaded with moisture, and this can be avoided by a little caution as to the time and quantity of water sprinkled about. The best time to pot these and many other species, such as *O. Pescatorei*, *O. cirrhosum*, *O. triumphans*, *O. odoratum*, and others, is when they have done flowering and the next season's growths have started a little. Decayed Sphagnum and peat about the roots does not injure them much if shaken off; and in the case of plants that have become unhealthy owing to too much decayed potting material, the roots may be washed and the plants repotted in fresh material, using rather small pots, as we would rather err on the side of under than over-potting. *Odontoglossum cariniferum*, now in flower, ought to be grown even in small collections of cool Orchids; the sepals and petals are yellowish-brown, rather narrow and pointed, and the lip is white. One of the most useful plants at present in flower in the cool house is *Masdevallia ignea*, the rich orange-scarlet flowers of which are distinct from those of anything else, and if a few plants of it are arranged amongst the *Odontoglossums* they have a good effect. When such plants as these have done flowering they should be allowed a week or two to recover themselves, and then be repotted, divided, or left undisturbed, as may be thought desirable.

## FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

THE mildness of the season is luring plants to destruction unless precautionary measures are taken for their protection, many of them being full of growth and sap, a dangerous condition to be in should severe frost occur. Among the first things to which attention should be directed are Roses, which, being easily excited, are the first to feel the effects of any adverse change. With dwarfs, protection may readily be afforded by giving the beds a heavy mulching of short littery manure, the best for most soils being that from stables, as it contains much strawy matter and lies loose. Slight as the help of such a covering may appear in saving the tops of Roses, it is surprising what an amount of hard frost they will stand with the surface of the ground coated in the way just referred to, and if the uppermost part of the branches should get killed, it matters little so long as the roots and collars are safe, as they are sure then to break again from below. Standards are more difficult to deal with, and the only course open to render them tolerably safe is to have some loosely twisted haybands run round the stock at the point of junction between it and the scion, and also about the lower part of the head. If this is done the weather must be very bad indeed to cause them much harm. Climbing *Devoniensis*, *Maréchal Niel*, *Celine Forestier*, and *Teas* on walls may be protected by having their shoots drawn together in bundles and then covered with dry Fern, over which a few Fir boughs should be tied to keep it in place and afford additional shelter. For *Magnolias*, *Ceanothuses*, *Myrtles*, and similar plants evergreen boughs are generally sufficient, but should frost set in very severe it will be advisable to tack over them a few mats.

**Clematises** being very hardy may be left to take care of themselves, but as they are untidy-looking plants during winter if not attended to, the tops should be thinned out and regulated, and the dead leaves removed, and the shoots then trained and tied neatly to fill vacant parts of the trellis. As all the sorts are fond of a good rich soil, and only flower freely when they can have it to grow in, it is a good plan to remove some of the surface earth about the crowns annually, and give a top-dressing with short rotten manure, which will so stimulate the roots as to impart into the plants renewed vigour. It is the practice with some to cut their Clematises down, but there are few kinds will stand this treatment long, and the only one I know that will bear it with impunity is *C. Jackmani*, which produces plenty of eyes or buds round the crown. A good way of managing the different varieties of Clematis in borders is to have three long iron rods thrust into the ground at about 9 in. apart, around which very coarse rabbit wire should be run, so as to form a sort of cage or guard for each plant, up which guards they will run and send their shoots and leaves through and furnish the whole from top to bottom with their lovely gay-coloured blossoms. For growing on walls near windows I would strongly recommend the deliciously sweet *Lonicera fragrantissima*, which is now full of blossoms, and the odour from these on a fine day pervades the air with a perfume as rich or richer than that from those of the Violet. To flower freely it should have a sunny aspect and a light, dry soil, as then it ripens up its shoots well and the little twiggly portions bloom profusely from every point.

**Lawns and pleasure grounds** will now require the most unremitting attention to keep them in good order, as the turf and walks will need frequent sweeping and heavy rolling to have the surfaces of each smooth and solid, without which walks cannot be used with any degree of comfort or enjoyment. Grass needs constant attention to prevent it from becoming coarse in the blade. In cases where it has died out under trees the best way is to replace it with Ivy, which pegged out regularly over the ground soon covers it, and always has a good and pleasing effect. To give the Ivy a fair start the soil should be lightly broken up and have some rotten manure worked in, but the disturbance must not be deep enough to interfere with the roots of the trees. Where these are of a deciduous nature nothing looks so well under them as *Primroses*, *Snowdrops*, *Crocuses*, and *Daffodils*, which, if the branches are not too low, are just at home, and grow and flower in the freest way possible. Planted now they will be ablaze with colour by-and-by, and form one of the most pleasing features in the whole garden. With the turn of the year near at hand it is high time to be thinking what will be wanted in the bedding way, and to start plants from which cuttings are to be taken, and to sow seeds of such things as *Acacia lophantha* and *Cannas*, that are so long in germinating. A brisk heat will soon set moving *Coleus*, *Iresines*, and *Alternantheras*, and a gentle warmth will be sufficient to excite *Verbenas*, *Ageratums*, and *Heliotropes*, as well as *Pelargoniums*, the variegated and tricolor section of which, after being subjected to its influence, strike well in the spring. *Pansies*, *Violas*, *Calceolarias*, *Pentstemons*, and the like in cold frames should have plenty of air on all favourable occasions, as free ventilation prevents damping and keeps the plants sturdy and strong.

## PROPAGATING.

WHERE cuttings of various trees and shrubs are put in the open ground they may be prepared during weather in which it is impossible to carry on out-door operations. Where this practice is intended to be followed they should be taken off when the weather is favourable, tied roughly in bundles, and laid in closely together; then, if hard frost sets in they can easily be covered with a mat or two, which will keep them from becoming fixed in the ground. Treated thus they are

ready for use at any time; for instance, if the day is wet a few bundles can be taken under cover and made into cuttings ready for insertion, then they should be sorted and tied up into bunches of fifty or one hundred, and again laid in till all are finished, when they should be permanently put in according to directions given in *THE GARDEN* a few weeks ago. Great numbers of subjects strike readily in this way—among others the *Weigelas*, *Privets*, *Lilacs*, *Hibiscus*, *Philadelphus*, and of course *Willows*, *Poplars*, and *Alders*. I find *Maule's Pyrus* (*P. Maulei*) to strike almost as freely as a Willow, much more so than its relative *Pyrus* or *Cydonia japonica*. Again, many things can be increased by means of suckers, which, if removed carefully, soon make good plants, and root, cuttings may in some cases be employed. All the larger kinds of *Rhus* may be propagated in this way, besides the *Koelreuteria*, the *Ailantus*, and the *Robinias*. Concerning the latter, as most specimens of the various kinds are grafted on the common false *Acacia*, it is necessary to take the cuttings from plants on their own roots. Advantage should be taken of any transplanting that may be going on to secure roots for cuttings, if wanted. They should be cut up into lengths of from 4 in. to 6 in., and may be of any size provided they are not too small. As a rule it is not advisable to use roots smaller than a penholder, that is to say, for outdoor propagation, though if protected, of course smaller material may be used. The cuttings when ready should be put in thickly in an upright position, the top being about 1 in. or 1½ in. below the surface. Good light, sandy soil will suit them, and the position should be somewhat sheltered from the rays of the sun and from drying winds, and during summer a slight mulching of decaying leaves will be an advantage in assisting to keep the soil moist. A great many will no doubt die, but as they can be put in very thickly, the loss is not so apparent.

A good method of increasing many shrubs, and one that does away with much of the attention bestowed upon cuttings, is this: if the shrub to be propagated is not too large, it may be transplanted much deeper than before, in order to induce the branches to emit roots, which they often will do freely, and when sufficiently rooted they may be detached from the parent and planted separately. This system may be employed for a great number of plants, being, in fact, but a form of layering. In this way *Spiraeas*, *Lilacs*, *Ribes*, many *Roses*, *Berberis*, and numbers of others may be successfully treated, and also that fine plant when forced, *Staphylea colchica*, which may be propagated freely in this way. Layering proper may be performed at any time; bend the branch over and cover it with about 6 in. of soil, pegging it securely in its place, but before doing so make an incision on the under side, which will be kept open when the branch is bent, and by partly arresting the flow of the sap will hasten the formation of roots. T.

## FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Pines.**—Where there is a good stock of properly rested plants to fall back upon, another batch of promising *Queens* and a few *Rothschilds* may be selected and placed in a light compartment where they can have the benefit of a bottom-heat of 85° to 90° from fire-heat and fermenting material combined, and a top-heat of 65° to 70° by night, with a rise of 5° to 10° by day. It is not always advisable to take the largest plants for early work, as many of these will make a growth before they start and give the finest fruit of the season later on, while smaller plants with short stiff leaves, stout stems, and open hearts, will be most likely to throw up quickly and finish off perfect fruit. Follow directions laid down for the management of the first batch with regard to watering and syringing, using a little clarified liquid in the water for stimulating the roots and charging the atmosphere with ammonia by damping all cool surfaces on fine days, but guard against producing hot steam by forcing it against



the pipes when hard firing is necessary. Continue to remove plants bodily from the fruiting house as the Pines show signs of changing colour, and place them near the pipes in a dry, warm Muscat house, or, better still, a small compartment reserved for them. From this time forward this timely removal is of the greatest importance, as it admits of full justice being done to late "shows," while the fruit so ripened will keep for many weeks after it is fit for use. For keeping up a steady family supply of high-class fruit, a few plants of the old Jamaica, Montserrat, and Lord Carington should receive special treatment for starting in August and September, and as stock of these delicious kinds is most plentiful in the early spring, those who have allowed their plants to die out should look up their friends of the old school for a fresh supply of suckers.

**Succession houses.**—By this time the top and bottom heats will have been reduced to the lowest possible point consistent with safety, and it will be well to keep the plants as quiet as possible until an increase in the length of days becomes perceptible, when sound, healthy roots will force up growth greatly superior to that which it is possible to obtain at this dull, dead season. There are, of course, exceptions to this rule, and where a winter growth is imperative, light span-roofed pits should be used; the plants should be kept close to the glass and carefully covered every night. Although the supply of water needed by the plants will not be heavy, a regular system of looking them over once a week should be adhered to.

**Strawberries.**—Where early Strawberry forcing is carried on under difficulties, and the shelves in early Peach houses and vineries are already occupied, a light, well ventilated Melon pit may be fitted up with shelves and filled with plants which have been properly rested, cleansed, and top-dressed with stiff loam and rich rotten manure. Cleanliness in all forcing operations being an important item, see that the pots are washed and the drainage clear. Water with clean lime water to eradicate worms, place a body of fermenting leaves beneath the stage, but clear of the pots, and commence forcing at a temperature ranging from 45° to 50° at night, and 50° to 56° by day, when the weather is mild and open. To prevent the foliage from becoming "drawn" force with a chink of air; apply covering in preference to fire-heat on cold nights, and make up for lost time by shutting up for a few hours with solar heat and moisture on bright sunny days.

**Peaches.**—Where three or four houses are forced annually, the second should be ready for closing by the 1st of January, when directions given for the management of the early trees will apply. If the roots, as those of all early forced trees should be, are inside, great care should be observed in keeping them well supplied with water, as many promising crops are injured by allowing the internal roots to receive a check before forcing is commenced, and it invariably happens that the most prominent buds are the first to fall, when it is too late to remedy the mischief. Many people entertain an erroneous idea that the roots of a resting Peach tree may become dust-dry; but this is a mistake, as may be proved by making examination of an outdoor tree which has been lifted and replanted in October, and it will be found that an abundance of new roots are actively working in the new compost where it has had the benefit of several inches of rain. Young beginners, for whose assistance these lines are written, will do well to bear in mind that timely attention to the roots of internal trees is of the greatest importance, and if the borders are composed of good calcareous loam, placed upon ample drainage, there is less danger to be apprehended from giving too much than too little water through the early winter months.

**Early trees** started in November will now be swelling their buds, and the weather continuing mild and fine, a minimum temperature of 45° to 50° may be indulged in, but nothing will be gained

by undue haste, particularly by night until after the turn of the year, as Peaches which are allowed to open a strong bloom in a low [temperature always set better than others which are exhausted by the time that critical stage is reached. On fine sunny days run up to 60° or 65° with air. Husband fire heat by closing early, and syringe regularly until the blossoms begin to unfold.

**Orchard house.**—Growers of pot trees who intend to commence forcing a portion of their stock about the first week in January should now select the most suitable kinds which were potted immediately after the fruit was gathered. A process of cleaning the house will of course precede their introduction, and when this important part of the work is complete examine each tree separately, cut back strong growths to a triple bud, thin out the centres, and wash carefully with a solution of Gishurst compound, 6 oz. to 8 oz. to the gallon of water; place each tree in position, give the roots a good soaking with tepid water, and shut up the house without fire-heat. If the house is conveniently arranged for the introduction of fermenting leaves a night temperature of 40° to 45° can easily be maintained without fire-heat, and favourable external conditions will give a rise of 10° by day, quite sufficient until the buds begin to swell, when the pipes may be gently warmed every morning. Syringe with tepid water when the temperature begins to rise, ventilate at 55°, and syringe again after closing, when there is a fair chance of the buds becoming dry before nightfall. When external moisture does not favour a second use of the syringe, turn the fermenting material and damp all available cool surfaces. Early batches started in November, now sufficiently advanced to admit of a rise, may receive treatment similar to that recommended for the first Peach house, always provided the advance is made during the hours of daylight and the trees are allowed to return to a state of rest at night. If Strawberries have been introduced keep the foliage well syringed, and fumigate the house before the flowers on the most forward trees begin to expand.

#### KITCHEN GARDEN.

R. GILBERT, BURGHEY.

We are just now making up spring beds for Mushrooms for use in April and May, all being outside on the ridge principle. We are also lifting Jerusalem Artichokes, which are not grown so much as they deserve to be; usually they occupy out-of-the-way corners where no notice is taken of them, whereas here we replant them annually, fine clear tubers, not coarse and large, being always the result. A sandy loam and no manure suits them admirably. The land which we propose to sow with Onions in March is now dug, and we intend giving it a good dressing of fowl's manure mixed with sand before sowing; a cultivator is used to mix it with the soil. I never thin my Onion crops, as many small Onions are wanted, and I find a middle-sized Onion the best this year. Parsnips we always trench the land for, but never use any manure; they grow so coarse and forked if manure is used; but a top-dressing of soot when growing is very beneficial. The manure and leaves for beds for forcing Potatoes and Carrots are now being made ready and well worked. I find that well turning the heaps of this material is half the battle, as the heat lasts so much longer. The Potatoes now all in boxes in a cool vinery are showing their green tops healthy and strong. By removing the tubers into frames numbers of root-lets get broken, an advantage as regards inducing the plants to form tubers quickly, and overgrowth in the tops is also thereby checked. French Beans are doing well, but we made a mistake in substituting Sir J. Paxton for Osborn's, the very prince of a French Bean for forcing. The aim should be to keep them short and stubby. We have some pots of Osborn which just now look like specimen plants for decoration. Among Cucumbers Montrose two seedlings (Nos. 1 and 2) and Telegraph are the best. Our plants are fruiting and growing well. We keep the house at 65° at night, and

on very cold nights we cover with a single mat, which makes 5° degrees difference in the temperature.

**Best Lillies for pots.**—In reply to "Flora" (p. 584) I would say that undoubtedly the best Lillies for pots are giganteum, Browni, longiflorum, Wilsoni, neilgherrense, auratum, the varieties of speciosum, Batemannæ, Leichtlini, polyphyllum, tenuifolium, californicum, pulchellum, canadense rubrum, and canadense flavum; others may be added, but these are the best for several reasons, the last, though not least, being the little difficulty attending their cultivation provided a start is made with strong bulbs. A very good soil for them is a mixture of two parts fibrous peat, one part loam, with a good sprinkling of coarse sand. Large pots should be used and good drainage. When potted let them stand out-of-doors, or in a pit plunged in ashes up to the rim. If for an ordinary greenhouse do not bring them in until the flower-buds show themselves, as they are likely to get drawn, but if there is an orchard house with plenty of ventilation, they may be grown there all together successfully.—F. H.

**Protecting outdoor plants.**—This morning (Dec. 12) we had here 12° of frost. It is generally admitted that it is not so much the frost that kills half-hardy plants as the bursting of the cells of the cellular tissue from the rapid effect of immediate sunshine. This never takes place when the thaw is gradual. Acting on this principle, I spread a lot of comparatively fine dry coal ashes over a number of outdoor plants of doubtful hardiness, or that I considered might be affected, such as small pot Kalmias and Veronicas of sorts among shrubs, and over the cut-down stems of Fuchsias for which I always keep a few beds; Hollyhocks, and some of the better kinds of Carnations, Pansies, and especially the show and, fancy kinds—the very good sorts are in frames, and this is true also of Gold-laced Polyanthes and the better kinds of alpine Auriculas; some outdoor Chrysanthemums I may want offsets from. I did not forget either. Manure of any kind would be unsightly, and I had not got my favourite leaf-mould.—W. J. M., Clonmel.

**Tobacco.**—*La Presse Medicale Belge* says: "Every year in Thuringia there is consumed a thousand tons of Beet leaves transformed into Tobacco. The same leaves, as well as those of Chicory and of the Cabbage, undergo the same metamorphosis at Madebourg and in the Palatinate. Vevay cigars are of the same."

**The genus Ribes.**—Is there such a thing as a monograph of this genus? Or where can I get detailed information upon its members, particularly the ornamental ones? Is there such a species as *Ribes palmatum*? I cannot find it in the ordinary lists, though I believe species are sometimes re-named.—PYRUS.

**Clematis graveolens.**—How should seed of this be treated when sown? in heat or not?—A. C. E.

**Naming plants and fruits.**—Four plants, fruits, or flowers only can be named at one time, and this only when good specimens are sent. Readers who desire our help in naming Apples or Pears will kindly bear in mind that several specimens in different stages of colour and size of the same kind greatly assist in its determination. Local varieties should be named by local growers, and are often only known to them. We can only undertake to name four varieties at a time, and these only when the above condition is observed. Unpaid parcels not received.

**Names of plants.**—Mrs. W., *Halsanger*.—*Calystegia sylvestris*.—E. H. H., *Cotoneaster Simonsi*.—Mrs. O., *Daventry*.—*Catananche carulea* vars. —C. R., *Ipswich*.—*Adiantum scutum*.—Dr. Harris.—*Saxifraga hypnoides* var. —F. Geeson. —Probably *Rhododendron Russellianum*.

**Packing Lily bulbs.**—W. S. F. —The best way to pack Indian bulbs for transit to this country is in charcoal dust.—F. H.

**Books.**—*Learner*.—Paxton's Botanical Dictionary and last edition of Johnstone's Agricultural Chemistry.

**The "Floral Magazine."**—We learn that this periodical expires with the present year. It has had a long and useful existence.



No. 528. SATURDAY, DEC. 31, 1881. Vol. XX.

"This is an Art  
Which does mend Nature: change it rather: but  
THE ART ITSELF IS NATURE."—Shakespeare.

## GARDEN EXPENDITURE.

SOME time ago I was called upon to arbitrate between a gardener and his employer in reference to this subject, and what struck me most in the course of the correspondence was the misconception that appeared to exist as regards the cost and necessities of gardening; and as I had no reason to suppose that my correspondents were exceptions to the rule, I venture to trouble you with some observations on this subject in the belief that they may be useful to both employers and their gardeners. In the first place, the misfortune belonging to private gardens is that a correct account is seldom kept of the expenditure and income, and where such an account is kept the gentleman or his agent seldom pays much attention to it. It is pooh-pooed on the principle, I suppose, that the garden has to be paid for, and the less said about it the better. This is a mistake, however, and an injustice to the gardener more than to any one else. His business is, of course, to grow such things as a private establishment needs—luxuries most of them may be—about which his employer may not care to be troubled, but everything that the gardener produces does cost money; and so long as the thing produced is what the proprietor wants, the garden ought to be credited with it just as much as the home farm which produces Corn and Potatoes, &c. Indeed, it is not at all an uncommon thing for the home farm and the garden to be compared, to the disadvantage of the latter; but we should like to discover a farm connected with any home establishment which pays as well as any ordinarily well managed garden. I never knew of one yet. It is for proprietors to say how large their gardens should be, and what expense and labour shall be bestowed upon the furnishing and keeping of them, but they ought to realise at the outset that hosts, amounting to many thousands of plants for flower gardening, conservatory, and house decoration, &c., cannot be grown without a proportionate outlay sometimes on a liberal scale. Employers, for example, seldom trouble themselves to enquire where the thousands of bedding and other plants come from that fill their parterres and borders during the summer months alone, but if their gardens had to be furnished by contract to their taste and wishes by some nurseryman, and they found that it would cost perhaps £400 or £500 simply to fill the beds of an ordinary flower garden, they would probably see the matter in another aspect. A moderate sized garden will absorb twenty or thirty thousand plants, common and valuable, and we question if any one would contract to supply the same to the buyer's selection at a less cost than £10 or £20 per thousand, and this does not take into account the keeping of the garden, but only the plants and planting of it. Take another example. We know one gentleman who pays a London furnisher £150 for furnishing his front hall and glass porch attached to his London mansion for three months during the season, and for which only common plants are used. The same gentleman's gardener supplies all the cut flowers, many of them valuable Orchids, during the same period, has to be on the alert to supply the country mansion every other month of the year, if necessary, with cut flowers and plants on an extensive scale, furnish conservatories and greenhouses, and keep them gay, which, if he

was allowed to charge for at the same rate as the London furnisher, or any other, would represent a sum of money greater than is incurred in keeping up kitchen gardens, pleasure grounds, flower gardens, and houses together during the whole year. Such facts could be vouched for in many instances, and yet nurserymen who furnish houses say their charges are the lowest they can afford to charge. What is charged for in London is taken no account of at home.

There is only one way of comparing the cost and returns of a private garden, and that is by the market price of the produce, and although gardeners in private places have to grow and keep in hand many things in the shape of vegetables, flowers, and fruits not wanted in a market garden, there is, perhaps, nothing they would like better than to have the chance of setting the value of their productions against the expenditure. Their crops of fruit would always fetch their value, and so would vegetables and flowers, but for much of the work done in a garden, such as cutting Grass, a costly work, constant cleaning, and keeping, attending to the house, and many other duties connected with a private garden, although representing work that has to be done, and is done, the gardener has nothing to show. The multitudinous duties involved in a garden where a vast number of different species of plants are grown, all requiring special care, and the exigencies of the demands of the employer and his subordinates, from his agent to his cook, housekeeper, and butler, entail an amount of expense and trouble that the mere cultivator for market purposes knows nothing of. Then the gardener is as often as otherwise victimised by the other departments of the estate. If he could have his extra work and repairs, &c., done by contract, he would know what they cost, but he is compelled to employ the workmen of the estate, who are rarely conscientious valuers of their time, work, or materials, and we have known the grossest imposition practised against the one department in order to make the other appear to pay. The utmost looseness exists on gentlemen's estates in this respect, and in many instances the gardener never knows what charges are placed against him by estate agents. The only extenuating circumstance connected with such matters is that proprietors know pretty well how things are, and pay little or no attention to such charges. The proper way for a gardener to do under such circumstances is to repudiate all accounts that have not been submitted to and signed by him before being passed.

The extension of fruit culture under glass has tended to increase the cost of gardening a good deal, but it has increased the profits also, *i.e.*, when the glass is utilised to its fullest extent, but in houses for plants such as Orchids, now becoming so popular and necessary that no lady or gentleman likes to confess being unacquainted with them, the case is different, for managed as they should be, and much attention they need, they increase the expenses very considerably without showing any substantial return on the face of it, save the rare blossoms now and then produced. The plants increase in value of course every year, but this, like many other improving subjects in a garden, is never taken into account. In estimating the value of garden produce, every plant raised annually, the increase in others, all vegetables and all fruit crops not necessarily and actually used on the establishment, but produced by order or in anticipation of its needs, should be valued at fair market prices, and all the keeping and dressing of the garden should be credited at their full value.

AN OCCASIONAL VALUER.

## MUSHROOMS OUT OF DOORS IN WINTER.

I was surprised to see (p. 600) that Mr. Muir considered it impossible for Mushrooms to be grown in winter, as described by me (p. 524), I expected some difference of opinion as regards the mode of culture, but none as to the result. In Covent Garden Market, no matter what the weather may be, there is always plenty of Mushrooms to be seen on the stands of many market gardeners who have no kind of shelter whatever under which to grow them. Therefore I do not claim to be singular in growing them in winter. I can safely say, as a fact, that I have only missed gathering one week during the last seven winters, and that was the week ending January 22 last. This occurred only because there was such a quantity of snow to remove before I could get at the Mushrooms that I did not attempt to disturb it. In the six following weeks I gathered over 400 lbs., averaging over 66 lbs. per week, and that in probably the worst winter experienced for many years. I have never stated that they receive no check in opening beds in such weather. But by carefully performing the operation, and adding a little more covering they soon recover, and generally the extra price will compensate for the extra trouble. These facts and figures can be easily verified. My principal object in writing the article published in THE GARDEN (p. 524) was to let young and inexperienced growers know that there is really no mystery attached to Mushroom growing, as is generally supposed, but that they are as easily grown and as remunerative as any other crop. J. F. BARTER.

—The following facts, kindly supplied to me by Mr. Barter in a correspondence which I had with him on Mushroom growing out-of-doors will, I hope, go a long way to convince Mr. Muir that he is wrong in supposing that Mushrooms cannot be successfully grown out-of-doors in winter. Mr. Barter has grown Mushrooms for market out-of-doors, more or less, for the past fifteen years. From October, 1880, to May, 1881, he grew the enormous weight of two tons, and only missed picking one week during the severe weather which prevailed during that season. About two months ago, when I last heard from him, he had then sent to market this autumn about 600 lbs. These facts, I take it, are strong witnesses in favour of the system.

Drayton Manor Gardens. OWEN THOMAS.

MUSHROOMS IN CELLARS.—As a deal has lately been written about Mushroom culture, a note of what is done with Mushrooms in cellars at Gunnersbury House, Acton, may be of interest. In the grounds is a capacious deep cellar, formerly attached to an old mansion, and some years ago it occurred to Mr. Hudson, the gardener, that it would be a capital place in which to cultivate Mushrooms in a manner similar to that carried on in the subterranean caves about Paris. He successfully carried out his purpose, and since then has rarely been without good crops of Mushrooms throughout the winter. We saw the beds the other day, and were surprised at the enormous crop produced of all sizes, from those as small as Peas to full-sized Mushrooms, all thickly studded over the bed. No artificial heat, beyond that developed by the fermenting material for making the bed, is employed, and this is found quite sufficient in ordinary winters to keep the temperature up to between 50° and 60°. The day we were there was raw and cold, yet the temperature of the cellar was 53°. This is a most profitable way of utilising old cellars and the like, for, with a good supply of material from the stable and trustworthy spawn, a continuous supply of this esculent may be maintained throughout the year without the costly appliances usually considered indispensable.—W. G.



## ENGLISH NAMES.

NOT at all a bad argument for "English plant names" that in *THE GARDEN* (p. 580). Apart from their use as English names *per se*, they are of the utmost value as an assistance at times when the Latin or Greek name utterly fails. Fancy a conversation about plants in any average society if Latin or Greek names are to be used. Could any twaddle be more pedantic, and, worse still, be more unintelligible to forty-nine out of fifty listeners? I am putting English name at top of label here and Latin name below for these reasons, and find many people appreciate this innovation. Fight against it, as certainly this view of the question must be generally adopted in all English-speaking lands ere long. Even French, Italian, German, Spanish, Irish, Bretons, Malays, Maories, Papuans, Cingalese, and all native races have native names for their plants and animals indigenous or introduced. Why is this right denied to Englishmen?

F. W. BURBIDGE.

*College Botanic Garden.*

[It is denied to Englishmen by dry-as-dust only, who think the world ought to swallow their particular jargon. They seldom are clear seeing enough to note that the world, in a broad sense, thinks little of either them or their doings, and when it does so, only to laugh at them. There are few more instructive examples of the narrow way in which science has been nurtured with us than that vernacular names, denied to us by some pedantic people—we are sorry to include among them horticulturists—are in common use in France and Germany, and get often the *first place* in the books of these leading scientific nations. But with us some are so blind to their own interest in the matter that they even grumble when both names are given—the Latin as well as the English. It is difficult to estimate the great harm that has been done to horticulture by the use of strange names only in our gardens. We do not deny the need of a Latin nomenclature and the services it has rendered; it is the spirit which objects to the use of names in our own tongue wherever possible that seems to us so injurious in barring up a fair gate to knowledge with pedantry of the poorest sort.]

## SOWING SEEDS OF BULBOUS PLANTS.

If growers of bulbs from seed now and then find a seed-pan to fail the cause is often attributed to improper treatment, or to their having been sown at an unsuitable time; the cause, however, often is imperfect maturity of the seed shell (testa). Seeds of the genera *Allium*, *Bomarea*, *Chionodoxa*, *Colchicum*, *Crocus*, *Erythronium*, *Galanthus*, *Hyaacinthus*, *Milla*, *Montbretia*, *Muscari*, *Narcissus*, *Ornithogalum*, *Puschkinia*, *Romulea*, *Scilla*, *Sparaxis*, *Sternbergia*, *Brodiaea*, *Tecophylaea*, *Tropeolum*, *Xiphion*, and also many species of *Iris* have a comparatively hard shell, and after collection from the ripe pods should be exposed from one to three weeks to the influence of the air in an appropriate place—say a shaded greenhouse; by this exposure the seed shell becomes thoroughly hard, and there is also probably a chemical change going on in the albumen, both conditions being necessary to ensure success. After that the seeds must be sown at once and kept moderately moist, neither exposed to wet nor drought, and also moderately shaded. If sown in pans and housed a part will lift the soil during winter, and the rest will come up in spring; some, like *Colchicum*, will, however, form an exception, and will take from two to three years to germinate, growing in the third year most freely. An experience of many years has taught

me this lesson, and I find that if the ripening process just alluded to is not observed most seeds of the kind just referred to will rot.

*Baden-Baden.*

MAX LEICHTLIN.

## EDITOR'S TABLE.

**VANDA FURVA.**—This rare Orchid comes from Mr. Moore, of Glasnevin, who considers it to be undeservedly cast aside for others of a more showy character. It is one of the most lovely flowers we have seen, though some might think it sombre in colour who do not get beyond what are called showy or pretty colours; but apart from these there is a world of beauty to be yet opened in the delicate low colours. We by no means agree with the school who claim that all plants are equally interesting. If the truth must be admitted there are many colours, even in garden plants, that are not pleasant, not good, as there are many plants that possess abominable odours and other qualities which offend; but there can be no doubt as to the existence of beautiful colours which are not thought much of by the gardening fraternity. This *Vanda furva* would please many people who really know what colour means, and is a most exquisite example of delicate brown. We hope it may easily be grown and not difficult to obtain.

**CELOSIAS IN WINTER.**—A welcome example of these from Margam Park, quite glossy in their satiny-crimson and yellow. They are plants we did not think of in connection with mid-winter, but if, as in this case, they could be well preserved till that season they would be a useful aid for the winter conservatory. They are also free and well broken plants which do not easily take the evidently much sought pudding form, ugly as that is to many people.

**CRINUM AMABILE.**—Flowers of this, one of the noblest of *Crinums*, comes from Mr. Latham, Botanical Gardens, Birmingham, who says that there is a plant there bearing an umbel, consisting of 22 flowers. It is a fine stove plant for flowering in mid-winter and easy to cultivate withal. The blossom, about 9 in. long, has narrow ribbon-like petals, dark crimson on the outer surface, white on the inner, with a broad band of crimson running through the centre. Such a showy flower is worth a place in warm houses, as are all others of the same genus.

**A CRIMSON BOTTLE BRUSH.**—A very bright and pretty Australian bush, with lovely crimson flowers and pretty Myrtle-like leaves in rows. Well grown and open in form (not formal), this would be a charming plant for mid-winter. We strongly recommend it to those who wish to leave the beaten path in the greenhouse. Its name is *Beaufortia decussata*. From Glasnevin.

**PESCATORIA KLABOCHORUM.**—One of the handsomest Orchids that have been sent of late comes from Mr. J. Dunn, who sends it from Col. Gascoigne's garden, Portlington, Leeds. There are two forms sent, and one is by far the finest we have yet seen, measuring fully  $3\frac{1}{2}$  in. in diameter, with sepals  $1\frac{1}{2}$  in. wide. The sepals and petals are pure waxy white tipped with large blotches of rich crimson-purple in a most elegant way. The large lip is, as it were, scooped out, and is covered with purple warts on a white ground, while beyond is a horse-shoe shaped row of crimson and white furrows, and the upright column is crimson-purple also. A very singular and fine Orchid, which we hope may be easy of culture and propagation, so that

it may be often seen in others besides the best collections.

**THE CHRISTMAS ROSE.**—The larger species (*H. altifolius*), in its finest development, charmingly clustered in claret coloured leaves of the evergreen Barberry, a spray of *Cotoneaster*, a leaf or two of the common *Polypody*, and a few bits of *Laurustinus* in flower, go to make a beautiful and seasonable bouquet, gathered from the garden at Munstead. Nothing more welcome could be gathered anywhere. This noble Christmas Rose is well worth the slight trouble it requires, being hardy and free as benefits a Bosnian.

**A WINTER NOSEGAY.**—Another charming bunch of winter flowers from Miss Jekyll made up of the small and ordinary Christmas Rose, the brownish leaves of Ivy, a truss of *Pyra-cantha*, a deep fringe of the large-leaved *Saxifrage*, and a few bits of the small silvery *Euonymus* and *Laurustinus*—all open garden materials easily got. Our worst season gives us from a fairly stored outdoor garden much that a tasteful person can make beautiful use of.

**TRICHINIUM MANGLESII.**—This pretty Australian plant little seen by us in winter comes from Mr. Moore, at Glasnevin, and in very good flower. If it could be well and regularly grown it would be welcome at this season, but it has never taken very kindly to our gardens.

## ORCHIDS.

## CELOGYNE BARBATA.

I WAS not a little surprised to observe the way in which Mr. Douglas attempted to condemn this beautiful new Orchid in the pages of a contemporary. He speaks of it as "an Orchid to be avoided." If it had been to the stinking *Bolbophyllum* Beccari or an inconspicuous *Pleurothallis* he applied this remark, one would not have wondered, but to stamp this Orchid, which was accorded the highest honour by the Royal Horticultural Society at its last meeting, with such an epithet is a little too bad, especially having regard to the fact that the writer was one of the committee that adjudicated upon the plant's merit. Nine persons out of ten would call it beautiful, notwithstanding its "sooty" labellum, which I think contrasts strikingly with the chaste whiteness of the petals and sepals. It is, moreover, different in habit of growth from that of the other species, a fact which makes it interesting. About its culture few in this country can speak with any degree of certainty, as the plant has not yet been long enough under trial. It is, however, grown in several collections that I have lately visited, and though the plants may have been recently imported they looked in the best of health. There is no accounting for the vagaries of individual taste, and each should be allowed to have his own way in such matters, but a writer should remember that he may mislead his readers. If Mr. Douglas condemns this Orchid, what would the majority of people say of the mean, but botanically interesting Japanese plant called *Chiono-graphis japonica* which Mr. Douglas belauded a short time ago? It was said in these columns to be a plant only suitable for a botanical collection.

OBSERVER.

## CYPRIPEDIUM MAULEI.

"J. S. W." may praise this plant as much as he possibly can, for it would be difficult to say too much as regards its distinctness and beauty. It is now nearly two years since he sent me a plant with two growths, one of which flowered last winter, and was much admired by all who saw it here, and to most of our visitors it was an absolute novelty, but few having ever seen the true plant



before, although the name is not uncommon in many collections. One grower admired my plant so much, and had moreover proved himself so generous in times past, that I took off a strong piece for him after the plant bloomed last season, notwithstanding which the remainder has grown so freely that it at present has six growths, three of which are now producing flowers. It is growing in a compost of broken crocks, charcoal, and Sphagnum Moss, and I believe does far better in this compost than in peat. Will Mr. Thomson, jun., of Clovenfords, oblige by saying in what particulars *C. Chantini* differs from *C. Maulei*? If superior to the latter, it must indeed be a splendid thing. There is another variety of *C. insigne*, said to be superior to *C. Maulei*, called *C. punctatum violaceum*. Will any one who grows all three varieties kindly tell us the distinctive features of these three forms? *C. Maulei* and *C. punctatum violaceum* we grow here, but the latter has not yet bloomed. In habit of growth and leaf-texture it strongly resembles *C. Maulei*. *C. Chantini* I do not possess, nor do I see it offered in any trade list at present near me.

All the varieties of *C. insigne* seem to grow and bloom best when grown in a cool house during the summer, where they can be syringed once or twice daily during hot, dry weather. Abundance of light and air is favourable to vigour of growth and bloom, but direct sunshine turns the leaves yellow. A mean temperature of 45° suits them when in bloom—a period of nearly three months. When may we hope to obtain *C. Spicerianum* at a reasonable price? Of all modern Lady's Slippers it is most distinct and pleasing. F. W. B.

### SHORT NOTES—ORCHIDS.

**Dendrobium moniliforme.**—A wonderfully fine variety of this Orchid is now flowering in Messrs. Backhouse's nursery at York. The flowers are larger than usual, and the colour considerably deeper—a rich rosy crimson. There is a plant of it in this nursery furnished with about a hundred bulbs, each wreathed with bloom—a fine specimen. It is one of the celebrated Burton Constable collection acquired by Messrs. Backhouse some time ago.

**Cypripedium Hookeræ.**—We have never met with this modest little Lady's Slipper in such quantity or grown so admirably as in the Gunnersbury Park gardens. Generally it is seen in a puny, weakly state, making an effort to flower at times, but here are a dozen or so of fine plants with healthy and vigorous foliage, possessing the characteristic marbling in all its beauty, and bearing, some a dozen, others as many as nine and six flowers on a plant which, though they are not of the showiest description, possess a beauty peculiar to themselves, and quite distinct from any among the numerous tribe to which the plant belongs. It is grown in a warm house with the East Indian Orchids, such as *Vandas*, *Aerides*, and the like, in pots placed on a bed of Coconut fibre, a material considered of great importance by Mr. Roberts. *C. Lawrenceanum* is another Lady's Slipper that seems quite at home under the conditions described above, and it may afford a hint to those who have experienced any difficulty as regards its treatment.

**Cœlogyne cristata maxima.**—The ordinary form of this Orchid is lovely enough, and no flower could be more charming, unless it be the exceptionally fine variety of it now in flower in the York Nurseries under the name of *maxima*. This variety is by far the finest we have seen, the blossoms being larger and more profuse than in the ordinary form, as many as eight and nine blooms being borne in one raceme. Messrs. Backhouse have some plants of it 2 ft. across, which, as may be imagined, are a sight in themselves.

**Dendrobium aureum** now perfumes the Orchid houses at Kew with its powerful yet delicate Violet-blossom scent, which amply compensates for the somewhat dull hue of the blossoms. It is of easy culture in suspended baskets. It is

the same as *D. heterocarpum*. Other Orchids of interest in flower at Kew are *Oncidium carthagenense*, not often seen so finely bloomed; *Barkeria Skinneri*, a charming species with deep violet-purple blossoms with a golden crest; *Angraecum pertusum*, *Oncidium obryzatum* (a showy species), *Rodriguezia secunda* (with racemes of rosy blossoms), *Odontoglossum cariniferum*, the pretty little *Oncidium cheiroporphum*, *Polystachya pubescens*, *Ansellia africana*, &c.—W. G.

**Zygopetalum Mackayi.**—Permit me to endorse your high opinion of this fine old Orchid. There are two or more varieties, the finest being called *superbum* or *grandiflorum*, which is so far superior to the common or normal type as almost to deserve calling a new or different plant. We have two nice plants of the best variety now in full flower, and in addition to all its other merits it perfumes a cool stove with a fragrance equal to that of Violets. Mounted singly, we find its flowers most useful for bouquet purposes, single flowers being, however, rather too large for what are called "button holes."—D. T. FISH.

**Epidendrum inversum.**—A little known Orchid in the way of *E. glumaceum*, having white flowers, with tapering lips heavily blotched with violet-purple. It is sweetly scented, and altogether a desirable winter-flowering plant. From Glasnevin.

**Burlingtonia refracta.**—The charming little Orchid we noted in the Kew collection a short time ago as *B. granatensis* is now found to be the true *B. refracta*, as pretty as any of the *Burlingtonias*.

### BOOKS.

#### FRUIT FARMING FOR PROFIT.\*

THE last published agricultural returns show a decrease of 107,000 acres of arable or Corn land under cultivation, and an increase of 216,000 acres permanent pasture. This proves that the bad times for farmers have already worked an alteration in agricultural affairs, and we have no doubt that future returns will exhibit a still greater change in the same direction. It is cheering to note a ray of sunshine breaking through the dark clouds which hang heavily on the landed interest; we welcome with pleasure the appearance of Mr. Bunyard's practical treatise, entitled "*Fruit Farming for Profit*," and we would commend it to the attentive perusal of the cultivators of the soil who desire to add to their income. It is only by increased energy and greater intelligence brought to bear on the subject that the farmer will be able to hold his own in this age of competition, and it is an admirable suggestion of Mr. Bunyard's that a portion of each farm should be set apart for cultivation as an orchard or market garden. He reminds his readers that there is no royal road to success in fruit growing. This can only be attained by care, experience, and forethought, by a due regard paid to the selection of fruits suitable to the particular soil and situation, and likewise to the wants of the district, if a market is sought in the provinces. Mr. Bunyard in his introduction acknowledges his obligations to the authors of two little works—"Small farms, and how they can be made to answer by means of fruit growing," and "*Fruit Growing in Kent*," and also to "*A Manual of Injurious Insects*." He modestly claims to be heard on the ground of his having all his life resided in the "garden of England"—the fair and fruitful county of Kent, and having had for twenty years the management of the "largest fruit tree nursery in the kingdom." He says that, though all must allow that foreign fruit can by no means compete with home produce, still it greatly affects market prices. There appears to

be a large and increasing industry called "smashing," i.e., preserving in a wholesale way. The best fruits are not required for this manufacture. Common and otherwise almost valueless Apples, Pears, &c., mixed with the softer fruits, make a very tolerable jam. It would therefore seem that a steady income might more easily be realised by growing second-rate varieties, which are sure to be wanted, rather than select superior fruits, which are more difficult to sell. Mr. Bunyard advises the grower to contract with some respectable firm to supply them wholly or in part for a term of years at an average price free on rail. This arrangement might be regretted in a scarce year when prices rise, but in the long run the producer would benefit. He would sustain no losses by having his fruit on hand, but would be sure of a fair and permanent remuneration. Fruit growing on a large scale would help the labouring classes. Girls and women in Kent and other counties do the picking, and thus greatly supplement the earnings of the husband and sons of a family. The winter work in plantations and orchards, the packing and storing of fruit, would furnish employment for numbers. Mr. Bunyard strongly recommends the increased planting of Osiers on low-lying waste lands, and that basket-making should be more extensively taught and practised. He thinks that profitable industries may help to prevent the exodus of some of our best farm workers, whose large families may thus find at home the employment the prospect of which is now tempting them to emigrate. He inquires why we do not learn the art of "canning," a cheap and very popular way of disposing of all kinds of fruits, and likewise suggests that attention should be turned to the manufacture of temperance drinks from fruit. So much for the introduction.

The first chapter of this useful little work treats of soil, situation, and shelter. His remarks are particularly applicable to Kent, but they are not without significance as regards other localities. He encourages the grower not to despair, for with care and proper drainage fruit is grown, and in many cases well grown, in soils which a casual examination would condemn, and as fruit sometimes succeeds in the garden while it fails in the orchard in the same soils, it appears to be only a matter of cultivation. It is certain that very much of the poor agricultural land will grow good fruit. Where Elm trees do well fruit flourishes. As to situation, bleak hills and uplands are to be avoided, and shelter is given by means of tall hedges, which may be lowered when the trees are well established." The advice contained in chapter ii. on starting an orchard on land which is hereafter to be laid down to Grass is particularly well-timed, followed as it is by hints on planting and selection of fruits. As I travel through the provinces it is painful to observe the feeble attempts at orchard planting. It would seem that people, as a rule, think it enough to dig holes and stick in trees and tread them in, as they would posts, and expect the unhappy trees to flourish. Well may we say—

Who plants Pears,  
Plants for his heirs.

These neglected specimens do but struggle for existence; by chance some grow and fruit; they owe more to good luck than good management. Let the planter read our author's "*Practical Hints on Planting and Pruning*." Mr. Bunyard's question—"Does it pay?" is, to my mind, not sufficiently answered. The figures quoted by him are most encouraging, and if the hopes he holds out could be fully realised, he will have, indeed, solved a problem of the day—what to do with our land? The expectation of such profits as £20 to £30 an acre should stimulate the drooping energies of the cultivator,

\* "*Fruit Farming for Profit*," by George Bunyard, F.R.H.S., Old Nurseries, Maidstone. Published by Frederick Bunyard, Maidstone, and Edward Stanford, Charing Cross, London.



but one difficulty is apparent. Unless he lives in the immediate neighbourhood of a large town, it will never be easy to dispose of his crops, especially in a productive year.

Hillside, Newark.

W. NEWTON.

#### BOOKS RECEIVED

Calvert's Mechanic's Almanack, Manchester.  
Ornamental Trees for Massachusetts Plantations, by John Robinson.

History of the World (Illustrated), Part 3. Ward, Lock, & Co.

Amateur Work (Illustrated), Part 2. Ward, Lock, & Co.  
Album Van Eeden. Van Eeden & Co., Haarlem.  
The Walnut, Chestnut, and Filbert, by D. T. Fish.  
Culture of the Lily of the Valley, by T. Jannock.  
Bamboo as a paper making material, by T. Routledge.  
The Bibliographer, part I.

**Packing Indian Lily bulbs.**—With all due respect for "F. H.," who (p. 620) directs the packing of these in charcoal dust as the best way, still I have my doubts as to the superlative excellence of that practice, which indeed I thought had long ago been exploded and was now obsolete. Why cannot the bulbs of Himalayan Lilies be packed in layers of clay as is now generally practised by the Japanese exporters of Lily bulbs? The charcoal dust and many other plans failed the late Dr. Royle, who wished to send home bulbs of *Lilium giganteum*, until at last he succeeded when it occurred to him to envelop each bulb in a mixture of soap and beeswax, which is simply the clay envelope in principle, only more expensive. I should advise that the bulbs be dried for an hour or so in the shade, and then covered with a layer of clay and horse manure, mixed into a stiff kind of paste. After each bulb is fairly covered smooth the outside of the ball by rubbing with the hand after it has been dipped in water. Let the balls dry; if after a day or two cracks appear fill them up with the same mixture, and when again dry pack tightly in boxes or brandy cases of dry chaff, sawdust, or soft shavings. Another plan which I submit, is far preferable to the "charcoal dust" system is to pack the bulbs in layers in the case direct in the above clay paste. First spread a layer of clay on the bottom of the box, and coat the sides; then pack in a layer of bulbs, fill in all interstices between them with clay, and then add another layer of bulbs, and so on until the box is filled. Of course, charcoal dust is an absorbent and deodoriser, but so is dry earth, and Lily bulbs collected at the right time (say, immediately after flowering) would travel for three months quite safely if tightly packed in earth just as it is taken from dry ground 1 ft. below the surface. Modern collectors are beginning to use this earth packing in place of Warden cases for bulbs, roots, shrubs, and cuttings of various kinds. It is a heavy form of packing, but then cases so packed travel in the hold when shipped at ordinary freight rates, and Warden cases must needs be stored on deck at special expensive rates. I have no hesitation in saying that any of the above modes are preferable to and equally as practicable as the "charcoal dust" plan; indeed, the best argument for the "clay ball envelope" is the fact that Japanese Lily bulb exporters use it, generally finding it more efficient than any other plan.—ANONYMA.

**Pellionia Davaueana.**—Among plants that received first-class certificates at South Kensington I am surprised to find my *Pellionia Davaueana* from Mr. Bull. I am far from complaining of its being shown by him, as that fact alone is a proof of its good qualities, but how comes it that the committee have so suddenly changed their opinion with regard to this plant? How is it that this *Pellionia*, which is quite new, received no recognition when first shown, and one year afterwards is honoured by a first-class certificate? We are such rare importers of new plants in France, that you will forgive me for showing my surprise, particularly to you, who in a number of *THE GARDEN* expressed regret that my plant had not been appreciated.—GODEFROY-LEBEUF, *Argenteuil*.

#### NOTES OF THE WEEK.

**AT MOUNT ANVILLE**, near Dublin, there was quite recently, and in fact is now, a fine display of Chrysanthemums; a variety called *Empress*, of a bright rosy colour, is yielding abundance of flowers for decorative uses, a great improvement on old *Christine*, which droops its flower heads too much for conservatory decoration. Mrs. Halliburton, Elaine, Fair Maid of Guernsey, Cossack, and others make a grand show grouped along with *Cinerarias*, *Primulas*, *Libonia penrhosensis*, scarlet zonal *Pelargoniums*, and well grown *Mignonette*. Some good Orchids are in bloom and the collection is remarkably clean and healthy throughout. Some pans of *Cœlogyne cristata* and a fine specimen of *Anguloa Clowesi*, which bears about fifty flowers or more annually, are a treat to see. Plants of *Eucharis* are a great feature here, and are now pushing up what promises to be a forest of stout spikes. Here also are fine specimens 4 ft. through of *Hymenocallis macrostephana*, a fine white flowered *Amaryllyd* in the way of *Pancratium* fragrans, but with linear leaves and larger flowers. A specimen of the white *Lapageria* is beautifully in bloom, and Mr. Fisher (who was a foreman at Drumlanrig) deserves great credit for his success as a cultivator.—F. W. B.

**WINTER BEGONIAS.**—Good Begonias for winter flowering are among the most useful plants which any grower can possess, but the selection is not always a good one. Out of the large number in cultivation there are not very many suitable for the purpose, and they reduce themselves to about half-a-dozen. The best is, no doubt, the new *B. socotrana*, about which much has been said lately. *B. nitida* is a beautiful species, and so is its rose-coloured variety (*rosea*) which we lately saw in beautiful flower in the Gunnersbury Park garden, where also we noticed *B. ascotensis* and *castanefolia*, two extremely useful winter kinds for cutting, and, moreover, two of the best for planting out in summer. In the neighbouring garden at Gunnersbury House Mr. Hudson grows in fine condition the beautiful *B. insignis*, the kind with hanging clusters of rosy pink bloom, one of the prettiest of all. There is some little confusion about this Begonia. Some say that it is not the true *B. insignis* that is grown in several gardens about London at the present time, but a similar and inferior species. It might possibly be *B. natalensis*; but if the true *B. insignis* is finer, it is indeed a beautiful plant. Mr. Hudson also relies on the snow-white bloom of *B. semperflorens*, also a most valuable kind, too little grown in a general way.

**IRIS HISTRIO AND GALANTHUS ELWESI.**—The first two weeks of December have been rather frosty here—ice in the morning, and only a few degrees of warmth during the day. For the last eight days we have had rather stormy weather, with but little rain, and about from 40° to 50° Fahr. during the day, and from 32° to 35° Fahr. at night. *Galanthus Elwesi* is just uplifting the soil, while the buds of *Iris Histrio* will be in full flower should we get one or two bright sunny days. Both are planted in a somewhat sheltered border close to a wall, and under precisely similar conditions, a fact which shows that *I. Histrio* is at least a fortnight earlier than *Elwes' Snow-drop*. It would be interesting to know how *I. Histrio* has behaved in England, as *G. Elwesi* is reported to be already flowering there. Can any reader of *THE GARDEN* afford some information on this point? *I. reticulata* is at least four weeks and *I. reticulata Krelagei* some three weeks later.—MAX LEICHTLIN, *Baden-Baden*.

**DWARF SCABIOUS IN WINTER.**—The fine display of the dwarf *Scabious* in pots now in the gardens at Gunnersbury Park is a sight worth

seeing, for it is as beautiful as it is uncommon. Some scores, or we might say hundreds of plants are quite a thicket of bloom of various shades—from the deepest velvety crimson through pink to pure white. The plants range from 1 ft. to 3 ft. high, but the majority are dwarf. These are invaluable for cutting from, as they yield an abundant crop of bloom throughout the winter, and they are likewise most valuable for the embellishment of the greenhouse and conservatory. Mr. Roberts' mode of treatment has been so often discussed in these columns, that any particulars on that point are needless. Another hardy annual grown here extensively in pots is the *Corn Marigold*, *Centaurea Cyanus*, the clear blue flowers of which are highly esteemed for cutting from in winter when so few blue flowers are available.

**CORREA CARDINALIS.**—This beautiful old Australian plant with its bright red bell-like blossoms is grown well, and is found most valuable by Mr. Hudson, of Gunnersbury House, for cutting from during winter, more particularly for button-hole bouquets, a purpose for which it is well suited, as is also the pretty *Erica melanthera*, the species having myriads of tiny pale mauve bells with a tuft of black anthers within, which give it a distinctive and striking appearance. Of this Mr. Hudson has large bushes now covered with bloom, and though they have to keep up a continuous supply to the flower basket, they are nevertheless handsome specimens. These are the kind of plants to grow for helping a stock of winter bloom, and they are by no means so difficult to manage as growers of the present day are apt to imagine.

**POINSETTIAS.**—You have expressed a desire to have some information on the culture of these. I did not measure the 'crest I sent you lately, but we have had many like it, and probably larger. Some plants in 3½-in. pots are about 9 in. high, and have flowers 10 in. across. One plant, a sample of many, in a 2½-in. pot, is exactly 3 in. high, has a crest 5 in. across and five green leaves. Our plants are struck from June to September, and the largest have 5-in. pots, and grow 3 ft. high or more. Peat, loam, and sand is the compost used, and liquid manure is given often. The plants are grown in a moderate stove temperature from first to last, and care is taken not to check the roots, otherwise the leaves will turn yellow and drop.—J. SIMPSON, *Wortley*.

**BROMELIADS.**—Mr. F. W. Moore, in kindly sending a reminder of the good collection of these plants at Glasnevin, remarks: "A collection of Bromeliads is a specially interesting feature, because, as in a collection of Orchids, you have some of them in flower during the entire year. Like the Orchids, also, some of them are very quaint, and often high coloured and attractive. Where the flowers are inconspicuous the bracts take their place, as in the two I send you. The following is a list of those now in flower in the Glasnevin collection: *Billbergia Grayana*, *B. farinosa*, *B. amœna*, *B. Barquiniana*, *Caraguata lingulata*, *Encholirion roseum*, *Guzmania spectabilis*, *Hoplophytum calyculatum*, *Nidularium princeps*, *N. Innocenti*, *N. Meyendorffii*, and *N. spectabile*."

**THE NEILGHERRY LILY IN WINTER.**—This handsome Lily seems to have acquired the habit of producing its blossoms in this country about Christmas time, for we have seen it in several gardens lately. It is not to be compared with the chaste beauty of the summer-flowering *L. longiflorum*, though it bears a strong resemblance to that species, but the white colour is overruled with a greenish hue that mars the purity considerably. There is now in flower at Kew in one of the cool greenhouses, a variety of it with a decided tinge of pink in the flowers, but



whether it be a distinct form or not, we cannot say. It is a useful Lily for pot culture, but rare and expensive at present.

**FINELY-FLOWERED POINSETTIA.**—After reading (p. 560) about a Poinsettia from Wortley measuring 15 in. across the head, I was induced to measure one of mine and found it to be a little more than 19 in. across the widest part and 16 in. the narrowest. The head consists of twenty-eight bright red bracts, seventeen of which are above 6 in. long, the longest being 10½ in. I also measured a double one, which is not, I think, yet fully grown. It measured 16 in. across the widest part. They have been grown in pots on a border at the foot of the wall of a lean-toinery.—CHARLES GODFRAY, *Beau-Sejour, Jersey*.

**NOTE FROM MOUNT MERRION.**—Mr. Welsh, of Mount Merrion, has now one of the finest displays of *Calanthe Veitchii* I ever saw—fine in colour of flower and length of spike. Bulbs 1 ft. long have produced three good spikes each, the basal and strongest one bearing fifty flowers, thirty of which were fully expanded at the same time; length of spike, a trifle over 4 ft. The variety Mr. Welsh cultivates is of the deepest and brightest rose colour. *C. nivalis*, a pure white-flowered form, with bulbs singularly like those of *C. Veitchii*, is now also in bloom.—F. W. B.

**HIBBERTIA DENTATA.**—A plant that flowers well in mid-winter in a cool temperature must be valuable, and such is this graceful Australian twiner. It is now producing its bright golden blossoms, each the size of a florin, in profusion amidst its evergreen foliage, which, during winter especially, assumes a peculiar bronzy lustre, different from any other species. It is of simple culture, either planted out or in pots, provided the temperature of the house it is grown in is not beyond that usually accorded to greenhouse plants. It may be seen in flower in the western octagon of the temperate house at Kew.

**ÆCHMEA LINDENI.**—This handsome Bromeliad is now attractively in flower in the Palm house at Kew. From a vasiform tuft of leaves it produces an erect spike of flowers densely clustered at the top. The blossoms have a bright orange calyx and clear yellow petals, colours that are very showy. It is also known as *Hoplophytum Lindenii*. Native of St. Catherine. Among other Bromeliads in flower at Kew, *Billbergia Bakeri* deserves special mention on account of its large showy tuft of carmine-pink bracts.

**A GROUP OF LILIUM AURATUM.**—We have to thank Mr. Hobday for a photograph of a group of *Lilium auratum*, grown by Mr. Sendall, of Berringham Park, which struck us as being as remarkable in its effect in the landscape as in its individual beauty and size; it is a fine bold and broken group, with the plants of different heights, so that one gets diversity of surface as well as a fine effect in the way of colour. It is also extremely well placed in the garden backed by evergreens and standing amidst hardy Azaleas.

**SKIMMIA JAPONICA.**—Some neat little bushes of this shrub laden profusely with red berries quite enliven the otherwise dull borders in the temperate house at Kew. They are planted out in free soil and every year bear a heavy crop of berries which remain on the plants during winter. Plants of this are also useful under pot culture, but under such treatment they require a little more care. *S. oblata* is another species which can be grown well in a similar way, and, like its congener, is a highly ornamental plant.

**PLUMBAGO ROSEA SUPERBA.**—One of the stoves at Kew is just now bright with the soft rosy coloured flowers of this plant, which is one of the most precious of winter flowerers. This *superba* variety is much superior to the ordinary

form, and all should endeavour to secure it. Both flowers and spike are larger, and the colour is brighter and not less pleasing. It is grown well at Kew in an intermediate temperature.

**THE GLASTONBURY THORN.**—We send a few sprays of this Thorn taken from the original Glastonbury tree, showing flowers and fruit on the same branch. Our correspondent who sent it to us, and who has charge of the ground in which it is grown, says the tree is in full and beautiful bloom at the present time. Taking into account the legends attached to this remarkable tree, we think it may prove of interest to some of your readers.—JAMES CARTER & CO.

**PRIMULA READING PINK.**—We met with this charming variety the other day in fine flowering condition, and thought it possessed one of the most delicate and pleasing colours among Chinese Primroses that we had seen, viz., soft rosy pink. The flowers, which are large, have finely crisped margins, and are borne plentifully above the rich green foliage. It is, we believe, one of the introductions of Messrs. Sutton, of Reading.

**THE PRESENTATION** to Mr. E. S. Dodwell on his removal from the neighbourhood of London, in consequence of failing health, consisted of a cheque for £105, accompanied by a resolution in which the donors expressed their hearty sympathy with their friend in his bodily sufferings, and signified their ardent hope that he may speedily be restored to health, and spared to attend at their floral gatherings for many years to come.

**BRIGHT DECEMBER FLOWERS.**—Now, and for some weeks past, one of our brightest shows of flowers has been and is Roman Hyacinths and Poinsettias. They are placed alternately, the Hyacinths being in 6-in. pots, half-a-dozen bulbs or so in each, and the Poinsettias are not more than 12 in. high. The pure white and bright scarlet make a very charming mixture.—J. MUIR.

**AMPHICOME EMODI.**—This is a pretty Himalayan plant most valuable for the embellishment of a cool greenhouse during the dull months, as it flowers copiously and continuously throughout the autumn and winter. It is of dwarf compact growth with pinnate leaves and handsome Bignonia-like flowers of a rosy pink colour and orange-yellow in the throat. It is now flowering in one of the cool houses at Kew.

**COCCOCYSELUM REPENS.**—This, if well grown, makes a charming plant at this season of the year, when blue is such a scarce colour. It should be trained round stakes, and as the small blue flowers disappear they are succeeded by clusters of large, highly-coloured berries, which stand a long time.—F. W. MOORE, *Glasnevin*.

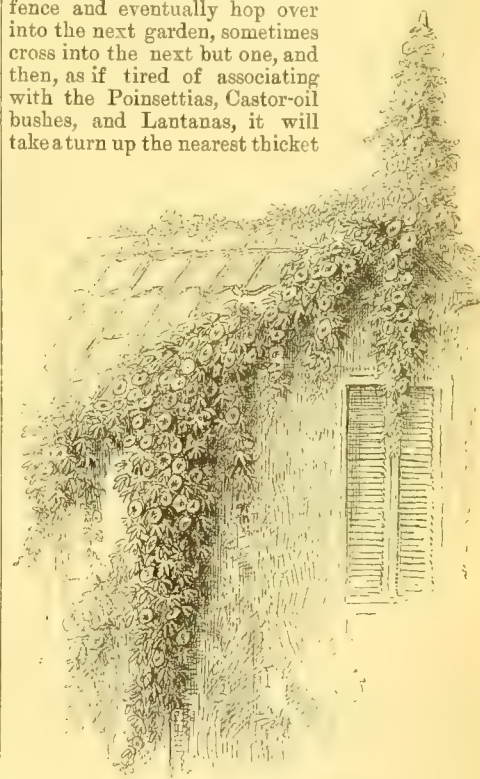
**The curatorship of the Dublin Natural History Museum.**—The curatorship of the Dublin Natural History Museum, rendered vacant by the death of the late Dr. Carte, has been filled by the appointment of Mr. A. G. More, F.L.S., for many years the principal assistant to Dr. Carte. Mr. More is well known as one of the authors of the "*Cybele Hibernica*," and as having written a "*Natural History of the Isle of Wight*," a supplement to Dr. Bromfield's "*Flora Vectensis*," besides numerous papers on zoology and botany in the proceedings of various scientific societies. Mr. More was on intimate relations with the late Dr. Moore, and is well acquainted with Irish plants as well as zoology and natural history generally. We are glad to state the best man we know of for the appointment has got it.

## THE INDOOR GARDEN.

### BATATAS PANICULATA.

MR. BURBIDGE sends us an interesting note on the fine climbing *Convolvulus* figured from Kew in *THE GARDEN* for Dec. 24. We reproduce a sketch of it sent to us when *en route* to Borneo.

"*Batatas paniculata* does well here, and bears flowers fully twice the size of those figured last week. At Port Said and all along the Suez Canal it beautifies every house and little station. It is the prince of rambling plants in a tropical or sub-tropical country. You see it planted beside a house for example. It plays about on the ground and side walk a bit, and then glides up the verandah and gains the roof, from which it dangles a fringe of long flower-laden shoots; meanwhile other shoots will have covered the roof and gone over to the other side, dropping down into the back garden. Then the strongest of the shoots will slide along the fence and eventually hop over into the next garden, sometimes cross into the next but one, and then, as if tired of associating with the Poinsettias, Castor-oil bushes, and Lantanas, it will take a turn up the nearest thicket



Batatas paniculata at Port Said.

of Oleanders or Erythras as if fully bent on hiding their gorgeous colour with its own beautiful flowers and leaves. It is never prettier than when twining up the yellow reeds so commonly used for fences in Egyptian gardens. It would be a fine thing for a large hothouse at home where it might be planted out and afforded space sufficient to show off its wealth of growth and the daily profusion of its lilac-purple *Convolvulus*-like flowers."

### TRICHINIUM MANGLESI.

WITH all due deference to "S. D." allow me to suggest that spring is not the best time in which to propagate this plant. At that season the root cuttings should be plants. *T. Manglesi* begins its season's growth in the autumn; with the earliest spring weather this growth is in full swing, and it would be unwise to interfere with it in order to obtain root cuttings, which in all probability would only be a partial success, and for this reason; root cuttings of *Trichinium*, like



most other root cuttings, are impatient of water, and as everyone knows all things dry quickly in the spring, and the frequent or occasional waterings (wet and dry) would be pretty certain to result in the loss of at least some of them. I am fairly successful with this plant, and always take off the root cuttings immediately after the bloom is over, that is, some time in September. I shake the plants entirely out of the old soil, carefully cut away any decayed portions of root there may be (and no matter how carefully cultivated they may have been there will always be some), and any strong roots that can be spared for propagating purposes. Then I repot at once in sweet soil and place them in some cool situation where they will not get dust-dry. I do not like to water until the beginning of the new year; the roots I cut up into bits about 1 in. long and dibble them into pans of sandy loam about  $\frac{1}{2}$  in. apart, covering with soil to the depth of  $\frac{1}{4}$  in. to  $\frac{1}{2}$  in. The pans are then set in a part of the house—a warm greenhouse—where the temperature and humidity scarcely vary, and where, as a rule, they do not require water until the plants are up and potted off; in fact, I like to give no water whatever to them until they are established in their little pots. We manage this in this way: as soon as they show two leaves (generally two come together) above the soil they are lifted out and put separately into small pots; these pots are then plunged to their rims in boxes of sandy soil. Evaporation from their sides is thus prevented, and by absorption they get what they require (and that is very little) until they have made several fair sized leaves, and when all danger of rotting them off has passed away. I have at the present time hundreds of them in single pots, and they are still coming up in the pans like a crop of Mustard. It is curious how many plants may be increased by this method. The rather rare *Campanula Celsi* is one of them. Seed is the other only certain method by which this plant can be propagated, and that is not often procurable, but from the smallest roots plants are readily obtained. They, however, take several months to start.

T. SMITH.

Newry.

## CULTURE OF POINSETTIAS.

WE commence propagating these in May, and continue with successional batches to the latter end of July. This enables us to have plants suitable for decorative purposes varying in height from 3 in. to 3 ft. The dwarf plants are very suitable for vase or table decoration, as from their bright colour they look well under artificial light. We prefer cuttings made of the young growths taken off with a heel, though it is not absolutely necessary to have them with a heel, as they will emit roots if they are cut off immediately below the third or fourth joint, but in this way they are more liable to damp off. When prepared we insert them singly in small pots, filled with a mixture of loam, leaf-mould, and sand. They are then put under hand-lights in a Melon house. In two or three weeks they are rooted, when the hand-lights are removed in order to harden the plants previous to moving them into their flowering pots. After potting we replace them in the Melon house or other heated structure for a few days, in order to allow of the tender rootlets taking hold of the fresh compost. After that they are transferred to a cold frame, where they remain until the middle or latter end of September. They should then be set on a shelf close to the glass in a house where an intermediate temperature is maintained for a month, as if the plants are taken out of a cold frame and put into a stove a large number of leaves will drop off, owing to the sudden change of temperature.

The compost which we find suits them best consists of two parts fibrous loam and one part each of leaf-mould and sand, with a sprinkling of

crushed bones. Pots 5 in. or 6 in. in diameter will be quite large enough for the earliest batch of plants, whereas for the latest, pots 3 in. or 4 in. in diameter will be sufficient. We have plants in 3-in. pots that are only 3 in. in height, with crests 8 in. in diameter, the foliage hanging over and hiding the pots. During their season of growth their roots require a copious supply of water and their tops frequently syringing to keep down red spider, to the attacks of which they are very liable. As soon as our plants are established in their flowering pots we expose them to all the sunshine they can get, so as to prevent them from becoming drawn, and also to harden their stems; this we also believe greatly assists them to produce large crests.

Wythenshawe, Northenden.

W. NIELD.

## CACTI INDOORS AND IN THE OPEN AIR.

WOULD it be too much to ask Mr. Loder (p. 601) to give us a list of those *Opuntias*, *Echinocereus*, *Echinocactus*, *Mammillaria*, and other similar genera which he may have tested for hardiness in cold frames and otherwise? If he would do so, I feel sure that it would greatly help to bring to the fore these long neglected, but worthy plants. What a treat it would be if we could find out a moderate number of brilliant flowered species to plant out permanently along with the *Sempervivum* on a specially prepared piece of rockwork, which might also be made to accommodate such sparkling *Saxifrages* as *S. longifolia*, *S. carinthiaca*, *S. paradoxa*, *S. lantoscana*, and other choice rosetted forms, together with the possibly hardy *Agaves* and some of the tried *Yuccas*. A collection of plants something in this way might to many appear singular, but I venture to say that it would have many admirers. They would perhaps be improved in appearance if they were associated with the creeping growths of *Sandworts*, such as *Arenaria balearica*, or *Stonecrops*, such as *Sedum dasyphyllum*, *S. acre aureum*, *S. glaucum*, or *S. pallens* and *S. Nevii*, all of which could be accommodated in the same material or soil.

The present want in such a collection is, as has just been mentioned, a number of finely flowered species which would otherwise be in character with the rest of the collection. Nothing, I think, could be more fittingly used than such subjects as those to which Mr. Loder has drawn attention. I do not overlook the experience of such a careful grower of choice plants as Mr. Jackson (p. 614), who seems, like myself, to have missed his way with *Opuntia Rafinesquei*. I have tried it repeatedly with exactly similar results. If, as "E. C." (p. 615) says, the rainfall of North Wales is the cause of it rotting off, shelter might be tried; but I am trying a specimen or two on a wall well exposed and planted in sandy loam and grit, and I am glad to see that Mr. Loder's practice is in the same direction as this experiment.

By the kindness of one of your readers, who is an enthusiastic grower of such plants, I am put in possession of a collection consisting of *Cacti*, *Stapelias*, *Kleinias*, *Mesembryanthemums*, *Harworthias*, *Gasterias*, and *Mammillarias*, which may mostly, as I imagine, be turned out for the summer months, at least, on such a piece of rockwork as that just described. I hope his eye will catch the discussion now being carried on respecting *Cacti*, &c., and that he, too, will give us the benefit of his long experience in their culture.

Kirkstall.

J. WOOD.

## SHORT NOTES—INDOOR GARDEN.

**Red spider on Violets** (p. 585).—In our dry, hot Continental summers red spider is the worst enemy Violets have. Our beds being in a very sunny position, we are compelled to shade them during the hottest parts of the summer, and to sprinkle them every morning and evening in order to keep the spider down. The summer previous to last red spider nearly overwhelmed us, consequently the crop of Violets was rather scanty. During the past summer we shaded a good deal and syringed. Our plants began to flower about October and have ever since produced

blossoms in abundance. We grow chiefly the *Czar* variety. We take the runners in March after the flowering is over and keep them in pots under glass. In May when the pots are full of roots we plant them out in beds where they remain till autumn when they are placed in frames, and as the plants are not disturbed by replanting, an earlier supply of flowers is secured at the beginning of winter, a time when Violets are most wanted. The runners from your correspondent's infested plants will no doubt have some spiders on them, but by syringing them freely in spring it will gradually disappear. During the hot summer months care must be taken to keep the spider down by frequently sprinkling and shading from hot sunshine. I do not consider the *Czar* a late bloomer; when in a healthy state it begins to flower here about October and lasts till March.—LOUIS KROPATSCH, *Laxenburg, Vienna*.

**Winter blooming Pelargoniums.**

Will someone kindly furnish me with the names of a dozen winter blooming Pelargoniums? Out of four dozen sorts I only find four good ones for winter, viz., *Laura Strachan*, pink; *J. C. Musters*, scarlet; *Apple Blossom*, pale pink, very poor bloom, but free; *H. M. Pollett*, scarlet. They are also good summer bloomers, so I consider them doubly valuable. I should also like the names of half-a-dozen good winter blooming double Pelargoniums. Out of some dozen sorts I only find two good, namely, *Eugénie Bandouin*, an invaluable pink for summer or winter, and *Député Viox*, a dark plum colour. I cut some very fine blooms on Christmas Day this year of the varieties I have mentioned from plants in a light greenhouse temperature from 55° to 60°. Any information will oblige.—A MANCHESTER GARDENER.

**Eucharis amazonica** (p. 596).—Strong healthy plants of this under liberal treatment may be induced to bloom four times in twelve months. Plants here, 5 ft. across, have bloomed four times, and are now throwing up a fifth crop of blooms within the twelve months. These plants are growing in loam with a liberal mixture of peat and silver sand. They are watered freely with manure water as soon as they begin to throw up their flower-stems. They never receive bottom heat, and the dying off or resting system in their case is wholly abandoned. They grow in a warm, moist temperature, ranging from 60° to 80° all the year round.—RICHARD NISBET, *Aswarby Park*.

**Shading Lapageria rosea.**—Considerable difference of opinion being entertained as to whether *Lapagerias* should be shaded or not, I may just say that I have a plant under the roof of a house, with a western aspect, in which are kept various flowering plants. This house is slightly shaded in very bright weather for the benefit of the flowers, regardless of the *Lapageria* which nevertheless flowers profusely. Indeed there are quantities of flowers open and opening on it now. I have also seen it growing without shade, and doing equally well both under a roof and on the end of a conservatory. I believe, in short, that it will do with or without shade, provided the latter is not too dense.—W. R.

**Diseased Gesneras.**—*J. C. F.*—The leaves of your plants are, I believe, affected by a small mite or *Acarus*. I can, however, only find two specimens, which are either the common red spider, or a nearly allied species. Have you tried laying flowers of sulphur on the hot-water pipes? the fumes of sulphur are very fatal to them. Syringe the plants afterwards, and do not let the air become too dry and hot. These mites live on the undersides of the leaves at the base of the hairs; therefore be sure when you syringe that the fluid reaches the insect.—G. S. S.

**Browallia elata.**—The note on this plant in *THE GARDEN* (p. 582) does it but scant justice. I consider it one of the best subjects that can be grown, especially where means are limited and a constant supply of cut flowers is expected to be kept up through the autumn and winter months. I use its flowers along with those of *Begonia insignis*, white *Bouvardias*, *Cyrtoceras*, and other suitable subjects for button-hole bouquets; and well-grown plants of it are no mean objects for room decoration.—MRS. W., *Malton*.



## BOMAREA CARDERI.

SOME years ago the Bomareas or climbing Alstroemerias, as they are called sometimes, appear to have been favourites, for several species were introduced and became well known, but many of them seem to have dropped out of cultivation, for now the species to be found in gardens are very few. Happily, a reaction appears to be setting in in their favour, and rightly so, for they are among the most elegant of greenhouse climbers, satisfactory as regards their culture, and never failing to flower well, and that continuously, or almost perpetually throughout the year, even at mid-winter. One, if not the noblest and finest, of these is that which we here illustrate, viz., *B. Carderi*, a species introduced some half-a-dozen years ago from the mountains of New Granada. It is a strong climbing plant with

soon become popular. Notwithstanding the beauty of this species, there are, however, others even more beautiful—for example, the new *B. conferta*, with large heads of crimson flowers, which the above firm has also recently introduced, and no doubt Mr. Carder in his travels in the wilds of South America will fall upon others as fine as that named in compliment to him.

At Kew this plant is growing in a bed of free soil of an ordinary character, and is placed near the door, so that it always has abundance of air, which evidently suits its requirements.

W. G.

## BROMELIACEOUS PLANTS.

THE interesting note from "W. G." in THE GARDEN (p. 586) regarding the growing love for some of the Bromeliads in this country should, I think,



*Bomarea Carderi*: showing habit of growth.  
(Sketched at Kew, November, 1881.)



Single Flower.

stout purple stems and bold, handsome leaves. The flowers are borne in huge terminal clusters, that hang in the imposing manner shown in the engraving, which was sketched last month from the fine specimen that covers a large space at the end of the Cactus house at Kew. These flower clusters spread out enormously in some instances. Mr. Green, of Pendell Court, Bletchingley, has had some considerably over 3 ft. in diameter. These drooping umbels of flowers when in perfection are a sight unique among cultivated plants—one which cannot fail to arrest the attention of everyone. The blossoms, some 2½ in. long, are bell-shaped and of a beautiful rosy-pink colour, copiously spotted with purplish brown. The fruits, too, that succeed the flowers are handsome, being about the size of a hen's egg, deeply ribbed and golden in colour. There seems to be various forms of it, some much inferior to others. The Kew plant represents the finest, poor varieties having flowers only about half the size, not so plentiful, and very dull and washy in colour. Messrs. Shuttleworth, Carder & Co., of Park Road, Clapham, have imported this plant in large quantities, and therefore it will doubtless

help to bring them more into notice than they hitherto have been. It would be difficult to explain why plants, which for diversity of form, singularity of habit, and richness of colour are unsurpassed by any other family, should have so long failed to win favour amongst English cultivators generally. In Continental nurseries, especially in Belgium, these plants are grown in great numbers, and I am told the demand is often more than the supply can easily meet. Bromeliads are, in fact, to the Belgians and French what Orchids are to English horticulturists, and more, for whilst many Orchids are to many cultivators sources of considerable disappointment and loss from their delicate and ill-understood nature, a Bromeliad is, on the contrary, one of the very easiest of plants to cultivate.

Some weeks ago I had the good fortune to have an opportunity to inspect the famous collection of Bromeliaceæ belonging to Professor E. Morren. Professor Morren resides on the outside of the town of Liege, the Birmingham of Belgium, as it is called. The houses in which his plants are grown are small, or rather a large low structure is divided into about half-a-dozen compartments, in which the temperature can be altered so as to suit the requirements of the whole of his large collection. Though low, these houses are also very light,

not a ray of sunlight being lost, and the plants are quite close to the glass. On entering the houses I was astonished to find so many plants in flower, as the middle of November is not the month in which many of these plants bloom. However, there they were; quite 50 species, I should think, all showing either the most brilliant colours or curious shapes; the whole being quite equal to the finest display of Orchids I have ever seen in a place of that size. The superb *Vriesia brachystachys* was represented by at least a dozen flowering specimens, each with four or five spikes of the richest orange, scarlet, and emerald green colours. I am certain that this plant is destined to become a great favourite, for I know nothing to beat it as a useful and easily grown plant. Flowering in the winter, too, increases its value. *Vriesia psittacina* and *V. speciosa* were also displaying their rich colours. Amongst *Tillandsias* there were several splendid species in flower; the beautifully varied *T. tessellata* was one of the most striking, as well as *T. Sieboldiana*, which is very near the last mentioned in leaf characters. *T. pulchella*, *T. xiphioides*, and several others not yet named were also in flower. *Billbergias*, *Caraguatas*, *Pitcairnia*s, *Æchmeas*, *Nidulariums*, and several less known genera, such as *Catopsis*, *Cryptanthus*, and *Melinonia* were also represented. The atmosphere in the houses is kept very moist, the excessive moisture and light no doubt having a great deal to do with the production of so much flower. Professor Morren devotes the whole of his space to his pet family, and of course is a most successful cultivator of them.

A short distance from M. Morren's place is the well known establishment of Messrs. Makoy and Co., where again I saw a wonderful collection of these plants. These growers, in fact, claim to be the possessors of the finest collection of Bromeliads in cultivation, and, judging from what I saw, I should think they are not far wrong. In this establishment, however, I saw so many plants besides Bromeliads, some notes on which I think are likely to interest readers of THE GARDEN, that I will defer all mention of what I saw there for some other time, merely saying here that the riches of the Order about which I am writing are evidently well known and duly appreciated by the patrons of this establishment. It would almost seem superfluous to write of the beauties of such plants as *Tillandsia Lindenii*, whose large, rich blue flowers are as select as blue china, and are produced in twos and threes for almost a quarter of the year. Then, again, there is the mosaic-leaved species, *T. mosaica*, whose leaves are as beautifully veined as the King Orchid (*Anæctochilus setaceus*); *T. bulbosa*, with a bulb-like stem and rush-like leaves, and flowers and bracts of the brightest blue and scarlet. The Old Man's Beard, too (*T. usneoides*), is a most singular little plant which may be recommended to lovers of the curious. Fancy this little plant, which is so like a long grey beard as it hangs from the block on which it thrives so well, being brother to the Agave-like *T. regina*. And I might go on to great length before exhausting the list of beautiful and interesting members of this Order, for there are still many species of *Billbergia*, *Pitcairnia*, *Æchmea*, &c., which possess in the greatest fulness all those characters that should win for them a place in every garden. The General Horticultural Company is doing good work in trying to incite a love for these plants, and it is to be hoped they will succeed. Others, too, are beginning to work in the same direction.

B.

## POINSETTIAS AND PRIMULAS.

**Poinsettias.**—There are two distinct methods of propagating Poinsettias. The first is when the plants have done flowering to keep them in a greenhouse temperature till April, supplying them somewhat sparingly with water. The stem is then cut down to within an inch of the pot, and divided into as many pieces as there are eyes, cutting every time just above the bud so as to leave about an inch of wood below each eye. Then take some small 2½-in. pots, and after well draining them



fill them with light sandy soil, consisting of equal parts of loam, leaf-mould, and sand. Then insert the cuttings singly in the centre of each pot, making all moderately firm, and plunge them in a gentle hot-bed. No water need be given for a day or two, as the soil will doubtless be sufficiently moist, and even when once watered care must be taken that they are not allowed to become too wet. When the sun is very powerful they will require to be slightly shaded; cuttings thus treated and placed in a bottom heat of 80° and a top temperature of 70°, running up to 80°, with sun heat will soon root and break away strongly. The old "bottoms," too, placed in a little heat will start into growth and make good strong plants. The second method is to keep the plants at rest after flowering, the same as has just been recommended; then about the end of April or the beginning of May they should be introduced into heat. The result will be that they will at once push forth young shoots, which should, as soon as long enough, be taken off with a heel, and inserted as cuttings. The pots should be prepared as above described, then after the cuttings are put in they should be watered, and as soon as the foliage is dry placed in a close case, in which they will root rapidly. Care must be taken to prevent damping, as the young succulent shoots speedily decay if too much moisture be allowed to accumulate on them; to obviate this the lights should be removed for about an hour each morning. As soon as rooted they should be hardened off, or they soon get weakly, while the object is to obtain stout, sturdy growth.

**Chinese Primulas.**—Single varieties of these may be propagated to any extent by means of seeds, yet many fail to get them to grow satisfactorily, a circumstance no doubt owing, in many cases, to the young plants being allowed to get dry after germination has taken place. The soil best suited for the seed is about two parts of leaf mould to one each of loam and sand. Sow in well-drained pans and fill them with the soil just mentioned, then water with a fine-rosed watering-pot, and after the water has subsided the seeds should be sprinkled thinly on the surface, to which, being moist, they will at once adhere. A little sand may then be lightly strewn on the surface, and then the pans should be placed in a close frame, where they can be shaded from the sun's rays. A good plan is to lay a sheet of paper over the seeds till germination has taken place in addition to the other shading during sunshine. They must not be overwatered, yet should on no account be allowed to become dry, or failure will be the result. The double varieties are increased by layers or cuttings, the former being by far the best where there is not every convenience at hand; but by the latter, under skilful treatment, they can be propagated more rapidly. Where layering is practised, as soon as the plants have finished flowering give them a thorough cleaning, taking care to remove all decaying leaf-stalks, then earth up with good fibrous loam and place them in a warm greenhouse temperature, in which they will soon root, when they may be divided and potted off. For cuttings it is necessary to have a close case in a temperature of from 60° to 70° where the air is not heavily charged with moisture. In such a place I have been uniformly successful under the following treatment. When the plants have done flowering I keep them rather dry for two or three weeks; then I clean them and place them for a fortnight in a temperature equal to that in which they will be placed as cuttings. This latter is a great incentive to the formation of roots, which in the cuttings are produced not only from the base, but also from the whole of the buried part of the stem, and it is often possible after being in the increased temperature for a couple of weeks, to see the roots just commencing to peep out from various parts. The plants may then be cut up into as many pieces as there are shoots, leaving, if possible, 1 in. of old wood at the base of each cutting. Two-inch pots—the most convenient size—should be half filled with broken crocks, thorough drainage being an absolute necessity. For soil use two parts of leaf-mould, one of loam, and one of sand,

and when the cuttings are put in support each with a small stick, or the weight of the head may cause them to overbalance and fall. They should be well watered before being placed in the case, and the lights must be left off till the superabundant moisture has dried up. The after treatment consists in shading during sunshine, in removing decaying leaves, and in leaving off the lights for a time each morning to dry up the moisture; indeed, as the case is in a house, the lights will be better off altogether during very dull weather, but must be put on if the sun comes out, or if any of the cuttings flag. If the above directions be carried out, the plants will be well rooted in a month, and the loss from decay very slight. T.

#### LIGHT IN THE CONSERVATORY.

THE remarks in a recent issue of THE GARDEN on this subject were well timed and truthful, as many will be able to testify. For my own part I find that there are few more difficult structures to manage built for the protection of plants than conservatories. In my time I have had to deal with both dark and light houses. The worst were the old-fashioned places that only admitted light through windows in the front. The only merit such houses possess is that they are more frost proof than other forms; consequently they do not require so much firing, but in other respects they are plant spoilers. Cyclamens, Primulas, Pelargoniums, and Calceolarias are rendered useless in them in a fortnight, and no other plants except Camellias and Orange trees can be kept in good condition in them for any length of time. The best conservatory I have had under my charge for keeping flowering plants in good condition was one that was 40 ft. wide and 50 ft. long, with glass at the two ends reaching from the ground line to the roof, which was of iron; the squares of glass were 2 ft. wide and 5 ft. long. In this house even Primulas and other soft-wooded plants, as much as 16 ft. from the glass, did not get drawn, although they remained there for two months and sometimes more. They had plenty of light, which kept them in good condition. On the floor of this house, which was some 30 ft. in height, we had large zinc trays, in which we set forced Roses or any other flowering plants, according to the season. Under such circumstances Roses kept well in flower, and so did such plants as Cyclamens, and indeed everything else; but it must be understood that between the plants and the glass there was nothing to impede the light. There was, in fact, a perfect flood of light diffused all over the interior, there being very few roof creepers to impede its progress. How many conservatories there are rendered quite unfit for keeping flowering plants in good condition for any length of time, none of us would like to own, but the fact, nevertheless, remains the same; too much is sacrificed for the sake of having roof climbers. They not only shut out the light, but they offer a favourite home for insect pests, and very often without giving an adequate return for the labour bestowed on them and the space they occupy. The present style of building conservatories is for the most part eminently suitable for flowering plants if they could only get a reasonable share of the light provided for them, but in many cases that is nearly shut out by roof climbers. I have long been convinced that in selecting creepers for conservatories we should exercise discrimination. In most cases the roof is covered with a green drapery that is much too heavy. The foliage of many climbers is so dense and dark in colour that even bright flowers fail to lighten it up. Tacsonia ignea and Cobæa scandens variegata are fast growers, and so far as that goes they are useful, but they are often left too much to themselves, and when that happens they shut out every direct ray of light from plants beneath them. For the roofs of conservatories there is no better creepers than Tacsonia Van Volxemi and T. exoniensis when kept well within bounds. Both of these flower freely and festoon gracefully, and, moreover, their foliage is not so large as that of some other creepers nor so thickly placed on the

branches; therefore, they do not shut out so much light as some of the Passion-flowers or the Habrothamnus.

In building conservatories we need not restrict the architect to any particular height with the view to securing light for our plants. Low conservatories would often be out of character with the surroundings. With a good glass roof I would not object to any reasonable height provided the interior arrangements did not interfere with the diffusion of a good body of light down to the ground line, and unless this is secured no kind of structure however elaborately arranged will keep flowering plants in good condition for any length of time.

J. C. CLARKE.

#### CAMELLIAS OR ROSES.

IN the truly rural districts we are almost deafened with the cry of agricultural depression. We hear little or nothing of the sufferings of horticulture, though so far as the former results from bad weather and foreign competition, horticulture must needs suffer more than agriculture. Be that as it may, there can be no doubt that one of the surest ways of reviving both is the making the earth and the plants we cultivate give us a larger and a more profitable yield without greatly increasing the cost of production. Horticulturists have carried this principle out to a very great extent in the open air. By simultaneous and successional cropping, three, and even four or more crops a year have been reaped from the same land. The shelter of glass, by placing climate under more immediate control, greatly enlarges the power of the cultivator over his plants. By the aid of artificial heat crops are, in fact, raced round the year in such rapid succession as to overlap each other in all directions, and get most curiously mixed up in regard to times and seasons. Nevertheless, a good many plants under glass, such, for example, as Ericas, Epacris, Acacias, and Camellias, refuse to flower more than once a year. Of these, perhaps, the last occupy the larger space. They are beautiful in season, but will only yield one harvest of bloom a year. That harvest is also of less value than it was. Camellias have no odour, and they are almost too formal and wax-like for many. One can hardly love them as one does the Rose, Valley Lily, or Violet. The time therefore seems to have arrived for boldly propounding the question whether Camellia culture might not be curtailed to make way for the growth of more Roses under glass. Assuredly our best Roses rival the finest Camellias in colour and form, while they are also full of fragrance and sentiment, which goes for a good deal in the matter of flowers, and though rough the descent I must point out here the number of

**Rose harvests** that may be gathered from under glass in the year. Who shall say how many—four, five, six—are possible? And this is virtually giving us so many summers within the compass of a twelvemonth. And these harvests are within reach. We are now actually gathering our sixth crop of Adam from a cool passage since last February; more buds are showing. From the open air we have had three good harvests of Gloire de Dijon this season. Nor is any great amount of heat necessary to bring forth several perfect Rose harvests a year. A temperature from 45° to 60° at the utmost will suffice. Nor will air of 40° or lower endanger the crop, though, of course, it would hinder it and render the results slower of realisation. Planted in the same houses, and receiving the same treatment and temperature as Camellias, most of the finer Tea Roses would yield three crops of flowers a year. One good crop of Roses would assuredly equal in value a crop of Camellias, and most of the other crops would be pure profit.

In light conservatories Roses might take the place of Camellias on front, back, and end walls, while in similar structures they might often clothe the roofs with equal beauty, as not a few of the climbers that now encumber rather than adorn them yield no profit. Not a few of the Passion-flowers and Tacsonias are of but little use for cut-



ting and of no value for selling; while such rough roof plants or climbers as Brugmansias and Cobæas not seldom mar or destroy the architectural proportions of roofs, and fatally injure the plants doomed to live under their gross, dense shade. Roses, on the contrary, can be trained into any form, and made light or grown into dense screens at will. Thus they may be made to add new beauty to the most elegant roofs, and their culture need hardly interfere with the health and beauty of the plants grown beneath them. Of course these plants may often be Roses, but they may also be Camellias or other plants. There are, however, fewer better or more appropriate roof climbers for Camellia houses than a thin screen, or trellis, or rafters of Tea Roses. Thus the two rival flowers

interest. It is a South African plant, and was introduced into this country by seeds, and flowered at Kew for the first time about seven years ago. In the *Botanical Magazine* it is stated that "This remarkably handsome plant is well fitted for dwelling-room culture, its Ivy-like, glossy leaves being evergreen, its large flowers produced in mid-winter, and its habit well adapted for trellis-work. I have, indeed, heard of either this or an allied species being cultivated in drawing-rooms abroad, and trained round the walls beneath the ceiling. It is the largest flowered species of the enormous genus to which it belongs, and which contains nearly one thousand species, and the flowers remain for a consider-

excellent imitation of the Mistletoe. This genus, however, is, as already stated, so very curious in the great variety of forms presented by its members, that one is not surprised to find mimicry among them. Then there is the pretty little *Crassula lycopodioides*, which bears, as the name implies, a remarkable likeness to some of the *Lycopodiums*. Indeed, one might point out an almost endless list of plants of this peculiar character, but I daresay what are here mentioned is sufficient to rouse an interest in this very curious mimic-freak amongst plants.

B.

## THE ROSE GARDEN.

### POT ROSES.

Few plants grown in pots have been more improved of late years than pot Roses. The production of blooms throughout the winter in anything approaching the condition in which they are to be had in summer used to be looked upon as an impossibility. But it is far from being so now. This is evident by what may be seen in the London flower shops any day in December, January, or February. The prices which it was rightly supposed the flowers would fetch induced some of the growers for the London market to try what could be done in the matter, and their success has been so complete that quantities almost, it might be said, without limit of beautiful half-opened buds of the favourite white Niphetos, the yellow-shaded Safrano, the pink Catherine Mermet, and other Tea varieties are regularly forthcoming. One cause why winter Rose growing in private gardens has not generally been successful is that the right kinds were seldom selected. The large-flowered Hybrid Perpetual varieties mostly used would not answer in winter, and grown as Roses often are in private establishments mixed with numbers of other things was and is much against them. The market growers who cultivate Roses for winter flowering have made a study of the varieties they grow, and their practice is as widely different from that followed by private growers as it well can be. Houses that give as much light to the plants as if they had no covering at all over them admit of more heat being used than they would bear in ordinary structures, and without sufficient heat the flowers will not come up to the required size. Then, again, in the all important matter of air, general plant cultivators consider that if a plant is growing it cannot possibly thrive as it is required to do unless a certain quantity of air is admitted when the weather is at all favourable in the winter season. This mode of cultivation is all but universally followed during winter and spring in private gardens; whereas the best growers no more think of letting in the external air to their winter and spring forced Roses than they would of removing the lights on a frosty night. It is well known to all who are acquainted with vegetable life that the hardier a plant is the more tender its leaves are when they have been produced by the aid of artificial heat in the short sunless days of winter. The young foliage of Roses is always tender, even out in the open air, and it is much more so when forced. In that condition it cannot bear the admission of air, which, if given for even a short time on mild days, except in the smallest quantities, and that at the top of the house, seems to stop growth and induce mildew as if by magic. It has also an equally injurious effect on the growth of the buds.

**Rose-growing for market.**—I recently saw in one of the most successful of the London market Rose growers' places a newly erected house filled with hundreds of Roses in pots, most of them strong plants. These had been several years under pot culture, and regularly



German Ivy (*Senecio macroglossus*); flowers pale yellow.  
(Drawn at Kew, December, 1881.)

would meet and the veil of Roses improve the health and enhance the beauty of the Camellias.

D. T. FISH.

### GERMAN IVY.

(*SENECIO MACROGLOSSUS*.)

AN interesting feature of the collection of succulents at Kew is the many instances one finds amongst them of those extraordinary freaks known by the name of plant mimicry. The surprising resemblance borne by some plants to others which in botanical classification are extremely far removed from them has given rise to some curious speculations in scientific quarters. These remarkable cases of vegetable mimicry have an interest for all lovers of plants, and when, as in the present instance, the "mimic" noticed has considerable ornamental qualities to recommend it to cultivators, it is desirable that such plants should be better known. *Senecio macroglossus* is now nicely in flower in the above-mentioned house, and from the close resemblance of its leaves and habit to the common Ivy (a resemblance which often causes visitors to mistake it for the latter), and the size and beauty of its flowers, the plant is an object of much

able time in perfection." To this I may add that the requirements of the plant are very simple, a cool greenhouse, where it should be planted out and allowed to run over the rafters, being the situation most suited for it. The flowers are from 2 in. to 3 in. across, are primrose-yellow in colour, and are freely produced from the axils of the leaves on the matured growth. For pot cultivation the plant can also be recommended, under which treatment, if placed out-of-doors in the sun during summer, and housed in a cool, light house in winter, an abundance of flowers will be yielded during the winter months. The Ivy-like appearance of the leaves and branches is well shown in the accompanying wood-cut. Other plants that are to be seen in the same house at Kew, and are remarkable for their close resemblance to others which are in no way related to them, are two other species of *Senecio*, viz., *S. tropæolifolius*, which might easily be mistaken for a dwarf *Tropæolum* even by those who "know," and *S. juncus*, a species with straight rush-like branches bearing no leaves, but flowering rather freely in winter. A most remarkable plant belonging to that curious genus *Rhipsalis* is a species called *R. Cassythæ*, which in habit and the berries it bears is an



forced. They were just opening their first flowers, and they will continue blooming until the beginning of March. The house has been built expressly for forcing Roses, and is so constructed that not a particle of air can be given anywhere except by means of very limited openings at the ridges; it is much higher than ordinary plant houses generally are, so that the little external air that is admitted in the middle of mild days does not reach the plants until its condition as to temperature is identical with that of the house, which is glass down to the ground level, and as light as it is possible to make a glass structure. Liberal feeding and sufficient water to the roots at all times, with very little air in winter and spring, are the only means of escaping mildew. If the stereotyped advice given by many who write on the cultivation of forced Roses was followed by the market growers they would not get as many flowers as would pay expenses. As to pot culture or planting out, each grower will doubtless choose for himself. As a matter of course when turned out in a bed of good soil, the bushes get larger and produce more flowers, but against this there is the serious objection in a house expected to furnish flowers every day from the time Roses are cut off out-of-doors in autumn until they can be had again in summer, that the plants cannot be removed, and they will not keep on blooming all the time to an extent that would give an adequate return or meet the demands except where few flowers are wanted. As to planting out strong growers and training them to the roof, they no doubt give a better effect in the way in which climbing plants always do, but the facts of the head being in close proximity to where air is admitted renders them certain to be injured by mildew, and they do infinitely more harm to the plants grown under them by excluding light than is compensated for by the flowers which they yield. Those who require an unbroken supply of good Roses, say from the beginning of November until the latter end of May, want to have as many plants as will make three relays in the forcing house (which for a moderate establishment need not be a large one), using judgment in introducing fresh plants in place of those that give signs of inability to flower longer. If this work is to go on satisfactorily from year to year the plants must be cared for as well after having bloomed as whilst flowering. They should after blooming be moved to a house or pit where they can be kept from being chilled by cold, free from insects and mildew, and where they can have sufficient water; even the last lot that are intended to bloom up to the time when outdoor Roses come in should not be turned outside without a little hardening off. Mr. Ladds, who it may be said forces Roses by the acre, never turns his plants out at all, but keeps them in houses all through the year. The strongest plants as a matter of course produce the greatest proportion of large fully developed flowers, and it is only by treating them well during the time when they are recruiting their strength after forcing that they can keep on improving from year to year, which they will do if properly managed. I have had Roses in pots which I forced every winter for seventeen years consecutively, and at the end of that time they were as full of vigour as at any period during their existence, and at least six times as large as at the beginning.

**Too many varieties** is a mistake. It is all very well to go in for variety so far as it can be done without reducing the quantity, but there are a few kinds that will yield more flowers when forced than others will. As a white *Niphetos* stands prominently in front of all others, *Safrano*, yellow or buff, has all the good pro-

perties requisite for forcing; *Isabella Sprunt*, pale yellow, is good in bloom and a profuse flowerer; *Catherine Mermet*, pink or flesh colour, produces very fine buds, large and beautiful in form; and *Madame Falcot*, deep yellow, is beautiful, even when the flowers are further open than many of its class. These, as will be seen, are all Tea varieties, and will all flower early. Amongst Hybrid Perpetuals *General Jacqueminot* is the variety that will answer for forcing the earliest, but it is not advisable to attempt to have it in bloom before the new year is fairly in, or the crop will be small; it is best for March or April. *La France*, always beautiful and sweet as a Rose can be, is also desirable for coming in during the latter part of the forcing season, but neither it nor the *General* will yield such numbers of flowers as the Teas just named will do. Beyond these I should not go very far.

**Soil.**—Suitable soil is a matter of greater importance for Roses intended to be forced than it is in the case of many things; the turfy, sandy loam, which appears to be looked upon by many as the all-in-all soil for every description of plant that thrives in loam, is not the material to be chosen for pot Roses, although they may live in it. The strongest rich heavy loam, containing scarcely a particle of sand naturally, and not very much added to it, but some good rotten manure, is what pot Roses like, and in which they will push up stout shoots from the bottom, like Raspberry canes. Even in this close soil they should be potted hard. The most successful grower I know with *Devoniensis*, a Rose that most people do not find free as regards either growing or flowering, uses soil that in appearance looks like rank clay, and would make first-rate bricks. He lays it in great square cubes on his hot-water pipes until it is dried through, after which with a little moisture it falls like quicklime; he then adds some rotten manure to it, and in potting rams it in close enough to all but split the pots. T. BAINES.

#### POTTING TEA ROSES AT MIDSUMMER.

WE are all so much indebted to "Peregrine" for keeping us wide-awake, that I would be the last to complain of either the number or sharpness of his criticisms. Still, I think his adverse sentences (p. 376) are partly the result of misapprehension. The potting up of Roses for Christmas was hardly recommended for general practice, but more as an exceptional course that might probably be taken. I may add that I tried it successfully during the past summer, and on several other occasions. There seems to me to be no more valid reason against the practice than might be urged against transplanting Hollies or other evergreens in April. "Peregrine" reasons as if Tea Roses made only one growth a year. I contend that they make many, and more, that they might be moved towards the end of August, (one of their growths) with comparative safety. Seeing all our Tea Roses in full growth in the first week of December this year it seems like a parody on such facts to read "Peregrine's" words about their shoots being "hard and mature in November, and so soft that they might be squeezed between the fingers in July." Why this year and many others the wood of Tea Roses is far more mature in July than in November, and my contention is that the plants may be transplanted or potted up with safety at any time when the young wood is in a state of semi-maturity. In other words, Roses and other plants may be potted up by condition rather than calendars. This will show "Peregrine" that the matter is hardly so simple as it seems, and too important to be settled off-hand. Not only may Tea Roses be safely potted up in June or July, but in a dry, blooming time, such as we had last summer, many of the Hybrid Perpetuals were in a better condition for transplanting than they are on this 12th day of December.

Then, indeed, the growth was "hard and mature." Now the growth that has been made since then is so soft that it may be squeezed "to pulp between the fingers."

While all this is true, I must not, however, be understood by "Peregrine" or any one else to advocate the general planting of Roses in June rather than in November. No; this would be a very different thing from potting up a few Chinas or Teas at midsummer or any other time when wanted. These could be placed in a shady place, or a cool pit or house, and would soon be re-established by a moist, close atmosphere and overhead syringing for a few days. In fact, it was the rapid re-establishment of Roses in pots after potting up in the summer that caused me to advert to the "probability of the practice proving successful," and I might have added useful. "Peregrine" refers to the shrivelling of shoots that follows on the potting up of Tea Roses in October or November. This shrivelling will probably prove more severe than that at midsummer, as it arises as much or more from the sluggish action of the sap as from root losses or disturbance. As to their balls, there are balls and balls. Much depends on soil and culture. I have potted up Roses with so much soil adhering to their roots, that little more was needed to fill 6-in. or 8-in. or 10-in. pots. But the pursuit of balls is seldom worth the candle, and is very apt to end in the rupture or sudden snapping off of many of the finest roots. Everybody, of course, knows that Roses do not form masses or mats of roots like Hollies or Box, and that consequently it is vain to attempt to pot large balls with them; less, however, because the "roots have no holding power" than because there are not enough of them to keep the soil together. D. T. FISH.

## THE GARDEN FLORA.

### PLATE CCCXVII.—SINGLE DAHLIAS.\*

THE growing popularity of these beautiful flowers has induced people to set about raising seedlings in great numbers, and the result is that we are surrounded by a host of good, bad, and indifferent kinds, from which it has become difficult to select the best. At one time, and that very recently, no one ventured to have such a thing as a single Dahlia in his garden. In raising seedlings of the double type all the single forms, good or bad, were thrown away. How many rich treasures have been thus cast aside by growers of double Dahlias in their competition for enormous Cauliflower blooms it would be difficult to estimate, and many regrets must now be felt for what can never be recovered.

**Culture and position.**—A grower of great experience and an enthusiastic lover of single Dahlias writes as follows: "The cultivation of single Dahlias is of the easiest description; any good garden soil without manure does for them, and they will do well except where the sub soil is non-retentive. In the neighbourhood of London one is sure of success, and single Dahlias may be regarded as *par excellence* the Londoner's flower. They are produced from the old roots in the usual way. In early spring the roots of last year should be planted in the borders of a warm house, and as soon as long enough, the shoots are detached with or without a small piece of the old tuber, and struck in bottom-heat in separate pots. When the pots are found to be full of roots, the plants should be taken into a cool house and gradually hardened off until the time comes to plant them out. To raise from seed, the seed should be sown in February in heat, and the young plants should be treated in the same way as cuttings. The seedlings flower the same year, and are very

\* Drawn from specimens grown in the Hale Farm Nurseries, Tottenham, 1881.











interesting, inasmuch as the flowers very seldom come like those of the parent plant. No doubt by careful hybridising and covering up each flower left for seed the family likeness might be perpetuated, but I have not tried this experiment.

"When on the subject of seedlings, let me recommend for Dahlias what I consider to be a good plan for all seedlings (and I would specially recommend this plan to Cucumber growers), viz., the sowing of one seed the right way upwards in a 2½-in. pot; very few fail; it saves the after trouble of pricking out, and secures the plant in its entirety, not a fibre of a root being lost, and who shall say what influence this may have on the after well-being of the plant. All who grow Dahlias should invest in Dahlia pans,

#### NEW GREENHOUSE CLIMBER.

(JACQUEMONTIA AZUREA.)

This pretty South American twiner is likely to prove a gain as a winter-flowering plant. It is very similar to a *Convolvulus* or *Ipomæa*; indeed some authorities still class it as such. It has slender twining stems, heart-shaped leaves, and small blue, white-centred blossoms gathered together in crowded clusters. We first made its acquaintance in a living state a month or so ago when Mr. Spinks, of Mr. Hans Niemands' nursery, Edgbaston, Birmingham, sent us some elegant sprays of it, intimating at the same time that he found it to be a most useful winter-flowering plant. Mr. Burbidge, of the Trinity College Botanic Garden, Dublin, who

also as *Convolvulus pentanthus*. No doubt *J. azurea* will thrive as well as that species did in a warm greenhouse in soil consisting of peat and loam in equal parts with the addition of a little sand. W. G.

### THE FRUIT GARDEN.

#### THE APPLE.

(Continued from page 590.)

**Storing market Apples.**—Those who store late-keeping sorts of Apples for supplying the markets in winter do so in the simplest and least expensive way possible, buildings never designed for fruit storing being brought into requisition in seasons like the present. Places used largely in this locality are barn floors no longer in much request for threshing and the ground floor of Hop kilns, or host houses as they are called, the lofts and drying rooms being useful for sorts that are marketed before Christmas, and the ground floor for those that keep until spring. They are put into large heaps and quite buried in clean Oat straw, merely leaving them open the first month after gathering to allow any exhalation emitted by them to pass off. Such kinds as Wellington, Graham's Russet, Golden Knobs, and Winter Queening or Northern Greening, if gathered dry and stored in good condition will keep for months with scarcely any loss. They are covered up well in case of frost, but on the ground floor they are far safer than in any kind of upper storey, and doubtless the moisture that is constantly rising keeps the Apples from any appreciable loss on account of shrivelling. If by chance the frost gets at them it is best to let them remain undisturbed and closely covered up until some time after the frost has gone. Some sorts are but little affected by frost, while others are quite spoilt by it. It is not advisable to try to keep Apples very late in the season, for when forced Rhubarb comes into market and gets cheap the season for old Apples is practically over. A month before and a month after Christmas is the time when growers find the best market for the bulk of their keeping sorts of Apples.

#### Gathering and storing for private use.

—An Apple room for keeping a supply of fruit for the longest possible period must be constructed so as to be capable of resisting sudden fluctuations of temperature, and although it requires ample ventilation both at bottom and top, yet the ventilators require to be carefully fitted, so that the house can be closely shut up in case of need, as after the fruit has been stored some time the closer and freer it is from draughts or currents of dry air the better. A thick coating of straw or reed thatch is preferable to slates, tiles, or any other roofing, and there should be double walls or an air chamber all round, as an equable temperature is of the first importance, rapid changes not only inducing decay, but causing it to spread rapidly. If any one wishes to put this to a practical test, let him pick up some windfall or bruised Apples, and place them in a close room, and leave an equal quantity lying on the Grass under the tree. He will find at the end of a week or so that those indoors will be nearly all rotten, while those on the cool Grass will be scarcely changed at all. The Apple room should be fitted up with shelves in tiers for the choice fruit that may be put in single layers, but the hard-keeping kitchen Apples may be put in bins or divisions on the floor. The best time to gather Apples for storing is during the month of October, when nearly all late sorts will be found to part freely at the footstalk by gently turning them on one side; they must be carefully handled, and the baskets



*Jacquemontia azurea*; flowers blue.

(Sketched at Trinity College Botanic Garden, Dublin, December, 1881.)

which must be placed over the young plants when planted out or soon after. No earwigs attack the flowers, because they cannot get to them if the pans be carefully kept filled with water. The single Dahlias figured in our plate are Beauty of Cambridge, scarlet; Duke of Teck, rosy lilac; The Baron, mulberry; White Queen, a fine kind which we have before illustrated in an engraving. These varieties are all to be sent out next spring by Mr. T. S. Ware. We hope to publish at an early date an essay on single Dahlias, their varieties as suited for different purposes, and their culture, by one who has paid special attention to the subject.

The descriptions of the various types of the garden Dahlia are given in *THE GARDEN*, p. 352, Vol. XII., and p. 154, Vol. XIX., to which we refer our readers. W. G.

kindly sent us the annexed sketch, writes: "Here is a sketch of *Jacquemontia*, vivid blue with five white-headed anthers and a clear white eye. Like other *Convolvuli*, it has spirally-twisted buds, and the thin silky tissues of the corolla are stretched and supported by five thicker midrib-like portions of the corolla thus (a). It is a rare bit of genuine blue for November. Mr. Spinks tells me he raised it from imported seeds." This we believe is now the only species of *Jacquemontia* in English gardens, though some years ago there were two or three others, notably the pretty *J. violacea*, known





should have some kind of soft lining to prevent bruising if they have to be carried far, but if the trees are near the store house we find it best to carry them in the gathering bags previously mentioned, and to lay them gently in the places assigned to them; the larger they are the more liable they are to bruise. I need scarcely say that if possible they should be quite dry when gathered, and on no account must the footstalk be pulled out, or it will induce decay. To supply a private family a succession of sorts that will come in for both kitchen and dessert is of the first importance, and sorts that are useful for both kitchen and dessert should enter rather largely into the list, so that if one fails, others may be available. As a rule, the best dessert Apples, if large enough, are good kitchen Apples as well. Keep using the sorts as they become ripe, and remove all decaying ones as soon as observed, so as to keep the atmosphere sweet. Give air at the top, so as to keep the internal temperature as uniformly low as possible. If any dessert Apples are required to ripen quicker than they come on in the fruit room, pack them in boxes and remove to a warmer room or closet, as required. In fact, for the benefit of late keeping sorts it is best to remove ripe fruit to another compartment, as what we call ripeness is close to the first stage of decay, and the exhalations arising from fruit stored in quantity are liable to affect the quality of the remainder. Moreover, it generally happens that in the first part of the winter Apples have to be stored in thicker layers than they should be, and as the early kinds are used the later ones can be given more room. In the case of very late keeping sorts I would always bring them down from the top shelves to as near the ground floor as possible, as there is, as I have said, always a certain amount of moisture rising therefrom that keeps the fruit from shrivelling. Any very choice kinds may be wrapped singly in tissue paper and packed in single layers in shallow boxes. When the building in which they are stored is not frost proof, the best covering is soft straw, which, if thoroughly dry, will absorb superfluous moisture and still keep thoroughly sweet. Hay gets musty if damp and imparts a bad flavour to the Apples. For choice kinds, soft dry Moss is as good as anything, each fruit being wrapped in tissue paper or cotton wool, and then placed in layers in a bed of soft Moss.

**Apples for exhibition.**—We have now Potato shows; therefore, why not Apple shows? If an Apple show were only once started there would be no question of its success and continuance. Those who take an interest in having Apples fit for exhibition generally grow a lot of young trees grafted on Paradise stocks and treated very liberally as regards soil and top-dressing. The crop is thinned very severely, and the shoots carefully pinched so that the fruit gets its full share of nourishment, and the leaves are returned aside to let it get fully coloured. Each fruit is enclosed in a muslin bag or small net like a Cabbage net; that saves it from being bruised if it drops, and keeps birds from picking it at the stalk. These are preferable to muslin bags, as they admit the sun's rays to colour the fruit, a most important thing with Apples, either for sale or exhibition. They are gathered and stored like other choice kinds and are handled and packed as carefully as eggs would be, and any one interested in Apples that saw the collections from this locality at Hereford, or more recently at South Kensington, will, I am sure, admit that there is ample room for improvement in Apple culture. Taking the country generally into consideration, success in this or any other speciality is not the result of chance, or attributable to soil or climate, but rather to unremitting attention to all the minor details of

culture that the subject taken in hand is found to require.

JAMES GROOM.

### ENGLISH-GROWN LEMONS.

ORANGE trees may be found in most gardens, but as a rule they are so badly managed as to hardly ever pay for the space they occupy, the heat given them, and the cleaning they generally require to keep them fresh looking and healthy. In most instances they are grown for ornament, and seldom for the value of their crops, although doubtless all who grow them would be glad to make their culture profitable. This, however, will seldom be the case where Oranges only are grown; but if Lemons are taken in hand, I feel certain that they might soon be made as profitable as any other indoor fruit. They are easier grown than any of the Oranges, and they fruit far more freely, which makes them more useful as ornaments. Here we have many kinds of Oranges, some producing large fruit and others very small, but none of them are so much admired as the Lemons, which always bear and ripen heavy crops of beautiful fruit. In this respect they are more certain than the Oranges or any other Citronwort in the same temperature and under the same treatment. With the exception of keeping out frost and expelling excessive moisture, we never apply fire-heat to our Lemons, but treat them more like Camellias than any other class of plants I can think of, and under this treatment they succeed perfectly. They produce abundance of "Orange" blossom in spring, form their fruit in clusters or singly, and ripen it in perfection without any forcing. As you will see by the sample I send, they are juicy, and I am told that they are better flavoured than imported fruit. For flavouring they are indispensable, and they cannot be had in the shops at certain times of the year, but when grown in greenhouses they may be gathered and used from the trees every week in the year.

As has just been stated, they are easier cultivated than any of the Oranges, as they will grow and do well in less heat, and bad management does not throw them so quickly out of health; in fact, they are the hardiest of all our shrubs under glass. They bear fine crops, and are always a source of pleasure. Lemon plants, too, will bear a number of fruit when quite small, and large ones may sometimes be seen with hundreds on them.

They may be grown well in pots, boxes, or planted out in beds, and as wall trees under glass nothing can be more satisfactory, being both highly ornamental and most useful. They grow best in a rich, well-drained soil, and should have plenty of water at the root while growing freely, but not much when comparatively at rest, or during the shortest days, when they are not much excited by heat. The tree from which I gathered the samples I send is bearing about 200 fruits, and when in that state its appearance may be imagined. Next to Lemons we prefer the Bergamot Orange, a very hardy, free-fruited, ornamental sort. But scarce as the Lemons are, the Bergamots seem more so, as it is seldom we have ever seen trees or fruit of the kind in any garden.

Maryam.

[Very large and good Lemons as we have seen at home or abroad.]

### Apple Transparente de Croncels.

At a recent meeting of the French National Society of Horticulture, Messrs. Baltet, of Troyes, exhibited this variety, of which the Pomological Congress thinks so highly as to include it in their select list. It is an early kind, ripening from the end of August to October, large and highly coloured, and agreeable in flavour. It is said to be

exceptionally hardy, having survived the severe winter of 1879-80, when so many fruit trees perished in France. If so, this Apple should get a good trial in this country, for it is just such robust kinds that we most need.—J. C. B.

### STORING APPLES IN BARRELS.

"PEREGRINE's" remarks on storing Apples in barrels are most suggestive. No doubt fruiterers prefer them. They are handy to store and easy to move, and it seems probable that if home fruits are to hold their own in our market, they will have to be packed on foreign models. I was struck with the following remark in the report of the Liverpool Fruit Market a few weeks ago: "The English supply is thought little of, and has no effect on prices." And this was said in reference to the Apple—our national fruit, as it might be called. No effect on prices, and a matter of indifference to our fruit merchants! It seemed a disgrace to our national horticulture that it should be possible to make such an observation. No doubt our fruit markets are chiefly in the hands and almost wholly in the power of comparatively a few large purchasers. These again will purchase the fruit that yields the largest profits with the least trouble or expense to themselves. It is easy to see how boxed or barrelled fruits that remain in these till sold fulfil these conditions. Sent in baskets to be unpacked almost immediately causes far more trouble and increases the risks of decomposition many-fold. Hence, in self-defence, home growers will probably have to pack on foreign models. Whether the British-grown fruit, however, will bear the same treatment remains to be seen. No doubt some of our finer and hardier varieties, as Cox's Orange, Ribston, Blenheim, King of the Pippins, Dr. Harvey, Court Pendu Plat, many of the Russets, Reinettes, Pearmaines, and Nonpareils would do so. If found to answer, the same plan might be adopted in fruit rooms, cellars; in fact, the barrel system is but an extension of the jar system once so common. Boxes, again, are only larger drawers, and most of those who have reached middle age will have memories of the old fruit rooms with their regiments of jars and drawers for all the finer sorts, many of which had also the additional protection of tissue paper, sand packings, &c., all of which tended to isolate the choicer fruits the one from the other, while the whole mode of packing was based on the principle of rendering the mass air-proof. D. T. FISH.

**Pruning Apple trees** (p. 557).—What I wrote was that "trees whose shoots are topped every year with a sharp knife, or secateur, never need what the advocates of letting them alone call pruning, i.e., cutting out several faggots of wood from a large tree, an operation that usually gives it a check, from which it does not recover for several years." What I mean by the advocates of letting them alone is those who neglect their trees for a series of years, and then suddenly clear them of wood by the cart-load, a practice exceptional in Kent, but followed in some places, and that is what is termed giving them a good pruning. The statement just quoted may not be so clear as it ought to be; but it is the result of my own observations in a district where Apple growers abound. And I think anyone who has visited the exhibitions at Hereford, Kensington, and other places will admit that my neighbours about Maidstone are able to hold their own in Apple culture against all comers.—J. GROOM, *Linton*.

**Root pruning.**—Some time ago I planted a number of both pyramid Pear and Apple trees round the borders of the kitchen garden. The Pears were upon the Quince and the Apples upon the Paradise stock, and our soil being light with a sandy subsoil, some of the trees of both sorts grew vigorously, while others scarcely grew at all. In order to stop the vigour of the strong growing ones, and to bring them into a fruitful state, we adopted root-pruning, and the weak ones we headed down to give them a fresh start. As the work proceeded we gave each weakly tree about two barrowfuls of heavy clay soil, mixing



it freely with the best of the garden soil round the trees. And now after a season's growth both sorts are bristling with fruit buds. The cankered ones have made fresh growth after getting their roots amongst the fresh soil.—J. MILLER, *Clumber*.

### Cropping between Strawberries.—

Although many suggestions have been made from time to time as to the utilisation of the intervening space between rows of newly planted Strawberries, few seem to care to avail themselves of them to any appreciable extent, probably for the excellent reason that, as a rule, the planting of Strawberries follows other early summer crops, and with the exception of single rows of Lettuce or autumn-sown Onions for spring pulling, there are few things that it is advisable to sow between the rows; indeed, in most gardens where Strawberries are grown in pots and fruited early it is the rule to turn these out for the production of new plantations, and these in rows 2 ft. apart are so strong as to leave little intermediate room, and if late summer crops of any kind were sown the Strawberry plants must suffer. It is when large plantings of strong runners take place that some other crop is found desirable, but it is doubtful whether any crop will pay better than an intermediate row of runners which might be cut out as soon as the fruit was taken off, and the surface of the soil well disturbed to encourage runners from the permanent plants to root. In the case of a plantation of some half-dozen rods in a small garden the winter cropping of Strawberry plants is a matter of small moment as far as the value of the crop to be obtained is concerned. It is when several acres of ground are planted with runners at 2-ft. intervals that the utilisation of the soil is of the first importance. Strawberries follow well upon early Potatoes, and, indeed, the runners may be planted on the ridges as fast as the Potatoes are lifted, and when the furrows can be either forked up or be broken up with the horse-hoe the most suitable crop is either Lettuce, winter Onions, or a single row of Coleworts to be pulled early.—A. D.

**Clovenfords Vine borders.**—The name of Mr. William Thomson is a sufficient guarantee, and so is that of the vendor, Mr. Cowan, that the new manure advertised in your pages will be a good one, but it will surprise a good many, as it has done me, to learn that the borders at Clovenfords are composed of soil of "the poorest description," and very cold as well. I once saw these Vine borders, and I observed that the soil consisted of a good strong loam, just such a soil as one would expect such a good cultivator as Mr. Thomson to select, and in fact I understood that the situation was chosen on account of its soil, for the locality is not of itself a likely place for a vineyard. I was informed also that some of the finest Muscats ever exhibited in Edinburgh had come from the same neighbourhood. From the descriptions that have been given of Clovenfords at different times, too, I always understood the borders had been artificially made throughout, and of the best materials.—A. H.

**Barking and dressing Vines.**—No doubt opinions will differ as to the value of both barking and dressing. For my own part (when there are no insects upon the Vines) I look upon them as doing neither good nor harm, and in gardens where no other plants are at any time allowed to be grown in the vinery to encourage insects I look upon both processes as a waste of time. Were it not that the Vines come in generally for constant syringing when first breaking, which washes off the dressing, I believe dressings would be a positive injury through their stopping up the pores of the stems. How much of the deleterious ingredients, too, used as dressings is absorbed by the Vines one cannot tell; therefore I am of opinion they would be better without them where there are no insects to destroy.—J. C. C.

**English v. foreign Grapes.**—French and Italian Grapes are continually being compared with our hothouse Grapes, and sometimes said to excel them, I have eaten all the kinds of

Grapes to be bought in the markets of France, Italy, Germany, Belgium, Switzerland, and Australia. As far as I am a judge of flavour I must say that I never tasted Grapes in any foreign country equal to those grown in England. As to finish and size of berries, English Grapes are far ahead of any I have seen elsewhere. I have been told by some American friends that our Grapes are better than any grown in California. I cannot, however, speak of Californian Grapes from personal experience, as I was in that country at the wrong season of the year for Grapes.—G. A. PASHINGHAM, *Milton, Cambs*.

**Pruning Gooseberries.**—It is generally admitted that it is from the young wood of Gooseberry trees that fruit is produced; then how is it that one sees them spur-pruned similar to Red Currants? It may be that where I have seen them so pruned is the exception, not the rule; and it would be interesting to know if any of your readers can verify my observations. The pruning of Gooseberries should consist in well thinning out cross-shoots and any that are too crowded, and this when well understood will produce well-shaped and fruitful trees. I fail to see any good result in training these as advised in some books, as the knife in efficient hands is preferable to pegs and saves much time.—J. S. T.

**Scale on Pear trees.**—C. A. Campbell.—Your Pear tree is attacked by a Tortoise scale, a species of Lecanium; brush the affected parts with soft-soap and water, and scrape them with some blunt instrument, or rub them well with a stiff brush or rough cloth to kill and remove the scale, then dress them with 1 lb. of soft-soap and  $\frac{1}{2}$  lb. flowers of sulphur in four gallons of water, or  $\frac{1}{2}$  lb. soft-soap,  $\frac{1}{4}$  oz. of black pepper, boiled in four gallons of water for twenty minutes, and then thickened with lime until of the consistency of paint; use it warm and brush the mixture well into the cracks of the bark.—G. S. S.

**Strawberries in December.**—I enclose two trusses of Strawberries for your inspection. The plants in the pots I cut them from are in full bearing. I have had a supply all through the autumn, and will have for some time yet to come. If any particulars regarding their culture would be of interest I will be glad to supply them.—R. CARTER, *Waresley Park, St. Neots*. [Vigorous stems with healthy berries in various stages, some ripe and large. We shall be glad to find place for anything Mr. Carter may say of their culture.—ED.]

**Pines in pits.**—"C. L." (p. 578) may grow and ripen Pines in a pit  $7\frac{1}{2}$  ft. by  $7\frac{1}{2}$  ft., provided they receive proper treatment. Montserrat or Smooth Cayennes are the best for October. It takes from eighteen months to two years from the time when the suckers are potted until the fruit is ripe, the time varying according to the size and the treatment they receive. It requires considerable practice to ripen Pines at any given time.—JAMES SMITH, *Waterdale*.

—Pines may be grown and ripened in the pit described, provided it can accommodate a bed of leaves from 4 ft. to  $4\frac{1}{2}$  ft. deep well trodden down, into which the pots should be plunged. The top temperature for the next four months should be from  $60^{\circ}$  to  $65^{\circ}$ ; as to kinds, they should be Queens or Smooth Cayennes. To have ripe fruit in October start them in the end of May or beginning of June.—M.

**Barren Filbert trees.**—I have an avenue of Filbert trees, about seven years old, on which there has never been any Nuts. Could you advise me what to do with them? they are in an open place, on a clay soil. I mulched them with rotten manure last year, and they threw up a lot of young shoots.—J. A.

**New Peach, Henri Michelin.**—The French National Horticultural Society describes this as a good fruit, with juicy flesh, melting and sugary. It was raised by M. Bonnel, an amateur, at Palaiseau (Seine-et-Oise).—G. C. B.

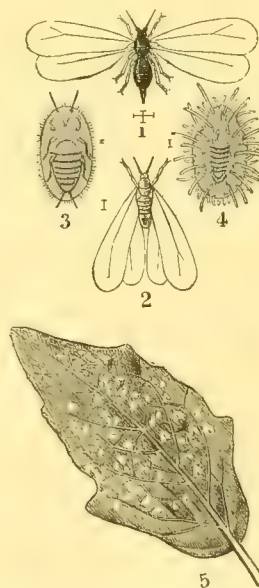
**Grapes for a cool house.**—Sorts that will succeed in a cool greenhouse with the Black Hamburg are, 1, Royal Muscadine; 2, Buckland's Sweetwater and Foster's Seedling.—J. S. W.

## GARDEN DESTROYERS.

### THE SNOWY FLY, OR CABBAGE-POWDERED WING.

(*ALFUEODES CHELIDONTI*.)

THE snowy flies are much commoner insects than is often imagined, for they are so small, and living as they do on the undersides of the leaves of various plants, that they often escape notice, and their larvæ are so minute and inconspicuous in colour that it requires a close examination of a leaf to detect them. At times they may be found in great numbers, and they then are the cause of much injury to the plants they attack. They usually infest Cabbages of various kinds more than any other plants, but they also at times attack Strawberry plants, Tomatoes, and some plants in greenhouses. I once saw a plant of *Helianthus major* in a small greenhouse which was much injured by them. Only a few weeks ago a note containing some of these snowy flies, and some leaves on which they had been feeding, was forwarded me from a correspondent of THE GARDEN, who stated that his whole garden was infested by them, particularly his Strawberry plants in pots and Tomatoes. The leaves sent to me were literally covered



Figs. 1 and 2, the Snowy Fly (magnified); fig. 3, the Larva, underside (magnified); fig. 4, the Pupa (magnified); fig. 5, back of leaf with *Aleyrodes* (natural size).

with this insect in various stages, and they appeared to be very much injured by them; at times Cabbages are covered much in the same manner by this little pest, so that if the plants are shaken the air near them is filled as it were with diminutive snowflakes. Though the snowy flies hardly measure more than 1-10th of an inch across the wings when expanded, and their larvæ are not more than 1-20th of an inch in length, yet as in these states they live on the juices of the leaves which they attack, they are a good illustration of the old Scotch proverb that "Many a mickle makes a muckle," for the continuous drawing off of the sap by so many mouths soon causes the leaves to become discoloured and turn yellow.

These are troublesome insects to destroy in greenhouses; they may be killed by Tobacco smoke, but plants out-of-doors can very seldom be treated in this manner, and as the insects are on the back of the leaves it is difficult to reach them with anything else; they might, however, be syringed with advantage with soft soap and water, Gishurst Compound, Tobacco water,



or any mild insecticide. The plants when wet may be dusted with lime or soot, but the better way is in this, as in many other cases, to carefully examine the leaves of a plant as soon as they begin to look unhealthy, and to try and find out the reason of their being so. If this insect be the cause, pull off the affected leaves and destroy them; they should be burnt or buried. Throwing them on to the rubbish heap is of no use, as the insects will breed there quite comfortably, and will probably get into other plants. These insects may be found at all seasons of the year, and they breed probably in the winter almost as freely as they do in the warmer weather, but they are generally most abundant towards the end of summer. They lay their eggs, which vary in number, but seldom exceed thirty, in a ring covered with a white powder; on the undersides of the leaves the young larvæ are hatched in about a fortnight, or rather less, and, piercing the leaves with their probosces begin to suck the juices from them. In about ten days time they become pupæ, or chrysalides, and a few days afterwards the perfect insects emerge.

It has been calculated that from one pair in twelve generations 200,000 individuals may be produced, so that their rate of increase is very rapid; it is fortunately checked to some extent by certain insects which prey upon them. The grubs of a small beetle, nearly allied to the lady-birds, feed on them, and the parasite grubs of an insect belonging to the Ichneumonidæ or Chalcididæ live within them, and kill them before they reach maturity.

The snowy flies have often been mistaken for small moths, on account of their having four wings, which are very equal in size; and being covered with a fine white mealy powder or dust, have much the appearance of very small white moths; even Linnaeus described them as such. They, however, really belong to the family Aleurodidae, which is a connecting link between the aphides or greenfly and the Coccidæ or scale insects. They resemble the former in having four wings, and the latter in their immature states and in the construction of their wings, which are almost nerveless.

This family contains only one genus (*Aleurodes*), which consists of two species, which much resemble one another. *A. chelidoni* hardly measures 1-8th in. across its wings when fully expanded. The head, thorax, body, and legs are of a pale yellow colour; the head is furnished with a pair of delicate antennæ, consisting of seven joints, the basal one being short and thick; the eyes are reddish brown, with a transverse division across their centres, so that the insects appear to have two eyes on either side of their heads. They are not visible when looking at the insect from above, as the width of the head prevents them from being seen. Near the apex of the body is a kind of tubercle, which apparently represents the cornicles of the aphides. The wings are large in proportion to the size of the insect; the upper pair have each a central nervure dividing into two near the end of the wing; the lower pair are nearly as large as the upper, and have a simple central nervure. Both pairs are white and transparent, and are covered with a white mealy powder which is easily rubbed off. The chrysalides or pupæ are about a 20th in. long, and are white and glossy, with a slight yellowish tinge in parts; the reddish eyes of the future insect are visible through the outer skin. Round the edge of the chrysalis is a double row of curved transparent threads, those of the inner row being much longer and fewer in number than the others. The larvæ when full grown are much the same size as the pupæ; they are white, with two yellowish spots near the apex of their bodies, and are fringed round their edges with fine hairs. The head is furnished with a fine pair

of antennæ and a short proboscis; the legs are short. The last joint of the body is terminated by two fine hairs.

G. S. S.

## THE FLOWER GARDEN.

**Single Clematises.**—Some of the single species of *Clematis* have lately been very fragrant and pretty, as they always are. Nothing we know of would be more agreeable than



*Single Clematises.*

hunting up the more graceful and pretty of the species that are as yet unknown to us, or at all events little grown. They may be considered the very type of the graceful hardy northern climber, shoots and flowers being alike beautiful, and the odour sometimes very grateful. We occasionally hear of some of the American kinds, and wish some of our readers in that country would tell us of the aspects the better kinds present; probably they may not be all known to the natives there, particularly as it is only of late we had the scarlet *Clematis* from America,

and so little was known of it in its country that horticulturists there did not know what to make of it when they heard of an American scarlet *Clematis* flowering in a European garden. These *Clematises* may be used in a variety of ways in a tasteful garden, covering railings or a gate post, if nothing better; a kind of open rough covered-way, made of the stems of trees is also admirable for them. There is a bit of such at Belvoir. One can imagine nothing more charming than a bank of shrubs with various species of wild *Clematis* clambering through them.

## GROWING ALPINE PLANTS.

I DID not intend to trouble you again about the cultivation of alpine plants, but the *cacoethes scribendi* has, I suppose, got the better of me, and I shall ask you to put up with another letter about them. It was not in the least in my mind to say that the question of soil may be altogether left out of sight in this matter. I thought I had expressly guarded against such an idea. What I did mean to say was that, in my opinion, any ordinary compost—such, for instance, as that which Mr. Jackson recommends—will do very well for a large percentage of alpine plants, and that no further care need be taken about them. This is a very different thing from asserting that the question of soil has no importance at all, which could hardly be imagined. Outside of this large number I know that there is a residuum of very difficult subjects to deal with; so difficult are they, that every kind of assistance is needed in growing them, and soil and everything else that will give a chance of success must be taken into account, and even then it is at best problematical.

I wish to assure "Canonicus" that he is about the last person whose opinion I should be ready to controvert about this sort of thing. I know the great attention which he gives to his favourites, and the success which he has with them. It is very instructive to visit his garden in the bright months of the year, and I like to compare notes with him. He, however, brought to the front a question which has for some little time been before my mind, and I do not yet see that much light has been thrown on it. It is quite one thing to say that in Switzerland or elsewhere certain plants affect certain soils, and another thing to say that they do so here. The first of these two points may not be disputed at all; the second is still full of mystery, and well-nigh inexplicable. Mr. Wolley Dod puts it plainly enough when he writes (see p. 559), "I find many plants flourishing and happy in my garden which have no right to be there at all—lime-loving plants in beds of pure peat, and lime haters in the crevices of a limestone rockery." Language could hardly be more expressive than this, and I only referred to paradoxes of a somewhat similar sort.

I am sure, however, that this correspondence has done good if it brings out nothing more than Mr. Harvey's letter of the same date. We have a mass of information given to us there of a very interesting sort, and his instructions will be a kind of *vade mecum* with me for the future whenever a special difficulty occurs. I only rejoice that it is the exception to the rule and not the rule itself when such minute attention is wanted. "Canonicus" is afraid that the physique of my alpine plants must be suffering from the want of due care. I hope to have the pleasure of another visit from him next spring, and then he can judge for himself; meanwhile let me narrate the following: Some little time ago the late Mr. Joad, whose early death we all lament so much, was in want of a plant of *Edraianthus dalmaticus*, and he asked me if I had one to spare. It so happened that I was just then in possession of



two plants of *Edraianthus dalmaticus*, and I sent one of them to him. In his letter of acknowledgment he said, "You have sent me the best specimen of *Edraianthus* I have ever seen in England; I only wish that alpine plants would thrive with me as they seem to do with you." Now Mr. Joad was unquestionably a very good judge, and he referred to the size and the evident vigour of the plant with which he had been supplied. But if *Edraianthus dalmaticus* can do well when grown in a comparatively hap-hazard way, it stands to reason that many other alpine plants will also succeed with the same treatment. It comes, I believe, from the high Alps, and may be taken as a representative of a very large class; and what is rather remarkable is that Mr. Hatfield pitched on it the other day in your columns as a plant which must have calcareous soil, and whose idiosyncrasies ought to be attended to. I can assure him, however, that the need for this is not so great as he imagines. The specimen which I sent to Mr. Joad was not even grown upon a rockery at all; it was treated to no calcareous soil; it had been simply planted in a nearly level border of pure loam, with a dash of sand in it to keep it open, and in circumstances such as these it had done well for a long time. A sister plant of that to which reference has been made is growing in precisely the same sort of place and in the same sort of way, and I think it bears me out in the assertion that it is possible to *finesse* a little too much about the cultivation of alpine plants, though of course some considerations about soil should be entertained. With regard to situation let me just say a word. I do not think that I ever asserted it to be "all in all," though I do attach the greatest importance to it. I believe it to be a factor in the way of success, which is absolutely indispensable, but of course I should not go so far as to say it carries everything else with it. "Canonicus" has not quite got hold of my meaning, or I may not have expressed myself properly. As an illustration of the above I will give you a striking case. One of the best gardeners I have ever known, and one of the most earnest lovers of nature in every way, the late Rev. Darwin Fox, had about the worst furnished garden I ever saw. There was very little in it worth looking at, and Mr. Fox used to lament his hard fate most bitterly, for it came about in this way. He lived about three-quarters of a mile out of Sandown, with the sea not far off on the south side of him, and with a very large tract of marshy land, which is constantly flooded in winter, stretching out to the north and far too near him to be pleasant. Moreover, the south-west wind used at certain periods of the year to tear over his grounds, and that was not likely to help him. The consequence of it was that with his great scientific knowledge, his unbounded love of plants, his ample time, and the means which he had at his disposal, Mr. Fox could not do much when he was living at Sandown.

Situation wrote doom on his efforts, and he was painfully alive to it himself. Very frequently when I offered him a plant which he admired, he has said at once, "There can be no good at all in my taking it; it will only die. I cannot make anything do well with me!" I remember this taking place with regard to *Oxalis lobata*, which was a special favourite of his; he liked the setting of bright green leaves for the little golden blossoms which lie open to the September sun, but he never once took it from me and attempted to grow it. He knew the attempt would be fruitless, and the same sort of thing has happened with regard to alpine plants.

I am thankful to say about my own garden that situation fights for me splendidly, and I am not at all circumstanced as Mr. Fox was at Sandown, but between two extremes all kinds

of gradations may be found, and I think there is more or less of difficulty in growing any particular plant just as situation is more or less favourable. Mr. Fox lived in the Isle of Wight just as I live in it, but climate was not enough to carry him through without any accessories. I am afraid I am pursuing the subject *usque ad nauseam* for some of your readers, but let me conclude with the admonition which Canon Ellacombe gave us the other day in your paper. Not every garden suits every kind of plant. It is surely wise to discriminate and to go in mostly for those things which take most kindly to us.

HENRY EWBANK.

P.S.—Since writing the above I have read Herr H. Gusmus' letter in your last impression. With regard to certain plants being killed in five or six weeks in soil containing lime I have nothing to say, for I have not made the experiment, but I am bold to assert that many plants from the calcareous formations do not die of hunger with me from want of lime. I have grown *Gentiana punila* a long time in pure loam with sand in it to keep it open, and I think the same may be said of *Gentiana Froelichi*, but I am away from home and I cannot be quite sure about this. *Saxifraga Burseriana* I know will get on quite well without lime, and if I could walk round my garden I am certain I could mention some others. The eccentricities of plants, however, have a much wider range than the love or the dislike of lime.

#### ALPINE PLANTS AND SOIL.

THIS much vexed question still requires to have light thrown upon it. The experience of nearly every writer differs in some respects from that of others. There are probably many plants from special alpine regions which with a view to their successful cultivation must have special conditions provided for them, but I am inclined to believe that in most of these cases atmospheric winter conditions are of much more importance than soil; given a good deep bed of well prepared, generous soil containing the ordinary constituents of plant life, by far the bulk of the plants worth growing will succeed, and soil probably in the majority of cases has nearly all to do with it. To illustrate my meaning Mr. Ewbank says *Saxifraga Burseriana* will only succeed on the top of a hill with him. My experience is just the reverse; the healthiest tuft I know—and it is just like a lovely patch of green plush—is growing in a damp bed of peaty soil in a partially shaded rockery in a valley quite surrounded by trees, and not 30 ft. above high water level. It blooms annually, and seems perfectly happy. In this case it cannot be any free and breezy condition of the surrounding air that favours it, for such does not exist. It is living in a state of constant humidity with water flowing on each side of it.

I have great faith in soil, and may here detail the method pursued in making a small rockery recently. First there was a good foot of rich ordinary loam; on this we spread 9 in. of vegetable refuse, old potting soil, old hot-bed manure, half decayed leaves, hedge clippings, sweepings, and *omnium gatherum* generally; then 4 in. of drift sand and the scourings of a watercourse were put on; then 4 in. of peat soil. We trenched this all up together and afterwards turned it back again: it was then pretty well mixed, and looked very like soil in which anything would grow. We now threw it up into the various mounds, &c., and proceeded to build in the stones. Thus in some places there is full 4 ft. of fair compost for subjects of a deep rooting character and a varying depth for those requiring less. In all cases I think it better to have 2 ft. of good soil under a plant which only roots to the depth of a few inches than just the requisite quantity. It leaves the plants more at liberty to go where they like, and choose for themselves much or little. Many plants, such as *Sedums*, *Saxifragas*, &c., will grow fairly well on the surface of a wall,

on the mossy surface of a stone, or on a crust of hard gravel, but in all cases they will grow much better on a bed of good soil. It is easy to place sundry stones on the surface to keep them dry, but they will, by a freer growth, show that they appreciate a well-stored larder beneath them. Mr. Gusmus' soil division (p. 340) would no doubt be a fairly safe line to follow, but even here we shall find exceptions. In the compost just named I find *Saxifragas* of every sort (with a very few exceptions) to grow vigorously. Our staple soil is formed entirely of débris from granite, and so should, according to the authority quoted, be specially suited for *Saxifraga diapsenoides* and *retusa*, and yet these two refuse to grow. It is evident there is a want here which mere soil will not supply. On the other hand, the said-to-be limestone-loving *S. elatior*, *Hosti*, *crustata*, *cæsia*, *tenella*, *sedoides*, &c., thrive in the most luxuriant manner, and they are certainly 20 miles from limestone.

I expect moisture plays a very important part in the cultivation of many plants; a great many thrive wonderfully well here, and it rains sometimes every day for months at a stretch. On the other hand, from this cause many things refuse to grow at all, and soon rot away. It is this fact which makes it difficult to lay down any rule whatever for general guidance as to soils, &c. Climatal conditions vary much in different localities, and will always affect, less or more, the well-doing of certain plants; still I am quite satisfied that the first essential to success is a deep bed of good soil.

T. SMITH.

— Allow me to record my experience with regard to a compound which is here thought very highly of in connection with the growth and nourishment of plants suitable for the rock garden. In the case of a large collection of alpine plants it would not be easy in many places to procure the different substances said to be necessary for their growth, and as rock gardening is on the increase a simple method of overcoming that difficulty, and within the reach of everyone, must, I think, be appreciated. My mode of procedure is as follows: During the autumn I collect quantities of road scrapings, which generally contain various manures, fallen leaves, and old turf. These I throw into a heap. Little time is needed to consolidate it, and if allowed to stand over the winter all fresh matter becomes decayed. When required for the rock garden, say for *Saxifragas*, I recommend two parts of this compound well broken up, one part good loam, one part peat and white sand or bits of freestone, with the addition of a little well-rotted manure. Numbers of *Saxifragas* require a lighter soil even than this, as in the case of the crustaceous section, for which I use one part of the compound, one part loam and peat, and two parts white sand and rough freestone. As it is best to have soil somewhat rough than otherwise, I prefer a 3-in. meshed riddle for preparing it. The *Sedums* and *Sempervivums* do well in this compound, which with a supply of good loam, peat, sand, broken freestone, and a quantity of well-rotted manure will under judicious care and judgment suit the requirements of most of the inhabitants of the rock garden. As evidence of the success of this treatment I may assert that we have here nearly 3000 square yards of rockwork every available space or compartment of which is filled with plants, and they are healthy and exuberant in growth, as any one may see who chooses to pay us a visit. Alternate subdivisions exist for a miscellaneous collection of hardy and half-hardy herbaceous plants, all of which receive a large proportion of this easily prepared, but highly important and nutritious compound.

Fettes Mount, Lasswade.

D. A. KING.

— "Canonicus" (p. 585) refers to the lists of plants given by Mr. Whitehead (p. 540) and myself (p. 555). In giving *Saxifraga cæsia* a place amongst "lime haters" I was undoubtedly wrong, both according to the orthodox lists and the experience of "Canonicus." This I knew, or ought to have known, for the material for avoiding such a mistake was at my elbow when I wrote. "Canonicus" would notice I prefaced my list by stating that I was "writing from practical expe-



rience, and my list really was given from memory." A cruceaceous Saxifrage as a "lime hater" seems unnatural, as lime, one would suppose, would help it to assume its crusted appearance. But I had Saxifraga caesia too well in my recollection as a plant repeatedly tried in calcareous loam, and always with failure; and I looked upon this, as I did upon many others about which we had more decided evidence, as one to be "put down." *Primula integrifolia* has considerably improved since it was taken off lime. Since Mr. Harvey's translation of Kerner's list appeared I have begun to think that there are many other things of importance to be taken in conjunction with soil. For instance, *S. bryoides* on limestone gave us considerable trouble; in fact, we completely lost it, and the piece by which it was replaced we also nearly lost. Now, before I saw Kerner's list I had placed it in a very retentive soil with granite, and nothing could succeed better, answering as it did with the requirements given by Kerner.

T. D. HATFIELD.

**Alpine plants and soils.**—A gentleman of much experience in collecting and growing these plants writes: "I take it the positions are clearly proved—(1) to some plants lime is poison. (2) To some it is, if not quite a necessity, yet so nearly so that they will not thrive or be happy without lime. (3) Some plants will live in alien soil, but with a changed character. (4) Some plants will bear with comparative impunity a change from their native soil." [The subject is very interesting, but we can only speak confidently of it when many fair experiments upon it have been made in gardens with plants raised from seed and increased otherwise here as well as with plants taken directly from their native soil. One thing is clear, that some of the plants mentioned as preferring this soil or that will grow in any soil which ever occurs in an English garden.]

#### COLLECTING ALPINE PLANTS.

THE fortnight that "Glengall" proposes to himself will not by any means suffice to explore all the floral localities in Switzerland. Hence I think he would find it more satisfactory to decide upon some suitable district and work it pretty thoroughly than to fly hither and thither from one locality to another. The time of year I would suggest would be the latter part of June, July, and the early part of August. Amongst the places worth visiting may be mentioned Mürren, an alpine village, some 5500 ft. above the sea, and readily accessible from Interlaken. Near the village is a valley called the Blumenthal or flower valley, which abounds with *Trollius*, *Anemone sulphurea*, *Sedums*, *Saxifrages*, and *Sempervivums*, &c., while *Gentians*, *Androsaces*, *Primulas*, *Anthriscums*, &c., are in great plenty. Another interesting locality is the southern slope of the Furca Pass near the Rhone Glacier, and the neighbouring maieinander on the way to the Grimsel. The Riffelberg, near Termatt, is another, while the valley of the Dala leading from the Rhone Valley to Leukerbad abounds with plants belonging to a lower region than those mentioned, while many interesting things can be got by moderate climbing. The Alborla Pass from Coire into the Engadine is also said to be very rich, but I cannot speak from personal experience.

If "Glengall" does not want to send home plants in very large quantities, I would strongly advise him to lay in a supply of oiled silk or gutta-percha tissue and ordinary luggage labels made to tie on, not gummed, and after each day's collection to send home the best plants at once by post. If they are marked on the labels *Plantae sans valeur*, and the parcel does not exceed a certain size, readily ascertainable at the post office, the postage will be very small indeed—15 centimes, or 1½d., sufficing for a good many small plants. In this way they reach their destination far fresher than when packed in baskets or boxes, when they are nearly sure to be either too wet or too dry. For postal packets a little dry moss is excellent packing. They should not be at all wet.

As to troubles about the customs authorities in France with plants, I think "Glengall" must be confusing France with Italy, as I have several times brought plants through the former country without challenge, while they are exceedingly particular in excluding plants of all sorts from Italy, as I know to my cost, having lost a valuable boxful on the Sphyrn in 1880. If France has followed the example of Italy, "Glengall" can leave Switzerland at Basle, and return *via* Frankfurt and Mayence, Cologne and Brussels, or Antwerp.

Respecting the outfit of the alpine plant collector, I would refer "Glengall" to THE GARDEN, Vol. VIII. (p. 272) where the various tools, &c., are described in detail. There is an excellent flora of Switzerland and Savoy, published in French by Professor Bouvier, which gives the habitat of most of the scarcer plants, and is almost as easy to use as if it was in English.

In addition to the places above mentioned, if your correspondent wishes to go into Italy, let him cross the Simplon, and he will meet with *Edelweiss* in abundance, and *Opuntia Rafinesquei* as he descends to Domo d'Ossola.

Dublin.

GREENWOOD PIM.

—In reply to "Glengall," respecting plant collecting, I may say that the latter part of June or the beginning of July is decidedly the best time for a botanical excursion in Switzerland. Perhaps no part affords a greater variety of rare and interesting species than the Termatt district, which, by way of Paris and Geneva, is now easily reached in three days from London. If, after returning to Visp, "Glengall" was to proceed up the Rhone valley and across the Furca Pass, he would reap a rich harvest between the Rhone Glacier and Andermatt, the flora of that part being very rich, and somewhat different from that of Termatt. Returning home by way of Lucerne, Basle, Brussels, and Ostend, he would keep clear of French territory, and would have embraced in his tour some of the grandest scenery in the whole range of the Alps. I may add that the Mont Blanc district from its geological formation affords a comparatively small variety of plants.—A. S.

#### SINGLE YELLOW WALLFLOWERS.

THE bunch of single, bright yellow Wallflowers sent from here for the "Editor's Table" was not of the Belvoir Castle race, but a strain kept true here for many years. The seed is gathered from some old plants growing in *Rhododendron* clumps isolated from any other kind of Wallflowers, for they are readily crossed. For this reason we always keep a few of the true golden yellow propagated from cuttings. Although what is called the Belvoir Castle yellow is the best I have yet tried it generally contains some stained flowers that greatly detract from the effect of masses of it in the spring flower garden. I have a batch of seedlings, both of our old selected yellow, the Belvoir Castle and the Blood Red, and later in the season I hope to send you a sample of each. Although common cottage flowers, Wallflowers are much appreciated in a cut state for the decoration of the mansion, and their grateful perfume cheers many a poor invalid. They are what may be truly called flowers for the million. What a pity it is that the last few severe winters played such havoc with those grand old bushes of double Wallflowers that used to grace our cottage gardens. They are well-nigh exterminated.

Linton.

J. G.

**Raising Pinks and other flowers from seed.**—I am glad to see attention directed (p. 613) to single Pinks. Both these and the dwarf double varieties will prove quite a boon to the flowergardener and bouquetist. To the ordinary eye all florists' Pinks consist of but one variety, whereas amongst the single and dwarf sorts there are endless colours, and the petals of many of the flowers are so finely cut and varied in tint as to render them easily mistaken by the uninitiated for something else. Numbers of the single sorts look like miniature *Petunias*, and we have a

few not unlike *Calochortus venustus*. What flower, too, can rival single Pinks of any colour for table decoration? It is now a quarter of a century since I commenced to hybridise plants with the view of raising improved forms; since that time I have produced many thousands of seedlings, and it is to me one of the greatest of pleasures to be able to select a good flower. All of us indeed ought to do more in this way, so as to make, in time, this country the new plant emporium of the world. Are we, may I ask, not asleep? become, in fact, a multitude of parasites living on the labours of former generations who have produced for us nearly all we possess in the way of fruits, flowers, and vegetables. Tenants at will and others are apt to think that they may never see the produce of what they sow, but let them only make a commencement with a simple annual, and they will soon try others. Employers, too, ought to encourage such work, which, if long neglected, may result in a cry for protection from our lively and more energetic neighbours on the continent of Europe and in America.—J. G.

**Gold-laced Polyanthus.**—I am sorry this matter has turned up again (p. 613), but if your readers care to refer to p. 544 they will see that Mr. Horner puts a wrong construction upon what I wrote. It was a simple question of the effect of Mr. Barlow's overriding the criticism of competent judges upon his own Polyanthus. At the same time I wrote to Mr. Barlow (Dec. 2) to tell him that the two florists I had referred to, and who were acknowledged judges, had had more frequent opportunities of seeing *Sunrise* than I had, and that their reports were *bona fide*, and consequently that his comments were altogether without foundation in fact. My remarks therefore had been perfectly fair and honest criticism, by well qualified judges of the Polyanthus. I need scarcely say that I never for one moment thought, or suggested, as Mr. Horner puts it, that Mr. Barlow would use his power as president to influence the awards of judges. I know and respect Mr. Barlow too much ever to have entertained such an idea. I think it was unwise in him to have written up his own flower, placing it above George IV. and Prince Regent. If Mr. Horner had done it for him there could have been no objection, and this was my only point. I have quite as much confidence as Mr. Horner has in the impartiality and honour of our judges at flower shows, and therefore I pass over his remarks on this head as quite uncalled for, as I most certainly gave no occasion for them.—WM. BROCKBANK.

**Astragalus Tragacantha.**—"Anonyma," I see in his enquiry about rarities, mentions this *Astragalus*. The late Mr. Niven, of Hull, used to be very particular about pointing out to the medical students attending his lectures on economic botany this plant from which the celebrated gum tragacantha is obtained. I have kept an eye open for it, but have never been able to meet with it, at least under either of the names given by "Anonyma." A plant coming to us from Mr. Ware's, named *A. aristatus*, seems to be identical, if my memory does not lead me away. It is four or five years since I saw the old plants at Hull, and it is doubtful if any still remain there.—T. D. HATFIELD.

**Rare plants.**—Allow me to inform "Anonyma" (p. 602) that he can obtain *Delphinium grandiflorum* fl.-pl. (Siberian Larkspur) from Messrs. Backhouse, of York, or from Mr. Ware, of Tottenham. We bought a plant of it three years ago of Messrs. Backhouse, and it has grown most satisfactorily. On some of the blooms from it the editor in "Table Notes" commented in the spring of this year. Several inquiries have come to us as to where to get it. What a grand kind, is D. Beatonii, something resembling the above, only taller growing.—JOHN CROOK, Farnborough Grange.

**Top-dressing.**—If "W. J. M." would turn his manure heap often during summer, and add to it in the process all the burnt weeds and other refuse, of which there is, as a rule, too much in large gardens, lime rubbish, or even road scrapings, he would obtain a protecting material



of which he need not be ashamed, judging either by appearance when spread on the beds or borders in winter, or by the results on vegetation during the following spring and summer. If his soil be old or slugs abundant, a little unslaked lime may be added with advantage to the heap when turning.—ANON.

**Hardy Cacti.**—I was much interested in reading Mr. Loder's remarks on the above, as it is a class of plants of which I am very fond. It is evident your correspondent practises what he preaches, and with what good results his fine group (many of the plants bearing their beautiful flowers) shown at one of the Royal Horticultural Society's summer shows last season went abundantly to prove. I am led to offer these remarks having recently had the privilege of inspecting an extremely fine and extensive collection of these and other allied plants in the possession of Mr. H. Boller, Kensal New Town, his house being filled with these quaint plants, there being about 400,000 of them in 400 distinct varieties congregated together, and what a variety of form they present! I have not yet seen this little lot when in flower, but if spared I hope to do so. What such a sight must be with the gorgeous flowers for which many of the varieties are noted must, I should think, be seen to be believed. It must be confessed, however, that it is not a class of plant which has taken that hold of the public attention which their merits deserve. Easily managed, standing a good deal of knocking about, their hardiness and attractiveness when in a blooming state should, one would think, be points in their favour which might cause them to be more appreciated. But like many other and beautiful classes of plants they are suffering an unworthy neglect; time, however, works wonders, and there seems to be a growing disposition to make some amends for the past, to discard many of the so-called novelties which have been tried and found wanting, and fill their places with plants that have stood well the test of time.—X.

**Opuntia Rafinesquei** (p. 614).—I do not think it can be the rainfall which causes the failure of Mr. Jackson's Cactus at Bangor. In 1876, the year in which he planted it, there fell 35 in. of rain at Bangor. Last year (1880) we had 33½ in. here. Any joint of an *Opuntia* if stuck into the ground will soon send out roots and make a plant, but for the first few years it will be very succulent and tender, and very apt to rot off in winter at the ground level. After a time the older joints quite change their nature and become almost woody. In the south of France and in Algeria one may see old plants of *Opuntia Ficus indica*, the lower joints of which have lost their green colour and flat shape, and have all the appearance of trunks of trees. I do not think Mr. Jackson need fear another failure if he will plant out on his rockery next spring another plant of *O. Rafinesquei* the lowest joint of which is old enough to have become hard and woody. The other joints should have stones placed underneath them to keep them off the ground. When once established the plant grows rapidly.—E. G. LODER, *Floore, Weedon, Northamptonshire*.

**Eremurus himalaicus.**—My friend Mr. Gumbleton received seedlings of this plant simultaneously from a mutual friend. We both flowered it last year at the same time. I exhibited a very fine flower-spike at one of the floral and scientific committees of the Royal Horticultural Society. It is a very handsome flower; I grew it in a glass-house, but I doubt its hardiness in the open border.—H. HARPUR CREWE, *Drayton-Beauchamp Rectory, Tring*.

**Jasminum nudiflorum.**—I have a plant of this in a hot sunny nook, and, curiously enough, the blossoms are two or three weeks later in opening than those on a north wall deprived of the sun's rays. Has any one else observed this peculiarity?—ALPHA.

**Phlox Drummondii in light soil.**—I have tried for four years to grow this *Phlox*, but the soil of my garden being light, it seems to wither under the rays of the sun. I should be much obliged if any one could point out a remedy.—E. R.

## SEASONABLE WORK.

### FLOWERS AND PLANTS IN THE HOUSE.

G. J., SURREY.

THE wonderfully varied beauty of Ivy must not be forgotten in our winter decorations. In white china or any white ware good things may be done with Ivy leaves alone when flowers are scarce. We have arranged a shallow and broad basket-like dish with a surface of the Fern-like Moss and sprays and leaves of Ivy from a sunny hedge-bank. Some of the leaves are a brilliant red veined with gold, some dark red, others clouded red and gold or red and green, and some very dark green with white veins, in colour like polished verde antique marble; these are all small, the largest perhaps 2 in. long. Another arrangement of Ivy leaves is in a large blue and white bowl. The leaves are from one of the large variegated kinds with broad markings of ivory-white, and with them are some great leaves 5 in. across of one of the large green forms. In a blue Venetian glass is a handsome and rather large bouquet of twelve fine spikes of Roman Hyacinth, with sprays of Alexandrian Laurel and some small *Acanthus* leaves. The beauty of *Mistletoe* is not shown to greatest advantage when it is hung up by the heels, as we generally see it. We have it in water in a blue and white bowl, supported by a carved oriental black wooden stand; it is placed rather above the eye, and the golden-green leaves and mysterious white berries are finely seen against a dark background; the whole is a good piece of refined and quiet colouring. A large embossed copper holds seven or eight scarlet *Poinsettias*, rising above a bed of Maiden-hair Fern—a pleasant thing to look to from the grey misty landscape. On the round dinner-table is Holly loaded with berries. A central lamp is surrounded with a ring of fish-globes in two sizes, placed alternately. The Holly is taller in the large glasses, and arches over the alternate little ones, which are filled with pieces that grew in terminal masses of berries almost without leaves; these are cut quite short, and crammed together to show as scarlet masses. The dessert is also garnished with Holly.

### FOLIAGE DECORATIONS.

J. HUDSON, GUNNERSBURY HOUSE.

AN unusual run has lately been made upon the cut flowers, and if it is desired to vary the arrangements as much as possible resort may be had to plants grown for the beauty of their foliage alone. Of these many of the brilliantly coloured *Crotons* when well grown are invaluable; such kinds as *C. undulatum*, *Wiesmanni*, *majesticum*, *angustifolium*, *Johannis*, and the comparatively new kind *Warreni* are all useful in this way. From these a few leaves, more or less, will not be missed if the plants are in vigorous health; even occasional shoots cut from specimens will not deprive the plants of their beauty, whereas they will greatly add to the embellishment of the house. Of this class of plants alone very effective arrangements can be made without any other aid, adding to the kinds above named a few of those with more massive foliage, such as *C. Andreanum*, *Hookeri*, *pictum*, and *Williamsi*, and of the trilobate section, *Disraeli* and *Lord Derby*. Leaves from these will last longer in a cut state if before being arranged they are immersed in a tank of water for an hour or two after being cut from the plant. Of other foliaged plants useful in a cut state there are *Pandanus Veitchi*, with well-coloured leaves, not too large, and the small growing green-leaved kind, *P. graminifolius*. *Peperomia argyrea* is also a durable kind in a cut state, from which one might "cut and come again." *Cyperus alternifolius* and its variegated variety are also indispensable, either associated with other foliage, or grouped with Liliaceous plants. Small leaves of *Alocasia metallica* are also useful, and so are all the *Begonias* that are grown for the beauty of their foliage. *Dracenas* can scarcely be recommended, as depriving them of their brilliant foliage would spoil the plants; I have, however, cut off the tops of plants that had become too tall, used them for a week in vases of water with other subjects, and

then returned them to the propagating pit to be struck, and that successfully. Many Ferns are useful in a cut form; the *Nephrolepis* and *Goniophlebiums* look well in rather large vases, as do also the *Gymnogrammas* of the golden section, especially *G. Lauchiana*, using its fronds inverted. Sprays of *Glacienias*, which can be occasionally spared from large specimens, will be found very durable. Of somewhat hardy plants *Eulalia japonica variegata* is very distinct and effective; so also is the green-leaved Grass (*Gymnathrix latifolia*) and *Arundo Donax variegata*. Of climbing subjects *Myrsiphyllum asparagoides* and the recently introduced trailing sorts of *Asparagus* are all valuable, either for twining around stems, or for suspending from rather tall trumpet vases.

### ROSE GARDEN.

W. H. F. BEESTON.

MULCHING and digging or forking over beds may now be done with advantage. I cannot recommend any better manure for this purpose than well decomposed animal manure, finding, after trying nearly all others, none to answer so well as this for soils in general. Night soil, if used sparingly, may be applied with success to strong land. Exhibition Rose boxes used last summer we should paint over and repair, examine the tubes, order or make ourselves new ones if necessary, prepare tickets, cards, &c., thus filling up long evenings, knowing that when the days get longer our leisure time will be required outside.

### FLOWER GARDEN.

J. SHEPPARD, WOOLVERSTONE PARK.

THIS being a slack time of year in the flower garden, a good opportunity is afforded for looking thoroughly through shrubberies to see what requires thinning, for although evergreens should not be moved now, it generally happens that the commoner kinds encroach on others, and if not looked to and cut away, soon damage them in such a manner as to permanently injure them and quite spoil their beauty. To show off as they ought, each plant should stand clear of the other, and if there is any bare ground between, the space may easily be furnished and beautified by planting any of the hardy kinds of bulbs, such as *Snowdrops*, *Daffodils*, &c., and the more open parts near walks with *Crocuses*, *Hyacinths*, *Primroses*, *Aubrietias*, *Wallflowers*, or anything of that kind that will stand and take care of themselves. The mistake that is generally made in the formation of shrubberies is in following the higgledy-piggledy system of planting instead of making a proper selection of suitable subjects, and arranging them according to their habit and character, giving them plenty of room to grow to their natural size without encroaching on each other, a plan that should always be adopted, as then the filling in between may be done with any common material such as *Laurels*, which can be gradually cut away as the others extend. By pursuing this course, much after trouble in regulating and re-arranging is saved, as the plants being put in suitable positions at first there is no occasion to interfere with or molest them again. The pruning requisite for deciduous trees and shrubs consists mainly of a thinning out of the branches where they are crowded by crossing and intersecting each other, and beyond this and the removal of dead and decaying wood, the less of the knife the better. Whatever cuts are made should always be close to a bud or shoot, as then there is no dying back, and the wound quickly heals over. Although it is not desirable to prune established plants, a shortening in and reduction of the head is often a great help to large trees fresh transplanted, especially if they are not well rooted, as it strikes a more equal balance as it were between the two, and gives the tops a chance of receiving what sap they require to keep the bark fresh and plump. What interferes with newly-moved trees and shrubs more than anything else and prevents their taking fresh hold is the want of proper support, without which they are ever on the move and



the sport of every wind that blows, which sways them to and fro, and chafes off the tender fibres as they form by the straining and friction of the roots as they are pulled and pushed backwards and forwards in the ground. This being so, it will be seen how important it is that they be securely staked and tied to hold them fast in their places, which, if the plants are large, can easiest be done by using three poles tripod fashion and bringing the upper ends so as to take the stem of the tree at about two-thirds of its height. To prevent any chafing of the bark the stem should be well protected by a good packing of hay under the supports or by the use of old pieces of carpet, which are perhaps the better of the two. For trees on lawns where neatness is a consideration, stout galvanised wire may be used instead of stakes, and if the lower ends are made fast to stubs driven into the earth, such supports answer the purpose well, and, besides being neat, they have another advantage, inasmuch as they last a long time and never require renewal.

I would again urge the necessity of having a sharp eye to plants of doubtful hardiness that they may be afforded proper protection from frost, for which this season they are little prepared. The first to suffer are those that have been growing lately, which makes them more tender, and where *Belladonna Lilies*, *Alstroemerias*, *Tritonias*, *Sparaxis*, *Hyacinths*, and such like are in beds or borders, they should at once have a heavy mulching of coarsely sifted leaf-soil, which will keep them from harm; and for heaping up round the collars of single dwarf Roses, or putting over the crowns of any other plants, nothing is more valuable, as it not only shields and shelters, but nourishes and fosters the action of roots, as it contains most of the food they require. As a non-conductor and a frost repeller, Cocoa-nut fibre is quite equal to it, and where leaf-soil cannot be had may be used in its stead, but in all cases when done with for the purpose of protection, the Cocoa fibre should be cleared away, as it is highly dangerous to the health of plants when mixed up in the ground, where, if it lays quiet long, it is almost sure to breed fungus. Beds and borders in which there are no plants will be much benefited by being trenched, in doing which the subsoil need not necessarily be brought to the surface, the object in trenching being more to break up the hard pan and let any roots down, as there they can search out and find what moisture they want. If the beds and borders are bounded with Box the present will be a good time to renew the same, or make good any defects; in doing this it is a good plan to change the soil, and if the Box does not succeed well to add some chalk, as the roots are particularly fond of calcareous matter, which imparts a fine dark green colour to the leaves of the plant. For ground that is at all inclined to be stiff, one of the best edgings to walks is *Gentiana acaulis*, which in spring sends up crowds of the most lovely blue flowers. In light soils it does fairly well, but in either case the best way to manage it that I know of is to plant between large flints or pebbles, as these form a capital boundary to a path or bed, and are a great help to the *Gentians* by affording a cool root-run down and under their sides, round about which they thread their way and form quite a mat.

#### INDOOR PLANTS.

T. BAINES, SOUTHGATE.

**Epiphyllum truncatum.**—So accommodating are *Epiphyllums* in their time of flowering that with a sufficient stock and due attention in their management they may be had in bloom through a considerable portion of the winter. To secure this it is only necessary to vary the time of growth and rest in the plants. Those that have been forced into flower early, should now when the blooming is over be placed where they will at once have warmth enough to push them on, so that they may have time for a long rest and thorough ripening of the growth, which is essential to their being forced early. The naturally limited root room these plants will do with is

often the cause of their being kept so long in small pots that their strength is impaired, and not unfrequently through the same cause the drainage becomes defective, in which condition the plants cannot possibly thrive. The usual manner of growing them is grafted on the *Pereskia* stock in the form of standards, short or tall. In this way they admit of being arranged when in flower with other plants. They form nice little bushy heads when grown on their own roots, in which style they soon get large enough to be effective, as good sized pieces will root; if these are now put in a brisk heat they will soon get established; they should be placed singly in small well-drained pots, in loam to which a large amount of sand and some finely broken crocks have been added. They ought only to have as much water given to the soil as will keep it from being so dry as to cause the cuttings to shrivel until roots are formed, when more may be applied. The larger growing kinds of the *Ackermannii* and *speciosum* section are not grown now so much as in times past, or as their merits for decorative purposes entitle them to. Provided they have a fair amount of heat with full exposure to all the light and sun possible whilst their growth is being made, with a thorough roasting out-of-doors in the summer, and they are kept moderately dry and not too cold in winter, they will bloom profusely in spring and summer, their gorgeous flowers giving an effect which few other things are capable of.

**Abutilons.**—There has been a marked improvement in the varieties of these plants that have been raised in late years, especially in the more compact growth and freedom of flowering in the new kinds. Where a little extra warmth, such as that of an intermediate house, can be given them, they will keep on producing flowers through the winter. The bright red sorts are very useful for cutting, as also the white *Boule de Neige*, which is still one of the best. If grown in small pots a little manure water once a week will help them, as from their natural free disposition to make roots the soil is liable to become exhausted, and it is better at this season to assist them with stimulants than to have recourse to potting. Where young stock is required cuttings may be put in to strike in warmth as soon as they can be had in a fit state.

**Imantophyllums.**—These plants are so manageable that they will bloom at almost any time of the year when wanted by subjecting them, after they have had a good rest, to heat. If good large examples are at hand, one or two may be put in moderate warmth, where they will quickly push up their flower-stems. There is a great difference in the brightness of colour and in the size of the different forms of these plants, some of which are so superior to the ordinary variety as to make it comparatively not worth growing. *Imantophyllums* are naturally much slower to increase than plants that produce cuttings in the ordinary way, and where only a limited stock of a good form exists it is desirable that it should be increased. With this view the plants ought to be kept in heat and the crowns divided as they get strong enough. They like plenty of root room, and as fast as the soil gets full of roots they should be moved on.

**Euphorbia jacquiniæflora.**—When well managed this is one of the best of all winter flowering plants, either grown in pots or planted out. One of its peculiarities is that it makes little roots and is impatient of being over-watered. It is usually short-lived when planted out, for although so treated it grows fast and gets much stronger than it ever does when its roots are confined, yet it generally dies off suddenly; this often occurs after a considerable quantity of the shoots bearing flowers have been cut. The same is not unusual with this *Euphorbia* where grown in pots; this points to the necessity of using more than ordinary caution in giving water at a time when the reduction of the shoots and leaves renders the plants less able to take it. When this useful subject is turned out, the bed should always be much smaller than is given to the generality of other things. Where it is grown in pots, if the plants are

strong, they will give a second crop of flowers from shoots produced below where the first bloom was forthcoming. Manure water in small quantities will help the second flowering. In the same way all other winter-blooming stock that produce a second growth of flowers will be benefited, as the roots in most cases will have impoverished the soil during the formation of the first crop of bloom.

**Dionæa muscipula.**—This remarkable plant, which often grows well for a time and then dwindles away, may easily be kept for an unlimited period in a thriving state if it is fairly treated. The usual cause of its getting into an unhealthy state is through keeping it too hot, which induces over much growth for a time, by which it gets exhausted. The plant will grow in an ordinary greenhouse temperature, but likes a little more warmth than this; at the same time it cannot bear to be dry at the roots, and a dry atmosphere is equally unsuited to it. Now when it is at rest it should be kept at about 45° in the night, always maintaining the soil quite moist, but not confining the plant under a bell-glass or hand-light, unless the atmosphere of the house in which it is kept is unusually dry.

**Kalosanthes.**—Whether large specimens in big pots or small stock, such as that grown from cuttings put in early last spring, they should be accommodated with the lightest position the greenhouse affords. Give no more water than necessary to preserve them in health, but, though it is advisable to keep them drier at the roots during the dormant season than most things require, this must not be carried too far, for if the leaves shrivel at all they will perish, leaving the lower part of the stems in a bare unsightly state. It seems singular that *Kalosanthes*, which flower in the advanced summer at a time when there is not much variety, should now be so little grown; and yet there is not a conservatory or greenhouse but would be brighter for their presence. They are amongst the easiest of all plants to propagate and grow, and are certain bloomers when fairly treated. They are the most useful grown in small pots, as when used in this way in sufficient quantities they produce a better effect in a mixed assemblage of plants than when larger, but limited in numbers.

#### FRUIT.

W. COLEMAN, EASTNOR CASTLE.

**Vines.**—If late black Grapes are still hanging on the Vines lose no time in getting them cut and bottled, as nothing can be gained by allowing them to remain, and it is now well known that late hanging is quite as detrimental to the Vines as early forcing. Choose a mild dry day for cutting, sever the wood just above the pruning bud, leave it the full length beyond the bunch, insert in bottles of clean soft water, and ventilate the Grape room for a few days with gentle fire-heat to dry up moisture which may have escaped during the process of bottling. If the Grape room is properly constructed, and not liable to be affected by sudden fluctuations of external temperature, a mean of 45° or a few degrees lower in severe weather will be quite sufficient for all the black kinds, while Muscats will retain their colour for a greater length of time in a temperature of 50°. When all the Grapes are cut follow directions contained in my last paper, and when pruning, cleansing, and top-dressing is finished, throw the houses open to the full extent of the ventilators, unless the weather is very severe. Examine internal borders, and if the surface roots have become very dry give a moderate supply of water before the top-dressing is placed over them. Remove the shutters from external borders, top-dress with good loam and crushed bones, and protect from frost with fresh stable litter. Cut back young canes which have not hitherto borne a crop of fruit, and allow the points to droop to the level of the pipes, or tie them to the wires in a horizontal position near the front ventilators, where they can have a free cir-



ulation of air. Also cut down pot Vines intended for growing into fruiting canes. Dress the cuts with styptic, and keep them in a dry cool house until the time arrives for starting. Select thoroughly ripened wood for eyes, insert in small pots firmly filled with sandy soil, and keep them in a cool pit for three weeks before plunging them in bottom-heat. If any of the houses require internal painting, immediately after the Vines are cleansed and tied down is the best time to get in the workmen. Add a little turpentine to the paint, and wash the walls with a mixture of quicklime and sulphur.

Early houses from which ripe Grapes are expected in May will soon be fit for the general dis-budding, a process which must be regulated by the vigour of the Vines, and the position of the spurs. If widely placed, two shoots may be left on each spur, the terminal shoot to give the bunch, and one nearest home to give the pruning bud next year, and as this will be the weaker of the two it may be allowed to supply the greater part of the lateral foliage for covering the trellis. Gradually increase the temperature to 58° or 60° on mild nights when the bunches become prominent, but avoid set figures when the weather is unfavourable. Syringe regularly with water a few degrees higher than the mean of the house. Force by day when clear and bright, and husband fire-heat by paying regular attention to the fermenting ridges.

**Figs.**—Within the last few years the increasing demand for early Figs, without which a first class dessert can hardly be considered complete, has led to the more general cultivation of the best kinds, and it is gratifying to find in the majority of places fairly furnished with glass, one or more houses devoted to the culture of Brown Turkey, Negro Largo, White Marseilles, Osborn's Prolific, and others either in pots or planted out in internal borders. Where their growth has not been attempted this is a favourable time for making a start; and as good fruiting trees established in pots can be purchased at any of the leading nurseries, and every gentleman's park produces Oak or Beech leaves, the best of all materials for giving bottom-heat, there are few difficulties in the way of a new beginner having ripe fruit by the end of May. For early forcing trees in pots are recommended, but if confined at the roots they do equally well in inside borders composed of good loam and old lime rubble resting upon liberal drainage. Light span-roofed houses or pits adapted to the growth of early Grapes or Melons answer best, as Figs, although they may be carried through the early stages in a swamp, require plenty of light, heat, and air from the time of flowering until they are ready for gathering. In many places the earliest trees started in November will be pushing forward the terminal buds, and the young Figs will be swelling fast. When this stage is reached the night temperature may range from 56° to 60°, and that by day from 65° to 75°, with a little air when it can be given without creating a draught. Syringe well backwards and forwards to prevent the appearance of red spider; keep the roots liberally supplied with warm diluted liquid, and make additions to the beds of fermenting material when the heat shows signs of declining to 60°. An abundance of Figs for the London season being most valuable, a second house may be started without delay after the end of this month. Former directions having been followed, all detailed operations will have been completed and if not already done the borders may be well watered with warm water at a temperature of 90°, mulched with good rotten manure, and watered again to insure the complete moistening of the soil quite down to the drainage. This done, commence syringing twice a day and allow the temperature to range from 50° at night to 60° by day; prune or rather thin the shoots in late houses, wash well to remove the remains of spider and scale, tie into the trellis, and ventilate freely until the time arrives for starting the trees into growth.

**Hardy fruit.**—Now we have a change to more seasonable weather take advantage of frosty mornings for wheeling out manure to Raspberries, Strawberries, and all kinds of bush fruit. It is not

necessary for the manure to be thoroughly decayed, as a long period will intervene before the plants actually require stimulating food, but once placed on the borders the roots will be protected from frost, and digging being objectionable the work will be finished for the season. If the planting of fruit trees has not been completed, and the ground continues wet and adhesive, allow them to remain laid in until the buds begin to swell and there is a fair prospect of immediate root action; meantime prepare good compost, consisting of fresh loam and burnt earth. Keep it protected from heavy rains. Stake and mulch as soon as the trees are planted. By this time the pruning of nearly all the wall trees will have been brought to a close, and advantage having been taken of mild open weather nailing will be well advanced. Peaches and Apricots should be left till last, but all old shreds and nails should be removed for the twofold purpose of exposing the young wood to the action of the weather and cleansing the walls. If the old spurs on the latter have become long and naked now or a little later will be found the best time for cutting back to the main shoots. Healthy old trees in favourable localities may be entirely denuded of spurs with the certainty that one or two years will refurnish them with young flowering wood in the best possible position for the protection of the blossoms and the swelling of the fruit. If, owing to the mildness of the season, Figs on open walls have been hitherto neglected, see that some dry protecting material is at hand ready for use on the first approach of frost.

#### KITCHEN GARDEN. R. GILBERT, BURGHLEY.

WE have been employed during the week in wheeling rotten manure to top-dress our quarter of Asparagus; also in digging a large quarter for Artichokes of both kinds. We have been moreover filling up vacancies occasioned by slugs, &c., in the case of Cabbages and Lettuces. During this very mild weather slugs have been tiresome and plentiful. Beds for Potatoes, Carrots, and Radishes should now be made up. We simply dig out a square space, making it to fit the frame, and fill up nearly to the glass, which settles down sufficiently low to admit of the inmates having plenty of room in which to grow and flourish. Forcing this season is a matter of little importance, the weather being so mild that little heat and less trouble are needed. We force Asparagus in old pine stoves, and cut it when 4 in. high, all being green and wholly eatable. The very small is useful for "Asparagus Peas;" Rhubarb we force in the dark, with leaves alone, and thus treated the flavour is much better than if manure were employed. Seakale we never lift, but cover with pots in the old, but useful system, and so always have a good supply. We have plenty of Cucumbers; a variety I have not noticed before comes from Mr. Frost, of Maidstone, and is called Frost's Prolific; it grows from 12 in. to 18 in. in length, and is a most prolific and good variety. We keep our Cucumbers at 65° at night, but allow the glass to run up to 75° or 80° in the daytime before giving air. Our Cucumber house is a span-roofed structure, with brick sides, and needs no more fire-heat than a lean-to.

#### NOTES AND READINGS.

The seed catalogues are out, and it will interest gardeners to know that, according to some of the "most respectable houses in the trade," some of the new Peas are all within a fraction of an inch in diameter—as large as marbles, and that the pods are exactly 8 in. long; that, in fact, Peas are now as large as Broad Beans. We take it that no respectable member of the trade would seek to impose upon their intelligent customers, and these are dimensions given in their catalogues. The new blue Chinese Primrose is "blue" without any doubt, and a "true blue," according to the artist, and must be a decided

acquisition. Cucumbers, as usual, do not appear to depend upon the vigour of the plants, but are produced just according to the amount of room they can find to push their way in the world. New Potatoes are exactly the shape of a plover's egg, and equally "eyeless," and all other things are of proportionate size and excellence.

I am sorry if I have in any way misunderstood or misrepresented Messrs. Spyers and Thomson. From Mr. Spyers' account I certainly was under the impression that the doors were the only means of ventilation, and I think no one could well think otherwise. In regard to Mr. Thomson, I am willing to believe he did not intend his words to be adopted literally, but when he stated (Vol. XVI.), or rather made a lady say, that it "was not a hothouse, but a greenhouse" in which the doctor grew his East Indian Orchids, adding himself that the doors of the same house "stood wide open" the most of the day in October, leaving your readers to infer that the door was an outer one, instead of one opening into another warm house, he certainly cannot blame any one for misapprehending him, and that he was misapprehended was clear from the correspondence that took place at the time. Dr. Paterson himself must also be aware that simply saying that his patients sit or lounge with comfort in his hottest houses is no safe guide for cultivators. A doctor, of all people, and an eminent one as well, must be aware that such hap-hazard indications of temperature and treatment are not to be trusted in dealing with human beings, either in health or disease, and he cannot blame those who have to deal with subjects only less sensitive grown under strictly artificial conditions if they ask him to be as accurate on such points as he would have to be if he was dealing with members of his own profession. It seems strange that a record of the temperatures of his houses cannot be procured, seeing he does provide for the special wants of his favourites by a greater number of divisions and temperatures than most cultivators can afford. Opening the door of the hot division into the intermediate one, and the door of that into a cooler house is not an uncommon practice, and is done by ourselves every day. There need have been no mystery in the subject at all, but Orchid growers whom I have discussed the matter with confess that Dr. Paterson's self-registering thermometers, sensitive as they probably are, are not the kind to be trusted by Orchid growers generally. That these opinions are shared by such men as Mr. Spyers is clear from their own candid and clear instructions on Orchid culture. I shall watch with interest how far Mr. Spyers' own practice may be in future influenced by what he learned at the Bridge of Allan. There can be no better guarantee of the soundness of any practice than that those who recommend it follow it themselves.

We have always regarded Mr. Spyers' instructions on the subject of Orchids as trustworthy, but when he comes to speak of Vines and root production, our ways, and we should say the ways of any Grape grower, separate. I allude to his recent remarks in the *Gardeners' Chronicle*, where he states that Vines and other trees and shrubs, but more particularly Vines planted in a poor and hungry soil, "send out hundreds and thousands of roots so as to take from the soil every particle of nutriment." The theory that a poor wretched soil is a breeder of roots and *vice versa* is a most erroneous one, and opposed to the teaching of nearly all cultivators, and notably that of such men as the late Mr. Rivers, who constantly inculcated rich feeding in order to produce roots. The whole practice of top-dressing



with rich compost is based upon the same principle. The Vine makes far the greatest quantity of roots in a rich soil, and a very simple experiment will satisfy anyone of the fact. Roots of plants like foraging parties of a higher order are always thickest on the ground where there is most to be got, and it is opposed to the tenets of vegetable physiology to suppose that their industry and ramifications are in proportion to the poverty of the medium in which they grow.

PEREGRINE.

## LAW.

**Claim for compensation** for damages to fruit trees and other crops by smoke.—On Friday, 16th inst., before the County Court judge and a special jury at Sunderland, Messrs. R. Gibson & Sons, market gardeners, sued Messrs. J. G. Kirthy & Co., brickmakers, for damages alleged to have been sustained by their garden from the defendants' brickworks. Mr. R. Gibson, the principal plaintiff, and Messrs. A. Balfour, of Newcastle, W. Crament, of Sunderland, and other witnesses gave evidence as to the sulphureous fumes and masses of smoke that pass from the brickworks into plaintiff's garden, thus damaging his trees and crops generally. Mr. Balfour estimated the damage done at £35. Mr. Jno. Thompson (principal of the firm of Messrs. J. Thompson & Son, nurserymen, Ravenside, Newcastle) and Mr. Peter Ferguson, of Mere Knolls, Monk Wearmouth, attributed the yellow hue of the plaintiff's trees to red spider, the injured foliage to late frosts, and the loss of the Onion crop to the ravages of the Onion fly; the damage to the evergreens was attributed to the severity of the late winters, and could be seen at all places where evergreens are grown. Mr. Ferguson made special mention of the frosts in June and of the severe effects of wind waving in damaging foliage. Other witnesses were called. The judge, in summing up, said that wherever works of this sort went on vegetation was sure to suffer. The jury therefore found for the plaintiff—damages £30.

**Kaile v. La Fargue.**—The defendant in this case came to my nursery wanting some trees to plant on a bank close to palings, and was recommended to have *Arbor-vitæ*, *Cupressus Lawsoniana*, or plants of that character, but he did not order

them. Mr. Kaile came some time afterwards and asked for Spruce Firs, 20 ft. high if he could have them. He was shown some 15 ft. to 18 ft. high; he purchased forty. They were delivered at defendant's residence, paid for by Mr. Kaile, and no word of complaint ever reached me from him. Now I give the most positive denial to Mr. Kaile's statement that the trees "were selected by the defendant," who never saw them in my nursery, nor did he even go into the field in which they were growing. I ask if any nurseryman who understands planting would place Spruce Firs 15 ft. to 18 ft. high on a steep dry bank not wide enough to accommodate their roots, and if he would bury their stems to the depth of 18 in., as I found these when asked by the defendant to inspect them? I stated at the trial that it was my custom (and that of my father before me) to replace failures where the planting was done by my own men, and that I believed other nurserymen of any position would do the same. Whether the award of the judge was the result of my "sole evidence" and my "trade circular" I know not, but I may state that my foreman, the defendant, his gardener, and two if not three other witnesses were called for the defence, as well as myself. It is not surprising that Mr. Kaile, like most litigants who implicitly believe in the strength of their case, should be dissatisfied with an adverse verdict.—MAURICE YOUNG, *Godalming*.

**The Horticultural Club** is removing to Henrietta Street, Covent Garden, at Ashley's Hotel, where arrangements have been made which, it is believed, will tend much to increase the value of the club, especially for the country members, as they will be able to obtain bed-room accommodation in the house.

**Manchester Botanical Society.**—The following are the dates of this society's exhibitions for 1882: At Town Hall, March 14, April 4, and May 2; National Horticultural Exhibition opens at the Gardens, Old Trafford, May 26; Rose show, July 14 and 15; Gooseberry show and dinner table decorations, August 7; Cottagers' show, September 8 and 9; Chrysanthemum show at Town Hall, November 21.

**Special prizes.**—Messrs. Carter & Co., High Holborn, intend offering the following money prizes at the various meetings of the Royal Horticultural Society during next season, viz.: May 23—At the great summer show: For the

best fruit of Carter's Blenheim Orange Melon—1st prize, £2 2s.; 2nd, £1 10s.; 3rd, 15s.; 4th, 10s. 6d.; 5th, 7s. 6d. June 27—At the Pelargonium Society's show: For the best four dishes of the following Peas (50 pods each) viz.—Carter's Stratagem, Carter's Telephone, Carter's Pride of the Market, Telegraph—1st prize, £5; 2nd, £3; 3rd, £2; 4th, £1; 5th, 10s. 6d. August 3—At the show of the Association of British Bee-keepers: For the best six pots of Tomatoes, as follows, viz.—Carter's Golden Drop, Carter's Grapeshot, Carter's Red Currant, Carter's Dedham Favourite, Carter's Greengage, Carter's Holborn Ruby—1st prize, £3 3s.; 2nd, £2 2s.; 3rd, £1 1s.; 4th, 10s. 6d. December 12—At the winter meeting: For the best twelve dishes of vegetables, to comprise—12 Onions Golden Queen, 12 Onions Silver Ball, 12 Onions Golden Globe, 12 Turnips in variety, 3 Cauliflowers, 3 Celery, 50 Brussels Sprouts, 12 Potatoes, 6 Carrots, 6 Parsnips, 3 Red Beet, 6 Leeks—1st prize, £5; 2nd, £3; 3rd, £1 10s.; 4th, £1; 5th, 10s.; 6th, 7s. 6d.

## OBITUARY.

WE learn from Mrs. Williams that one of our most esteemed correspondents, Mr. THOMAS WILLIAMS, of Bath Lodge, Ormskirk, died on December 26 at the age of 70 years, and was interred on Thursday. Mr. Williams, as may have been inferred, had long been a contributor to our pages, and those who read his notes must have seen in them evidence of wide knowledge and much enthusiasm for plants, and especially hardy plants of all kinds. We never had the pleasure of seeing our friend in his garden, and can say nothing of his life previous to the last dozen years from our own experience, but have always understood that his collection of plants was very interesting and choice, and regret very much the loss of one so hearty and enthusiastic in the case of his favourite pursuit.

**Cacti indoors and in the open air** (p. 601)—Erratum.—"Echinocereus Fendleri bears some of the brightest coloured flowers which I have ever seen." For "brightest coloured" read "brightest purple-coloured." The colour of the flowers is a splendid rich purple with a satiny gloss but there are orange and scarlet flowers which might fairly be called brighter.—E. G. LODER, *Floore, Weedon, Northamptonshire*.



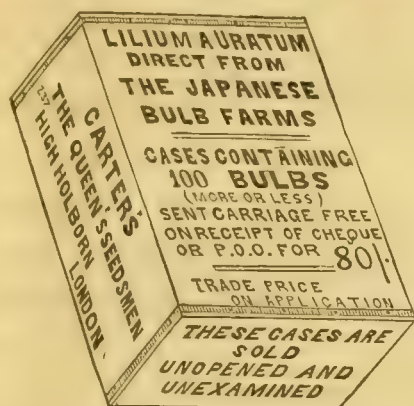


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Obituary.

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